



**NEAR EAST UNIVERSITY
INSTITUTE OF GRADUATE STUDIES
DEPARTMENT OF ARCHITECTURE**

**ANALYSIS OF SOCIAL SUSTAINABILITY FOR NEIGHBORHOOD AREA:
CASE STUDY ADDIS ABABA ETHIOPIA**

M.Sc. THESIS

ROBEL SILTAN SEYOUM

Nicosia

June 2023

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M.Sc. THESIS

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Approval

We certify that we read the thesis submitted by Robel Siltan Seyoum titled **“ANALYSIS OF SOCIAL SUSTAINABILITY FOR NEIGHBORHOOD AREA: CASE STUDY ADDIS ABABA ETHIOPIA”** and that in our combined opinion it is fully adequate, in scope and quality as a thesis for the degree of Masers of Education Sciences

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Declaration

I hereby declare all the information, documents, analysis and results in this thesis have been collected and presented according to the academic rules and ethical guidelines of the institute of graduate studies, Near East University. I have fully cited and referenced information and data that are not original to this study.

Robel Siltan Seyoum

15/06/2023

Acknowledgment

I would like to express my deepest gratitude to my Father Siltan Seyoum Kahsay and my supervisor Assoc. Prof. Dr. Can Kara for their support and mentorship throughout the entire research journey. I am also thankful to all academic staff at Near East University and the members of my thesis committee Assist. Prof. Dr. Cilen Ercin and Assoc. Prof. Dr. Aminreza Iranmanesh for their valuable insight. Additionally, I want to express my heart felt appreciation to all my family for their love and support during my entire study.

Robel Siltan Seyoum

Abstract**Analysis of Social Sustainability for Neighborhood Area: Case study Addis Ababa
Ethiopia****Seyoum, Robel Siltan****Assoc. Prof. Dr. Can Kara****MA, Department of Architecture****June 2023, (90 pages)**

This thesis analyzes the social sustainability of two neighborhood areas in Addis Ababa Ethiopia. The main goal of this research is to define and explore different aspects of social sustainability, develop indicators and analyze the neighborhood areas. To achieve this descriptive type of comparative case study approach is used. The study looked at the community's social equity, safety and security, social cohesion, neighborhood characteristics and health safety risk and energy to analyze the neighborhood areas. To do this a total of 509 questionnaires were distributed for both case area residents and SPSS was used to examine the results. The result of this research shows both cases have no awareness about social sustainability, the majority did not have a sense of belonging and also shows a positive significant relationship between the indicators which can provide a valuable insight and help with the improvement of the neighborhood. Overall, this thesis demonstrates that social sustainability is important to create an equitable society address the social challenges, and focus on encouraging well-being, social justice and livability in a community. This research helps in making the awareness that's necessary to the neighborhood area and further studies to be done on the relevant issue of socially sustainable neighborhoods.

Key Words: Social Sustainability, Indicators, SDG, Addis Ababa, Neighborhood

Özet

Analysis of Social Sustainability for Neighborhood Area: Case study Addis Ababa Ethiopia

Seyoum, Robel Siltan

Assoc. Prof. Dr. Can Kara

MA, Mimarlık Bölümü

Haziran 2023, (90 sayfa)

Bu tez, Addis Ababa Etiyopya'daki iki mahalle bölgesinin sosyal sürdürülebilirliğini analiz ediyor. Bu araştırmanın temel amacı, sosyal sürdürülebilirliğin farklı yönlerini tanımlamak ve keşfetmek, göstergeler geliştirmek ve mahalle alanlarını analiz etmektir. Bu tanımlayıcı türde karşılaştırmalı vaka çalışması yaklaşımına ulaşmak için kullanılır. Çalışma, mahalle alanlarını analiz etmek için topluluğun sosyal eşitliğine, emniyet ve güvenliğine, sosyal uyumuna, mahalle özelliklerine ve sağlık güvenliği riskine ve enerjisine baktı. Bunu yapmak için, her iki vaka bölgesi sakinlerine toplam 509 anket dağıtıldı ve sonuçları incelemek için SPSS kullanıldı. Bu araştırmanın sonucu, her iki vakanın da sosyal sürdürülebilirlik konusunda farkındalığa sahip olmadığını, çoğunluğun aidiyet duygusuna sahip olmadığını ve ayrıca değerli bir içgörü sağlayabilecek ve mahallenin gelişmesine yardımcı olabilecek göstergeler arasında pozitif anlamlı bir ilişki olduğunu göstermektedir. Genel olarak, bu tez sosyal sürdürülebilirliğin eşitlikçi bir toplum yaratmak için önemli olduğunu göstermektedir. Bu araştırma, mahalle alanı için gerekli olan farkındalığın oluşturulmasına ve sosyal olarak sürdürülebilir mahalleler konusunda ilgili konuda yapılacak ileri çalışmalara yardımcı olmaktadır.

Anahtar Kelimeler: Sosyal Sürdürülebilirlik, Göstergeler, SDG, Addis Ababa, Mahalle

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List of Abbreviations

WCED:	World Commission on Environment and Development
SDG:	Sustainable Developments Goals
MDG:	Millennium Developments Goals
UN:	United Nation
SE:	Social Equity
SS:	Safety and Security
HSE:	Health Safety, risk, and Energy
NC:	Neighborhood characteristics
SEB:	Social Equity of Bole Gerji neighborhood
SSB:	Safety and Security of Bole Gerji neighborhood
HSEB:	Health Safety, risk, and Energy of Bole Gerji neighborhood
NCB:	Neighborhood characteristics of Bole Gerji neighborhood
SEM:	Social Equity of Mikililand neighborhood
SSM:	Safety and Security of Mikililand neighborhood
HSEM:	Health Safety, risk, and Energy of Mikililand neighborhood
NCM:	Neighborhood characteristics of Mikililand neighborhood

CHAPTER I

Introduction

Background of the Study

Sustainability within the last 30 years was initially defined as a significant conceptual framework indicating city strategy and growth, which enabled substantial work on the development of urban design, and architecture (Williams et al., 2000). In 1987, According to the World Commission on Environmental and Development sustainable development is stated as "a development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs." (WCED, 1987).

As a concept, it was established in conjunction with a critical awareness of environmental devastation and the 1980s withdrawal from community uncertainties displayed as scarcity, deficiency, and urban negligence staining numerous portions of the earth that are unsound (Jenks & Dempsey, 2005).

The social dimension of sustainability has acquired greater prominence in recent years a Necessary part of sustainable development, which increasingly became knotted with the subject of sustainable communities. At first, economic and environmental concern dictate the discussion concerning sustainable development (Peter & Frits, 1989) and the sustainability agenda didn't take the social issue of a community a serious consideration until the late 1990s (Hediger, 2000). Despite the fact that a growing body study on social sustainability, the grasp of the notion is still hazy and constrained by methodological and theoretical restrictions deriving from its disciplinary dependent definitions and measures.

Academicians wrote about social sustainability in many different ways some have referred to social sustainability as "a life-enhancing condition within communities" with a form illustrating a very strong logic of social cohesion, well-being together with equity of access to the main facilities like housing, transportation, education, and open spaces (Mckenzie, 2004).

Some definition of the social aspect of sustainability is the form of increasing the health of the public by understanding and giving the community the needs preserving the cultural

and spiritual principles (Stren & Polèse, 2017). It is an arrangement and organization which affects the interaction of many different groups of people that want to achieve equity, and sufficient facilities of social services which include education, health, gender equality, political participation, and liability (Balkema et al., 2002).

In the last few decades, sustainability development that gained attention as organizations are placing more weight on measuring sustainability. It has been measured by analyzing the performance the dimensions of sustainability using indicators and it can be perceived as pure and neutral instruments that are technical, which helps in the measurement and decision-making process for the improvement of sustainability at the country and city levels which can also be thought of as message transporters. According to (Gallopín, 1997) A sustainability indicator is also an operational representation of an attribute for a system (which can be property and quality).

Indicators are representational (Hale et al., 2019) and Various current social indicators have been regarded by international organizations as a way of analyzing the social aspect of sustainability (Mcguinn et al., 2020). The analysis of social sustainability is a difficult task, and more research is needed to overcome this challenge (Baffoe & Mutisya, 2015). There is a necessity for clarity regarding social targets of social sustainability which must be addressed on the same level as economic and environmental issues of sustainable development (Spangenberg et al., 2002). and this is the reason why the identifying and measuring indicators a crucial task in the development process.

Statement of the Problem

Social sustainability started to be viewed as a key characteristics of sustainability program around the late 1990s. Afterward, it received a Substantial recognition. Even though a tremendous amount of work has been done recently, there has not yet been agreement on what social sustainability entails, and this idea is still somewhat under-theorized (Rasouli & Kumarasuriyar, 2016). There is insufficient number of research done on social sustainability in neighborhood area, creating less awareness given to the subject even though it is one of the major necessities of sustainability for the current and upcoming generations.

Social sustainability concept has been neglected in contrast to the economic and environmental sustainability. Economic and Environmental matters appeared being the center in the debate and minor role is played by social aspects in the discussions regarding sustainability. surprisingly small consideration was also given to the built environment disciplines interms of how social sustainability would affect it (Dempsey et al., 2011).

Countries like Ethiopia suffer from a lack of urban service and infrastructure, homelessness, environmental degradation, urban decay, and high unemployment like many other developing countries (Atlaw, 2014). One of the main problems the city of Addis Ababa facing is social sustainability in neighborhood areas.

Addis Ababa is a continuously growing city that has accommodated its growing number of dwellers in apartment complexes, condominiums, and shared housing (Charitonidou, 2022) with minimum consideration of social sustainability because of this it has affected the community's social cohesion and social equity which is damaging the society's present and future social life.

Aim and Objective

Aim

This study aims to analyze social aspect of sustainability in a neighborhood area by constructing a group of indicators through a review of SDG (Sustainable Development Goals) and other research as a reference and using them to analyze the neighborhood.

Objectives

The first objective of the research is to define and explore different aspects of social sustainability according to different scholars.

The second objective for the research is to construct a set of indicators through a review of various indicators for the two neighborhoods.

The third objective is to analyze the social sustainability of 2 different neighborhoods (Bole Gerji and Mikililand) using the developed indicators in Addis Ababa Ethiopia.

Research Question

Considering the given objectives, this research aims to search and deliver a response to the following questions.

- What is social sustainability and its key principles to have a sustainable neighborhood?
- What are the indicators used to measure social sustainability performance in neighborhood areas?
- What measures can be taken to increase the neighborhood's social sustainability?

Significance of Research

Significance of this research is to contribute for a greater understanding towards social sustainability among the three pillars of sustainability in developing countries like Ethiopia. The study will focus on social sustainability in a neighborhood which is crucial in creating a safe and livable society. This research seeks to analyze the social sustainability of Bole Gerji and Mikililand neighborhoods and understand the impact it has on the inhabitants.

Neighborhoods have a huge impact in shaping the life quality the community will have and it is the major component to build a society. Improving the main principles in a neighborhood like safety, social cohesiveness, social equity and neighborhood characteristics can help create a health and prosperous society.

The other significance is in many developing countries like Ethiopia we are facing inequalities in many dimensions of sustainability like social equity, justice, safety, and security. By ensuring all the people living in the neighborhood have access to all the fundamental services regardless of their socioeconomic status, we can have a socially sustainable community.

This research will use a set of indicators developed using sustainable development goals and other research as a reference which will help policymakers and planners to make decisions that support equitable and sustainable development by having a thorough understanding of the main dimensions that social sustainability in the neighborhood.

Overall, the research will help improve efforts to build more livable and sustainable communities and contribute to a more comprehensive knowledge of neighborhood development and social sustainability.

Scope and Limitation

Scope

This research will measure the social sustainability in neighborhoods by analyzing their social equity, cohesion, safety, and neighborhood characteristics. This study will concentrate on the Ethiopian capital city Addis Ababa. Addis Ababa is divided into ten sub-cities, and this study will concentrate on 2 different neighborhoods Bole, and Kolfe Keranio. The project will run from 2022 to 2023 and will collect and analyze data using both quantitative and qualitative research methodologies. The research will rely on both primary and the secondary source, like academic publication and questionnaires. The study will be limited to only the social dimension of sustainability. The research will not cover the other dimensions, such as economic and environmental sustainability as these have gained more attention. The study's findings will be used to assist policymakers and other researchers to promote socially sustainable development in developing countries.

Case area: Ethiopia is a land-locked country located in the horn of Africa having a multilingual nation having more than 80 ethnolinguistic groups. Ethiopia has the maximum number of UNESCO World Heritage Sites in Africa. The nation's culture is various and largely structured alongside ethnolinguistic positions (Wikipedia (n.d.).

Addis Ababa accommodates 30% of the population in cities in Ethiopia. The city is among the fastest developing cities that are the center of Africa, having a population of 4 million, which practically doubles every ten years.

Figure 1, 2.

Map of Ethiopia (Mappr, 2021) and Map of Addis Ababa (Mazhindu et al., 2012)

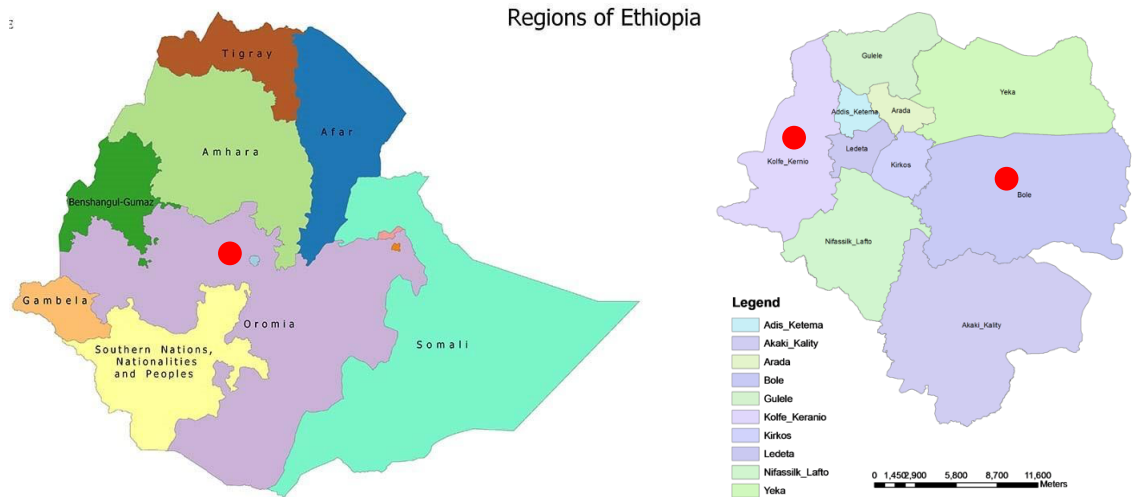


Figure 3, 4.

Map of Bole Gerji Neighborhood and Mikililand Neighborhood (google earth)



Limitation

Analyzing social sustainability is crucial and it is very important to recognize the limitation while measuring using indicators. Sustainability indicators mainly focus on the environmental and economical aspect and fall short to consider the social aspect, there for developing a comprehensive measuring indicator is challenging.

Lack of data availability and consistency is the main limitation of the research as it is impossible to get information about a developing country like Ethiopia while many governmental organizations are not willing to share the information. It is also difficult to quantify some of the information.

CHAPTER II

Literature Review

This section explores the concept of sustainability according to different scholars, sustainable neighborhoods, definitions and key themes of social sustainability and sustainability indicators.

Sustainability

In Accordance to Brown et.al. (1987) a society that is sustainable is “long-lasting, self-sufficient, and less vulnerable to external influence.” Its foundations include soil and water conservation, effective use of renewable energy, harvest regulation, and a scattered, immobile population that leads a less affluent lifestyle. The sustainability definition has three dimensions which are explained below.

Social sustainability: The ongoing fulfilment of fundamental human needs like shelter, food, water and more advanced cultural and demands, including education, security, employment, recreation, and freedom might all be included in a social description of sustainability. The social approach frequently gives individuals a higher priority. Therefore, according to social definitions, sustainability could mean ensuring the survival and happiness of the population including the satisfaction of even the poorest people's basic requirements.

Environmental Sustainability: The continuous productivity and function of ecosystems are the main elements in the definition of environmental sustainability. Protecting genetic resources and preserving biological diversity is necessary for long-term ecological viability. For the long-term viability of the ecosystem, short-term natural variability is required.

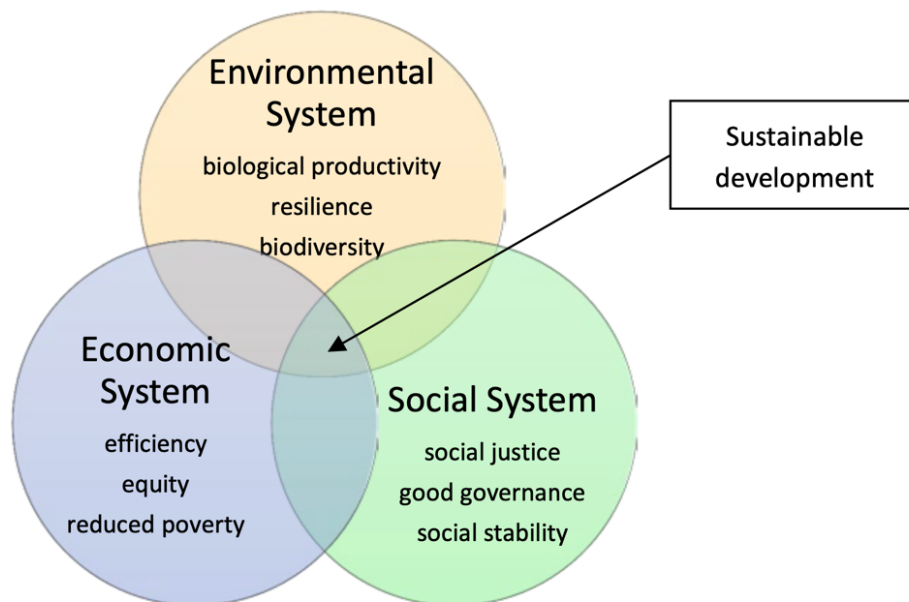
Economic sustainability: It is harder to pin down what sustainability means economically. Most of the time, economists disregard the issue of sustainability because they believe economic growth is unavoidable. When they do, they must enhance cost- efficiency, reduce risk, increase economic wellbeing and attractiveness.

Brown et.al. (1987) The necessary elements for defining sustainability are: 1. a stable human population; 2. restricted economic growth; 3. a special importance on a small scale and self-reliance; 4. The nonstop support of life on earth; 5. ongoing standards in the environment and ecosystem; 6. Long-term maintenance of agricultural system productivity and stocks of biological resources.

Even though everyone agrees with the WCED (1987) explanation of sustainability, there are still differing views that define sustainability. sustainability was defined by Barbier (1987) as the systems method, that defines sustainability as the growth of goals across social economic, and environmental, dimensions. First it specifies these three systems as vital to any development progression. This concept was illustrated using a Venn diagram that depicts sustainable development as the junction of the objectives added to the social, economic and environmental dimensions (Barbier, 1987).

Figure 5.

A systematic approach to Sustainability (Barbier & Burgess, 2017)



One crucial thing in this definition is that sustainability cannot be achieved by trying to optimize the objectives of just one system for instance strengthening a social system, social justice, social stability and good governance may still generate unforeseen economic and environmental effects that threaten economic and environmental systems.

The only way to achieve a sustainable development is to strike a harmony across the diverse goals of the three systems. However, each of them has their own set of objectives, and achieving development involves a process of trade-offs between the different objectives of the three dimensions (Barbier & Burgess, 2017).

Resilience, biodiversity, and biological productivity are goals of the environmental system efficiency, equity and reduced poverty are goals of the economic system and lastly social stability, social justice, and good governance are goals of a social system so the main target of sustainability is " to maximize the goals across all three dimensions of these systems via an adaptive process.

It is feasible to generally differentiate among two ways that the pillars have been imagined in the numerous works. The first strategy mimics Barbier (1987) by presenting each dimension as a separate but interconnected system defining the connection between them as sustainable development whereas the second, is Brown et.al. (1987) concept of three separate but linked perspectives (Purvis et al., 2019).

Sustainable Development

For more than 20 years, sustainable development has been the concentration of debate in politics, business, and academia. It seeks to have global development in all three pillars of sustainability: the economic, social and environmental. The initial focus of this three-pillar concept, according to Agenda 21, was on the national level (United Nations, 1992). But it's at the local level as well as cities and neighborhoods where the challenges with applying sustainable development are furthermore frequently seen so decisions made about planning and development at the local level eventually contribute significantly to increasing local sustainability (Zhang et al., 2018).

Social Sustainability

Under this section, different definitions of social sustainability with their respective key themes and features will be explained where providing different definitions can set the stage for a more comprehensive examination of the subject matter.

According to Dempsey et al. (2011) the two fundamental principles for the concept of social sustainability are ‘Social equity’ and ‘sustainability of community’. The ‘Social equity’ concerns are significant political and policy concerns that centered on the concept of social justice while ‘sustainability of community’ concerns is the functioning of residents as a community, health and continued viability which makes it fundamental to have a socially sustainable neighborhood. These two dimensions are not independent of one another it is just to highlight that this is a relevant conceptual distinction.

There are no “Exclusionary” or biased policies that prevent people from participating in society's social, economic and political spheres. Although it has been noted that achieving sustainability requires looking beyond national or regional boundaries, the regional scale is crucial in this case given how the built environment affects us daily. Geographically speaking, social exclusion and injustice can be seen in deprived areas with people having less access to a variety of services and amenities than dwellers of wealthier places. Adequate access to facilities is the key measure of ‘social equity’ and on the other hand, the second theme which is ‘sustainability of community’ relays on the social life collective aspects. Some of the dimensions for the sustainability of a community are also safety and security, partaking in communal groups and networks, pride/sense of place and social interaction (Dempsey et al., 2011).

Colantonio & Dixon (2011) argue that social sustainability refers to how people interact with one another and work toward achieving the aim of the sustainable development they have chosen for themselves. Social sustainability is a result of efforts in important topic areas, embracing the social sphere of people and societies, which includes issues like environmental injustice. Therefore, social sustainability fuses new emerging social sustainability concepts with traditional themes.

The new social sustainability key concepts include 1. Health and Safety; 2. social cohesion; 3. Identity, sense belongingness; 5. Well-being, happiness and quality of life;

6. Empowerment, participation and access; 7. Demographic change and the last one is 8. social capital.

Whereas the traditional social sustainability key themes include education and skill, employment, poverty, social justice, human rights and gender issue, basic need (including housing and environmental health) and lastly equity. From this, we can see that the new emerging soft emerging key themes like social capital of a neighborhood, quality of life are becoming essential concepts for the social aspect of sustainability with the hard traditional themes which focus on equity and basic needs (Colantonio & Dixon, 2011).

Polèse & Stren (2001) defines social sustainability as improvements in the standard of living for all demographic groups where culturally and socially diverse people live together peacefully while promoting social interaction. Polèse & Stren (2001) analyze their research in ten different cities, focusing on six key themes to understand sustainability. These themes are urban land and housing, public service and infrastructure, cultural and social policy, economic revitalization and employment, governance, and transport.

Governance: the term 'Governance' describes how the government and community interact. This theme covers the activity and relationship of different groups that are social and political.

Social and Cultural Policies: As explained governance discusses the interaction amongst the formal government and the civil society and the social and cultural policies cover the characteristics that make these relationships work. These characteristics are features of social capital like trust that can increase social relations.

Social Infrastructure and Public Services: infrastructure and public services are very important for our lives. The proper functioning of hospitals, schools, water, public transport, electricity and telecommunication has an economic effect. The fact is decent services and infrastructure draw in investment, whereas bad services and deteriorating infrastructure cost money.

Urban Land and Housing: The incorporation of groups migrating into urban life, and the preservation of a vibrant local community will all be strongly correlated with the success of this key theme.

Urban Transport and Accessibility: The relative accessibility of different sectors of the population will be impacted by the organization and management of urban transportation which include both public and private facilities.

Creating jobs, reviving the economy, and creating interesting public spaces: employment and economy can be significantly impacted by local decisions so ill-informed rules can significantly affect the exclusion process unintentionally. So in conclusion, it is explained here in ways which local policies may affect social sustainability (Polèse & Stren, 2001).

According to Woodcraft et al. (2011) social sustainability is explained as how people interact with one another and work towards achieving the development goals. In this view, social sustainability has four main elements that are vital in developing new communities. The first one is 'social and cultural life' focusing on the community identity, collective identity, and social structures to encourage local interactions. The second one is 'amenities and social infrastructure' which emphasizes transport, social space, school, and community workers. The third one is 'space to grow' focusing on infrastructure and services that can adjust to over time and flexible planning for future use. The fourth is 'voice and influence' stating governance is needed to represent future inhabitants.

McKenzie (2004) Defined social sustainability as a positive condition or desirable state that can be attained within communities, as well as a method that can help communities achieve that state. The following are indicators for this concept and step toward their operation: First, Equal access to services like transportation, housing, recreational areas, health, and education. Second, the broad political engagement of the population in elections and other political activity. Third, is a mechanism for transferring knowledge of the social aspect of sustainability to the next generation. Fourth, is the sense of belonging in the society. Fifth, mechanism for politicians to address issues that community activity is unable to address. And last a framework for cultural relations that values and protects the positive qualities of different cultures while also encouraging and supporting cultural integration.

Chan & Lee (2008) states when we raise standards of living and reduce social inequality, we can have a socially sustainable neighborhood. They stated six factors that are important to have socially sustainable urban development. The first one is 'Accessibility', the second is 'job availability', the third is 'providing social infrastructure', the fourth is 'Conservation of local characteristics', the fifth 'Townscape design', and sixth 'Ability to fulfill psychological necessities.

Accessibility: The factor of accessibility is crucial to enhancing social sustainability. The residents strive to live and work without going too far. Everyone should have appropriate and adequate access in their everyday lives, regardless of their age or physical condition. It is acknowledged that the right to travel freely from one location to another is an essential human right.

Job availability: The main areas for the social aspect of sustainability is employment. Employment gives people incomes, and the workplace provides a setting for social interaction which are crucial for enhancing citizens' well-being. Additionally, it was discovered that communities with high unemployment rates would have much higher rates of suicide, divorce, alcoholism, poverty, and social exclusion.

Providing social infrastructure: A society must have access to numerous amenities like community centers and sports facilities which provides provide locations for holding various leisure activities and others, like schools and hospitals, provide for the basic needs. open spaces should be provided to encourage social interaction and in addition, special provisions should be accessible for the elderly, disabled, and children.

Conservation of local characteristics: Heritage should be appropriately conserved so that the coming generations can enjoy it and to preserve pre-existing historical structures and features, a community's local traits and existing social network must be preserved.

Townscape design: We will lose the feeling of belongingness among the inhabitants if we practice a poor townscape design so streets that are designed for pedestrians should promote interaction and buildings should be well-designed and visually appealing in terms of layout, height, and color.

Ability to fulfill psychological needs: In every neighborhood security is very important so it is important to give the residents a sense of security. The other thing is residents should be part of the decision-making of the design process to build structures desired by the community. If this is applied the sense of belongingness for the resident can be fulfilled (Chan & Lee, 2008).

And lastly, according to Davoodi et al., (2014) they have 6 principles in the architectural design context the social aspect of sustainability which are: architectural identity, social security, participatory design, social interaction in place, flexibility, and hierarchy.

Social security: Increasing the sense of security in buildings is a criterion for the social sustainability development of architectural design. To increase social sustainability in society, designing must be done in a way that gives users a sense of controllability.

Architectural identity: The sense of architectural identity will be strengthened by designing areas with distinctive architectural styles from their country, if not it will be weakened by imported designs that don't reflect societal norms and values.

Social interaction in place: architects should focus on increasing social interaction in buildings and neighborhoods as an important topic to promote social sustainability because the degree of social interaction between individuals in neighborhoods and buildings can be affected by the sociability of an architectural environment, which leads to socially sustainable development.

Participatory design: Participatory design demonstrates that design work is a social process that is not just the responsibility of the designer. Residents who actively participate in the design process can make a significant contribution to the design process, which promotes sustainability.

Flexibility: Designing should be done in a way that gives buildings a great degree of flexibility and variability. given the rapid advancement of economic and technological systems Flexibility in architectural design can boost a building's potential for conformity, which contributes to the socially sustainable development of society.

Hierarchy: there will be a better sense of social order in a community if we have a functional hierarchy, spatial hierarchy, formal hierarchy, etc. which leads to a more socially sustainable environment. In conclusion, all these principles are interrelated with each other (Davoodi et al., 2014).

Sustainable Neighborhood

Jacob (1961) made it very apparent that a sustainable way of life should naturally result from how sustainable communities are planned since they are good for the environment, the community, and the person as well. Berardi (2013) understood that if we want to study the social aspect of sustainability the smallest scale it should be a neighborhood and while analyzing a community's sustainability, it is crucial to consider how its inhabitants social, environmental, economic, and cultural status link to those levels.

Neighborhood

A neighborhood is a local, place-based group of people that have relationships in which they share information and services across their areas. Even though each person's perspective of a neighborhood may differ greatly in terms of its population density, size, and level of participation, a neighborhood can always be delineated spatially. A neighborhood has a higher degree of spatial quality than a community. This interpretation also indicates that a neighborhood is likely to be related to a locale on a smaller geographic scale when compared to a community (Sun, 2005).

Neighborhood success frequently dictates how well a city or in some cases a country performs and because of this, we need to see it as an essential aspect of a community. The planning process of the neighborhoods must take the social aspect of sustainability into account (Friedman, 2014).

Main Principles of Sustainable Neighborhood

The five principles recommended by the UN-Habitat for planning a sustainable neighborhood are (Falk & Carley, 2012; Teed & Condon, 2013).

1. Satisfactory space for streets and an adequate street network: this principle states the Street must be accessible for pedestrians and cyclists, street hierarchy

needs to be quite connected, it is important to promote public transport and enough parking spot must be provided.

2. High density: this principle states we need to enhance the quality of public open spaces, improving social equity, and encouragement for greater community services.
3. Mixed land-use: this principle states it's important to reduce the reliance on cars and the need for parking.
4. Social mix: this principle states we need to create job opportunities, bring in more services to the area and encourage more social interaction.
5. Limited land-use specialization: these states it is very important to merge compatible functions into a single block and implement a mixed-use zoning (Dehghanmongabadi et al., 2014).

Sustainability Indicators

Indicators

Indicator use has become a common strategy in recent years for the practical implementation in the concept of sustainability. The different indicator sets have been created and used for this purpose by both international and local entities.

According to Merino-Saum et al. (2020) the nature and intent of sustainability indicators can be understood in one of two ways. The first one sees indicators as 'neutral and purely technical instruments' that help countries in the course of making decisions whereas the second one as indicator are 'message carriers'. In this sense, creating an indicator set involves more than just measuring but it also entails a process where sustainability as a concept is emphasized.

Indicators perform many functions. Indicators can be used to measure and assess the improvement toward the goals and targets of sustainable development, indicators can give an early warning to stop social, environmental, and economic setbacks, they are also an effective tool to communicate thoughts values, and ideas. Indicators play a crucial role in assisting nations across the world in making decisions concerning sustainable development. Simplifying and making information available to policymakers' indicators can facilitate better decision-making and more effective action (United Nations, 2007).

Another significant issue with indicator sets is that they are most helpful when created at a local level (Mckenzie, 2004).

Important considerations for using indicators.

Some important considerations according to (European Commission, 2018) are.

1. People from different cultures and locations have different values because of this It is impossible to create indicators without reliable data based on monitoring therefore, indicators must be able to account for various geographic locations, cultural traditions, institutional settings, and population groups.
2. Sets of indicators advanced through time and Indicator sets are rarely, if ever, complete so measuring indicators decreases uncertainty, though it does not eradicate it.
3. When examining how human activities affect the environment, indicators might be crucial (European Commission, 2018).

Social Sustainability Indicators

Littig & Griessler (2005) suggested three categories of indicators to assess the social aspect of sustainability based on the sociological consideration which include social coherence, social justice, and fulfilment of basic needs or having a quality life. The first category is concerned with the fulfillment of basic needs and that living is of a high standard. The indicators list should include income distribution, security, health, unemployment, individual income, poverty, education, and further training, housing conditions, and in addition it must include subjective satisfaction with housing, income, health, work, and the environment. The second set of basic indicators focuses on the idea of social coherence and suggests different examples of measurements like involvement in activities as volunteers, tolerance towards the unemployed, migrants, and social network integration. The third category focused on social justice within the concept of sustainability. We can understand this category in two ways the first concept of social justice which emphasis on the distribution of economic goods, and the broader definition involves participation in society and equal opportunity in terms of living standard. Even though having a sociologically informed social sustainability indicator is one thing, incorporating these

indicators into policymaking is another thing. In addition, focusing on the idea of equity means truly combining the economic and ecological aspects as well. In this way, development in sustainability can only mean development in all scopes. So, for instance it's not enough to merely create jobs these things must also contribute to environmental sustainability. If not, the assertion of ecological, economic, and social sustainability is only rhetoric (Littig & Grießler, 2005).

According to Karji et al. (2017) one of the first steps in analyzing a project's sustainability is to identify a set of indicators that are important to the community and adhere to the principles of sustainable development. One method of identifying these indicators is to go through the current sustainability rating system. The social sustainability indicators used to analyze the mass housing project are classified into four main categories which are: livability, neighborhood features, community and construction and health, risk and safety.

Construction and Community related Indicators: The sets of indicators address how building affects the neighborhood. thirteen indicators for community and construction that have an influence on development during the construction period were compiled by the study.

Health, Risk and Safety related Indicators: Indicators emphasize the health, safety, and risk of the neighborhood with 14 sets of indicators. The key objective of this category is to evaluate how the project would improve local inhabitants' health, by taking safety into account and forecast risks to prevent catastrophic events in the community.

Indicators related to Livability: The sets of indicators emphasize the livability of the neighborhood with 6 indicators. This category's objective is to identify the metrics that improve local inhabitants' quality of life. These indicators mostly assess amenities after construction or during the operational phase.

Neighborhood Characteristics related Indicators: The indicators address the neighborhood characteristics of the neighborhood with 9 indicators. By considering the neighborhood's physical layout, it identifies elements which makes a neighborhood the best place to reside

in. Among the most crucial characteristics in this category is the availability of an easy connection and aesthetic factors in the surrounding area (Karji et al., 2017).

Dijken et al. (2012) developed a toolkit named the ‘Reference Framework for sustainable cities’ to apply sustainability aims of the Leipzig Charter on Sustainable cities in Europe. The indicator set, which covers the economic, environmental and social aspects of sustainability consists sixteen key indicators more than 300 auxiliary indicators. These indicators lay a strong emphasis on sustainable economic growth and governance. These indicator sets are quite flexible so for this reason, we will see the social sustainability indicators.

For this research, six sets of indicators were used. The first one is ‘Housing’ focusing on the percentage of affordable housing and a detailed analysis of the housing market by property type whether it is rental, or owner occupied. The second is ‘Education’ focusing on the number of schools and adult literacy rate. The third is ‘Quality public space’ focusing on the ratio of public parks in relation to population size and the percentage of streets in decent condition. The fourth one is ‘Health’ focusing on the percentage of residents having adequate access to health care services. The fifth is ‘Sanitation’ focusing on the ratio of dwellers who have access to sanitary sewage systems. And the last is a Complete neighborhood/ compact city focusing on access to services for the residents within a short distance (European Commission, 2018).

Social Sustainability and Gender

Social sustainability encompasses different aspects. Gender equality is one of the aspects, which plays an important role that has been greatly undervalued so far. Gender equality is necessary not only for achieving long-term economic growth based on social and environmental development but also for the fulfillment of fundamental rights. Gender issues have been a fundamental aspect of the sustainability discourse since its inception. More recently, Agenda 2030 and its 17 SDGs, adopted by the United Nations General Assembly in September 2016, expressly include gender equality as one of the objectives (Littig, 2018).

CHAPTER III

Methodology

This section explains the methodology applied in this research to analyze the social aspect of sustainability in neighborhoods areas which uses a set of developed indicators in order to progress towards sustainable development understanding the social aspect of sustainability is crucial.

Research Design

The study will use a descriptive type of comparative case study research design based on both quantitative and qualitative methods used to examine two neighborhood areas in Addis Ababa. The research covers the significance of the social aspect in the context of neighborhoods. A detailed literature review analysis is conducted at the beginning of the research process to examine the concept of social sustainability and social sustainability indicators. The sustainability development goals, and related research served as a reference for developing the social sustainability indicators. The main goal of selecting these indicators was based on their compatibility with the case area and then by using these indicators the case area (Bole Gerji and Mikililand neighborhood) was analyzed.

SDG: The Sustainable Development Goals are a list of goal initiatives promoting sustainable development in various fields. There are 17 goals, along with 169 targets and 231 indicators (Berisha et al., 2022). The SDGs went into effect in January 2016 after being formally adopted at the UN meeting in New York. These goals are meant to serve as a framework for member states decision-making over a 15-year timeframe. SDG seeks to eliminate poverty, safeguard the ecology and assure everyone's prosperity (Leal Filho et al., 2018). it was developed to continue the path laid out by the MDG (Millennium development goals). To address the growing challenges towards sustainable development (Pedersen, 2018). SDG includes a wide range of environmental, social and economic issues, like health, education gender equality, poverty and sustainable cities.

For this research the SDG three: well-being and good health, SDG four: quality education, SDG six: sanitation clean and water, SDG seven: clean and affordable energy, SDG eleven: sustainable communities and cities, and SDG sixteen justice, strong institutions and peace with the respective targets found within each goal are used as a guide for creating the social sustainability indicators as shown in the table below.

Social Equity: Social equity is defined as fairness and impartiality for all individuals in a society. In the late twentieth century the idea of “social equity” emerged as the need for government to be a change agent in order to address the power imbalance between the privileged and the underprivileged grew. It is based on a belief that all people are equal and have fundamental rights (Guy & Mccandless, 2012).

Social equity considers systemic inequities to guarantee that everyone in a community has equal access to opportunities. But it does not imply that an equal amount of each service must be offered to each individual because each person’s need to benefit from services varies (Chiu, 2002). The social equity dimension covers access to education, healthcare, public transportation, retail facilities, banks, job opportunities, and affordable housing.

Social Cohesion: Social cohesion is defined as a sense of belonging to a group (Atkinson, 2019) that exists when residents in a community have pleasant relationships, mutual support and believe they are part of the community. It is one of the key elements of the neighborhood’s social sustainability (Cheung & Leung, 2011). Schiefer & van der Noll (2017) identified six main dimensions for social cohesion, and these are 1. quality of life, 2. shared values, 3. (in)equality, 4. Identification, 5. Social relations and 6. orientation towards the common good (Schiefer & van der Noll, 2017).

The social cohesion dimension covers the interaction between the residents in their community, the attachment and pride the residents have to their neighborhood, the participation in social groups like *Iqub* and *Edir*, and the satisfaction they have within their neighborhood.

Safety and Security: Safety and security-related issues have grown to be of great concern to residents, city administrators, and researchers. Despite the multifaceted strategies used to control the situation, crime rates in urban and metropolitan areas have remained alarmingly high. Even though safety and security issues are a global phenomenon, developing countries struggle to control the issue due to declining economic situations, a lack of people and material resources, and low data quality that may guide policies and programs targeted at combating crimes (Samuel et al., 2022).

The safety and security dimension covers if the residents feel safe in the neighborhood during the day and night and the perceived feeling the residents have for the local administration.

Neighborhood Characteristics: Neighborhood characteristic is a combination of different elements that give the neighborhood a unique feature. These components could be green space, transport accessibility, and local amenities. Neighborhood characteristics are also associated with well-being, it's possible that the poorer the neighborhood, the worse the environmental quality, and the lower level of well-being in the neighborhood (Mouratidis, 2020). The neighborhood characteristics dimension covers the connectivity of streets in the neighborhood, accessibility for the disabled, availability of neighborhood for walking and biking, green landscaping and vegetation, aesthetics quality of the neighborhood, and if there is a use of public art.

Health Safety, Risk, and Energy: Health safety, risk and energy is a crucial part of a neighborhood which is a combination of different themes that are essential in neighborhoods sustainability which includes the major services. The Health Safety, Risk, and Energy dimension covers if the neighborhood has access to affordable drinking water, dependable energy service, good waste management system, good air quality, and weather there is traffic congestion, noise, and pollution in the neighborhood.

A visual representation of the methodological process is shown in the diagram below. It shows the step-by-step process of data collection and analysis by providing a comprehensive overview of the methodology.

Figure 6.

Research Framework

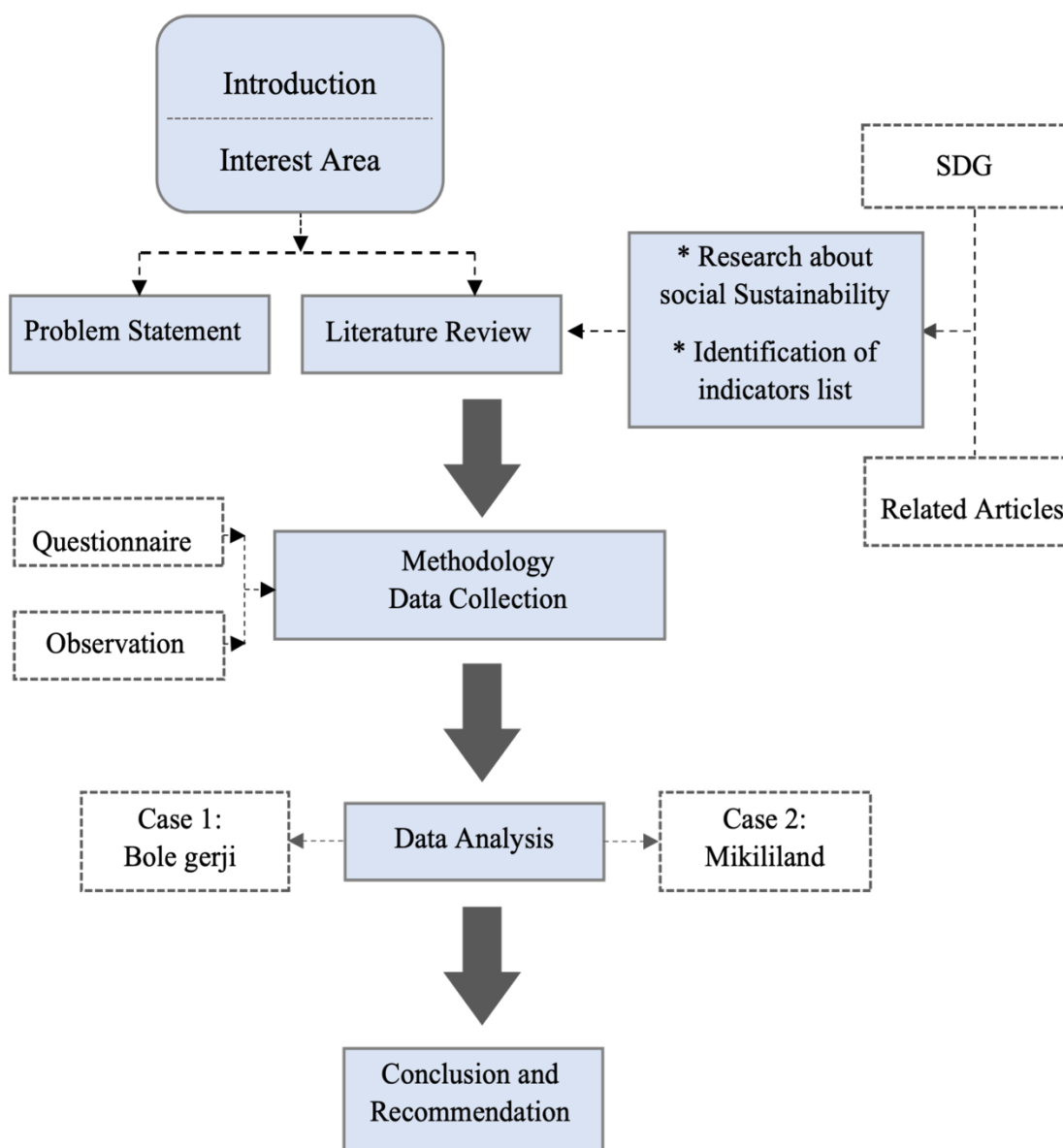


Table 1.

Social Sustainability Indicators

Dimensions and characteristics	SDG and Targets	Description	Indicators
Social Equity	SDG 4 – T 4.2, T 4.3, T 4.5	Access to education	Percentage finding it easy to access educational facilities
	SDG 3 – T 3.8	Access to healthcare	Percentage finding it easy to access healthcare
	SDG 11 – T 11.7	Access to green space and recreational area	Percentage finding it easy to recreational area and green space
	SDG 11 – T 11.2	Access to public transportation	Percentage of people having easy access to public transportation
	SDG 11 – T 11.3	Access to affordable housing	Percentage finding it easy to affordable housing
	SDG 4 – T 4.4	Access to job opportunities	Percentage finding it easy to job opportunities
		Access to retail facilities	Percentage finding it easy to access shops
		Access to banks	Percentage finding it easy to access banks
	SDG 16 – T 16.3	Access to the justice system	Percentage finding it easy to access the justice system
Safety and Security	SDG 16 – T 16.1	Safety felt during the day	Percentage of people feeling safe outside during the day

	SDG 16 – T 16.1	Safety felt during the night	Percentage of people feeling safe outside during the night
	SDG 16 – T 16.5, T 16.6	Perceived feeling about the local administration	The level of public trust in government institutions and officials
Health Safety, risk, & Energy	SDG 6 – T 6.1	Safe and affordable drinking water	Percentage of household having access to drinking water that meets national standards for quality.
	SDG 7 – T 7.1	Affordable, reliable, and modern energy service	Percentage of household having access to uninterrupted electricity.
	SDG 11 – T 11.6	Waste management	Percentage of household having access to waste collection services in a given area or region.
	SDG 11 – T 11.6	Air quality, congestion, noise, and pollution	
Social Cohesion		Attachment and Pride to the neighborhood	Percentage of people who have a sense of belonging to the neighborhood or community
		Interaction within the community	Percentage of people who feel they communicate with in their neighborhood
	SDG 16 – T 16.1	Participation in a collective group (civic activity)	Percentage who feels well-informed about local affairs
		Satisfaction with in-home(stability)	Percentage of people who has trust in their neighbors

Neighborhood characteristics	SDG 11 – T 11.2	high connectivity and Accessibility of streets	Percentage of people who would like to improve current infrastructure
	SDG 11 – T 11.2	Accessibility to the disabled in the neighborhood (universal design)	Percentage of a resident who would like to improve current facilities for less represented groups
		Site availability for walking and biking	Percentage of a resident using the walkway and bike lane
		Green landscaping and vegetation	Percentage of a resident who would like to improve the current green landscaping
		The aesthetic quality of the neighborhood regarding color, form, height, and material	Percentage of a resident who would like to enhance the neighborhoods image
		Use of public art and furniture	Percentage of a resident using public furniture and art

Data Collection Method

The primary data collection method for this research is a questionnaire developed using the selected indicators consisting of 42 questions. The survey questionnaire was designed for the social sustainability aspect of the neighborhood. The questions are derived from the indicators consisting of seven categories. The first category includes 4 questions regarding the demography, the second section has 9 questions about social cohesion. The next 4 sections include social equity, safety and security, health safety and risk, and neighborhood characteristics with 9, 4, 7 and 9 questions respectively. For the last four sections, a five-point Likert scale was used where participants rate each question from 0 to 5 and the secondary data is from a review of related literature review.

Population and Sampling

This study includes two different populations, the Mikililand, and Bole Gerji neighborhood population. Mikililand neighborhood has an area of 254,204 m² with a total distance of 2.04 km. The number of households in this neighborhood is 5100 from this we can estimate the population in that neighborhood to be 20,400 people. Bole Gerji neighborhood has an area of 50,064 m² with a total distance of 1km. The number of households in the neighborhood is 750 from this also we can estimate the population in the neighborhood to be 3000 people. Due to the differences in location and characteristics of each population, different sample sizes were selected for this study.

Sampling Technique

In this research, participants were selected using a simple random sampling technique. It is a probability sampling technique where each individual in the neighborhood area has an equal probability of being chosen for the sample. the use of this sampling method made the statistical analysis of the population have a high level of confidence and minimize the potential for sample bias.

Sample Size Calculation

The sample size calculation was made on a computer-generated sampling method for both the sample size where the confidence level used was 90%, the margin of error was 5%, and the population proportion was 50%. Using this method, the sample size generated for the Mikililand neighborhood was 259 samples and for Bole Gerji was 250. In combination, a sample size of 509 will be collected for this research.

Sampling Procedure

Potential participants were contacted for each sample using an online form and provided detailed information about the research. The participation for this research was entirely voluntary and the recruitment process was ethical and transparent in addition, respondents were informed why the research was conducted and was aware of data confidentiality matter.

Data Analysis Plan

SPSS (statistical package for social science) and Excel spread sheet is used to analyze the data collected from the questionnaire. Descriptive statistics (frequency distribution, correlation test, crosstab analysis and comparative mean analysis) is the method used to analyze and present the information collected.

Ethical Consideration

The study adheres to ethical standards for using the residents of the neighborhoods in the research, including getting informed consent and maintaining respondents' confidentiality and privacy to protect them from harm.

CHAPTER IV

Findings and Discussions

In this section the indicator-based analysis for the two case areas Bole Gerji (Case 1) and Mikililand (Case 2) will be explained in detail. It will provide a comparative analysis of the neighborhood areas highlighting distinct qualities and the shared traits they have.

Demography

The age range distribution of the two case areas spread out through several groups displaying variation reflecting a diverse demography.

Table 2.

Bole Gerji Neighborhood Age Range of Participants

	Frequency	Percent	Valid Percent	Cumulative Percent
18-25	55	22.0	22.0	22.0
26-35	78	31.2	31.2	53.2
36-45	61	24.4	24.4	77.6
46-55	42	16.8	16.8	94.4
56 and above	14	5.6	5.6	100.0
Total	250	100.0	100.0	

Table3.

Mikililand Neighborhood Age Range of Participants

	Frequency	Percent	Valid Percent	Cumulative Percent
18-25	61	23.6	23.6	23.6
26-35	69	26.6	26.6	50.2
36-45	56	21.6	21.6	71.8
46-55	51	19.7	19.7	91.5
56 and above	22	8.5	8.5	100.0
Total	259	100.0	100.0	

Figure 7, 8

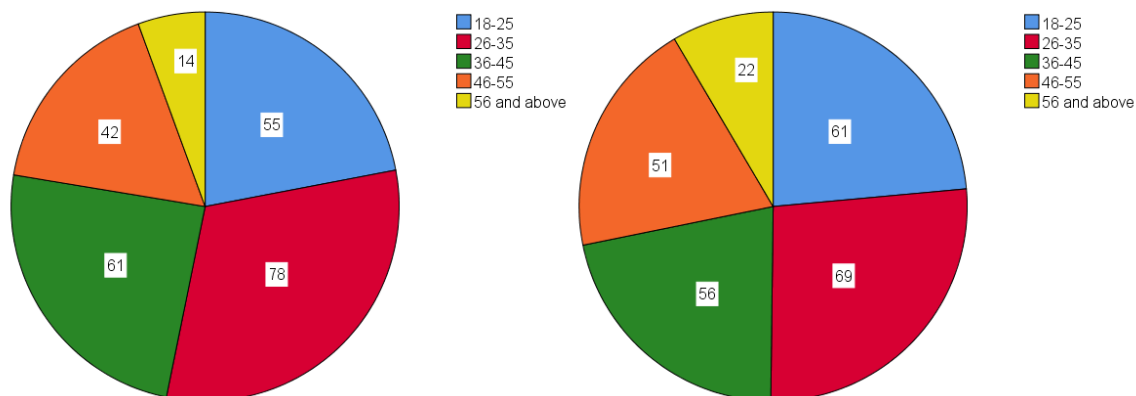
Bole Gerji Neighborhood and Mikililand Neighborhood Age Range of Participants

Table 2 shows that Bole Gerji neighborhood (case 1) where majority participants are within the age range 26-35 with 31.2 % of the sample size constituting 78 participants. The least number of age range participants were 56 and above with 5.6% comprising 14 participants. Whereas table 3 shows the age range for Mikililand neighborhood (case 2) with a relatively balanced spread of age range with the majority being the age from 26-35 with 26.6% and the least is the age range 56 and above constituting 8.5% of the sample size. This show on both case areas a small number of representations from the older age group.

The Following tables and figures show the gender distribution of both case areas.

Table 4.

Bole Gerji Neighborhood Gender Distribution of Participants

	Frequency	Percent	Valid Percent	Cumulative Percent
Female	102	40.8	40.8	40.8
Male	148	59.2	59.2	100.0
Total	250	100.0	100.0	

Table 5.

Mikililand Neighborhood Gender Distribution of Participants

	Frequency	Percent	Valid Percent	Cumulative Percent
Female	124	47.9	47.9	47.9
Male	135	52.1	52.1	100.0
Total	259	100.0	100.0	

Figure 9, 10

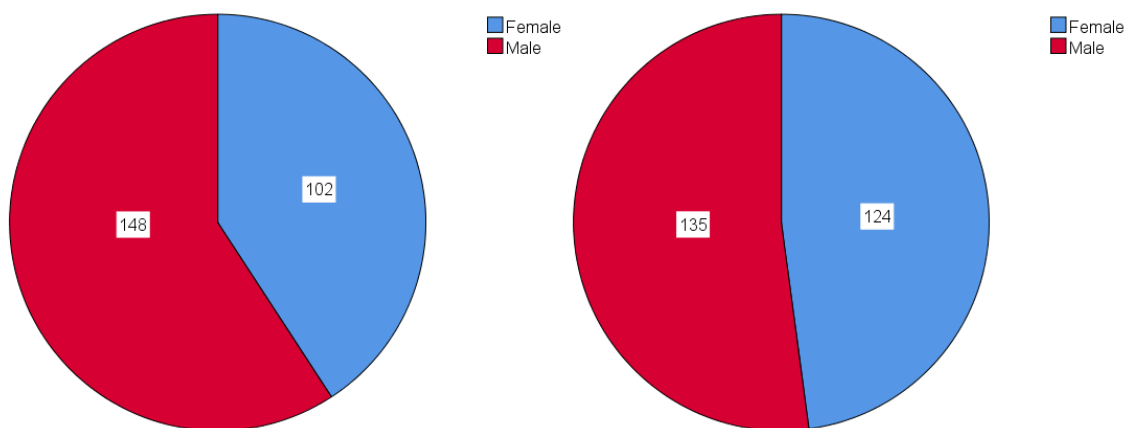
Bole Gerji and Mikililand Neighborhood Gender Distribution of Participants

Table 4 shows that Bole Gerji neighborhood (case 1) where the majority of participants are male participants with 59.2% and females are 40.8%. on the other hand, the gender distribution of the participants was more balanced with Mikililand (case 2) with 52.1% being male and 47.9% being female so for both cases the majority of participant are female.

The Following tables and figures show the education level of participants for the case areas. On case 1 the majority of participant are secondary school students constituting 36.4% with 91 participants and the least is Ph.D. and above with 6.8% with 17 participants. whereas in case 2 the majority of participants are Degree (B. Sc.) holders constituting 33.6% with 87 respondents and the least are none (no education) constituting 6.9% with 18 participants.

Table 6.

Bole Gerji Neighborhood Education Level of Participants

	Frequency	Percent	Valid Percent	Cumulative Percent
Degree (B. Sc.)	85	34.0	34.0	34.0
Masters (M. Sc.)	26	10.4	10.4	44.4
None	31	12.4	12.4	56.8
Ph.D. and above	17	6.8	6.8	63.6
Secondary	91	36.4	36.4	100.0
Total	250	100.0	100.0	

Table 7.

Mikililand Neighborhood Education Level of Participants

	Frequency	Percent	Valid Percent	Cumulative Percent
Degree (B. Sc.)	87	33.6	33.6	33.6
Masters (M. Sc.)	67	25.9	25.9	59.5
None	18	6.9	6.9	66.4
Ph.D. and above	29	11.2	11.2	77.6
Secondary	58	22.4	22.4	100.0
Total	259	100.0	100.0	

Figure 11, 12

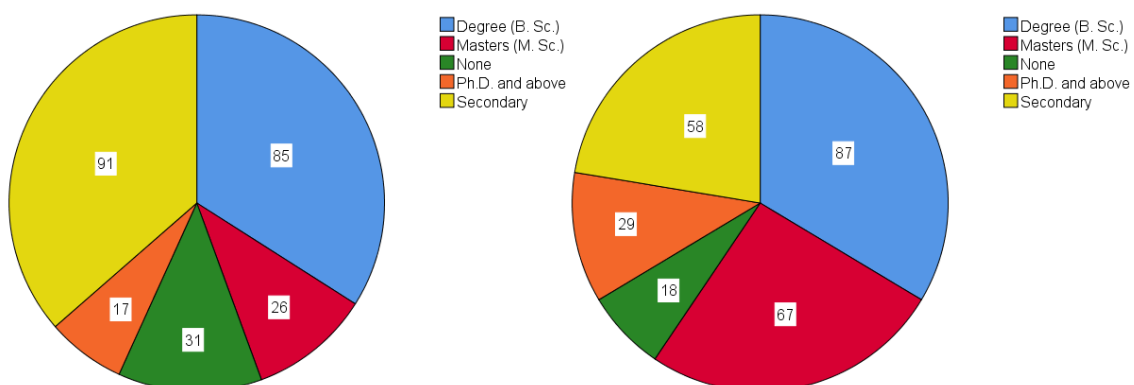
Bole Gerji and Mikililand Neighborhood Education Level of Participants

Table 8 shows the majority of the respondents are employed with 103 responses constituting 41.2% of the sample size followed by unemployed respondents with 26.4% then students with 16.4% and lastly self-employed with 16.0%. table 9 shows the majority of the respondents are also employed with 88 respondents constituting 34.0% of the sample size followed by unemployed respondents with 29.3% then self-employed with 20.5% and lastly students with 16.2%.

From this we can understand for both cases the first majority of respondents were employed, and the second majority were unemployed showing the same pattern for the occupation status but the least respondents for both case areas were different.

Table 8

Bole Gerji Neighborhood Occupation Status of Participants

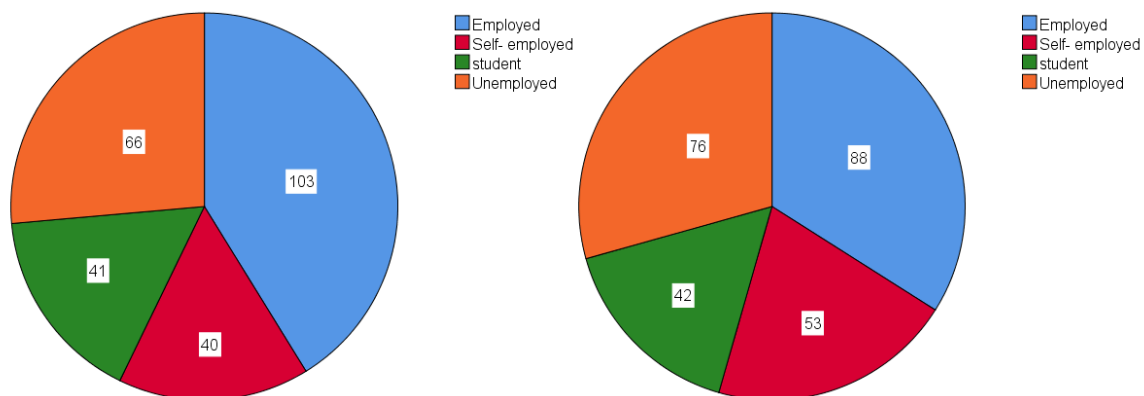
	Frequency	Percent	Valid Percent	Cumulative Percent
Employed	103	41.2	41.2	41.2
Self- employed	40	16.0	16.0	57.2
student	41	16.4	16.4	73.6
Unemployed	66	26.4	26.4	100.0
Total	250	100.0	100.0	

Table 9

Mikililand Neighborhood Occupation Status of Participants

	Frequency	Percent	Valid Percent	Cumulative Percent
Employed	88	34.0	34.0	34.0
Self- employed	53	20.5	20.5	54.4
student	42	16.2	16.2	70.7
Unemployed	76	29.3	29.3	100.0
Total	259	100.0	100.0	

Figure 13, 14

Bole Gerji and Mikililand Neighborhood Occupation Status of Participants

The following tables and figures show the duration of stay to understand for how long the respondents stay in the neighborhoods.

Table 10.

Bole Gerji Neighborhood Duration of Stay of Participants.

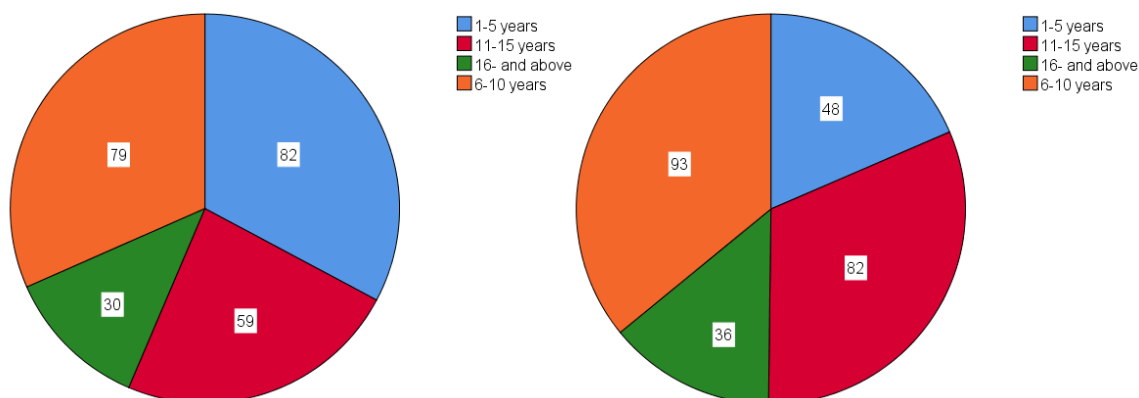
	Frequency	Percent	Valid Percent	Cumulative Percent
1-5 years	82	32.8	32.8	32.8
11-15 years	59	23.6	23.6	56.4
16- and above	30	12.0	12.0	68.4
6-10 years	79	31.6	31.6	100.0
Total	250	100.0	100.0	

Table 11.

Mikililand Neighborhood Duration of Stay of Participants.

	Frequency	Percent	Valid Percent	Cumulative Percent
1-5 years	48	18.5	18.5	18.5
11-15 years	82	31.7	31.7	50.2
16- and above	36	13.9	13.9	64.1
6-10 years	93	35.9	35.9	100.0
Total	259	100.0	100.0	

Figure 15, 16

Bole Gerji and Mikililand Neighborhood Duration of Stay of Participants.

The majority of the respondents shown on Table 10 stayed in the Bole Gerji neighborhood within the range of 1-5 years with 82 responses constituting 32.9% followed by 6-10 years with 79 responses constituting 31.6% then 11-15 years with 59% and the least is 16 and above with 30 responses constituting 12.0%. Table 11 also shows the majority of respondents from Mikililand neighborhood is in the range of 6-10 years with 93 responses constituting 35.9% followed by 11-15 years with 82 responses constituting 31.7%, then 1-5 years with 48 responses constituting 18.5% and the least is 16 and above with 36 responses constituting 13.9%.

Even though the first majority of respondents for case1 and case 2 is different the overall majority of both respondents' duration of stay is from 1 to 15 years.

The Following tables and figures show awareness about social sustainability among the respondents.

Table 12.

Bole Gerji Neighborhood Awareness of Participants About Social Sustainability.

	Frequency	Percent	Valid Percent	Cumulative Percent
No	200	80.0	80.0	80.0
Yes	50	20.0	20.0	100.0
Total	250	100.0	100.0	

Table 13.

Mikililand Neighborhood Awareness of Participants About Social Sustainability.

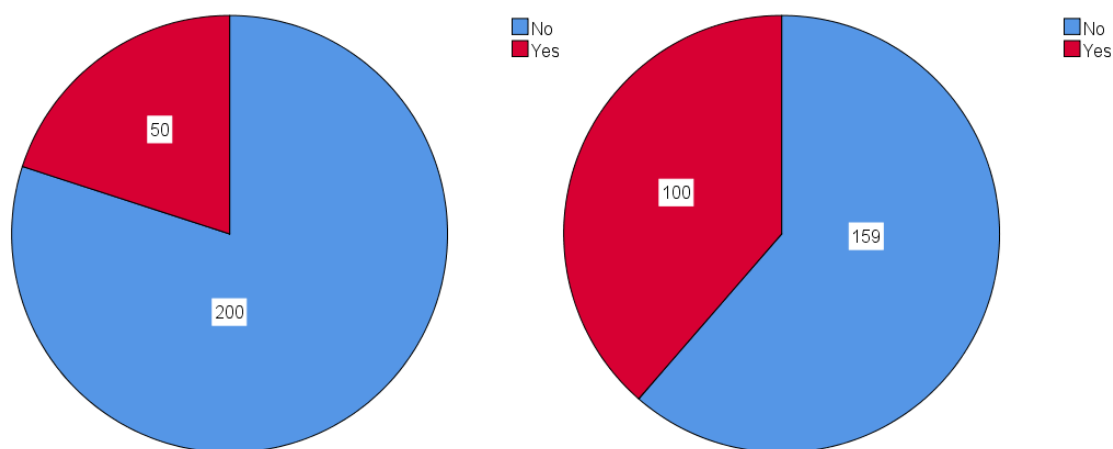
	Frequency	Percent	Valid Percent	Cumulative Percent
No	159	61.4	61.4	61.4
Yes	100	38.6	38.6	100.0
Total	259	100.0	100.0	

Table 12 shows Case 1 in which majority of respondents do not understand what social sustainability is, with 200 respondents replying negatively (representing 80% of the sample size) and 50 respondents (20% of the sample size) responded positively stating they understand the idea of social sustainability. Table 13 shows case 2 with majority of participants also unaware of what social sustainability is with 159 respondents replying negatively which is 61.4% from the sample size and 100 respondents which is 38.6% responded positively stating they are aware of social sustainability.

Awareness about social sustainability has a great significance for a community in the neighborhood so we need to fill the gap by shedding light in this important topic which will benefit to the sustainable development of the neighborhood.

Figure 17, 18

Bole Gerji and Mikililand Neighborhood Awareness of Participants About Social Sustainability.



The Following tables and figures show the sense of belonging among the residents of the two neighborhoods.

Sense of belongingness in a neighborhood is one of the crucial principles for a sustainable neighborhood where residents feel safe, connected. Sense of belongingness promotes social cohesion for a neighborhood increasing quality of life and residents' participation in their community. Majority of respondents in case 1 didn't feel a sense of belonging in their neighborhood with 157 respondents (representing 62.8% of the sample size) and 93 respondents (37.2% of the sample size) responded they felt a sense of belonging. For case 2 with majority of participants accounting 134 respondents (representing 51.7% of the sample size) felt a sense of belonging and nearly half the participant responded negatively with 125 respondents (48.3% of the sample size) not feeling a sense of belonging.

Table 14.

Bole Gerji Neighborhood Sense of Belonging

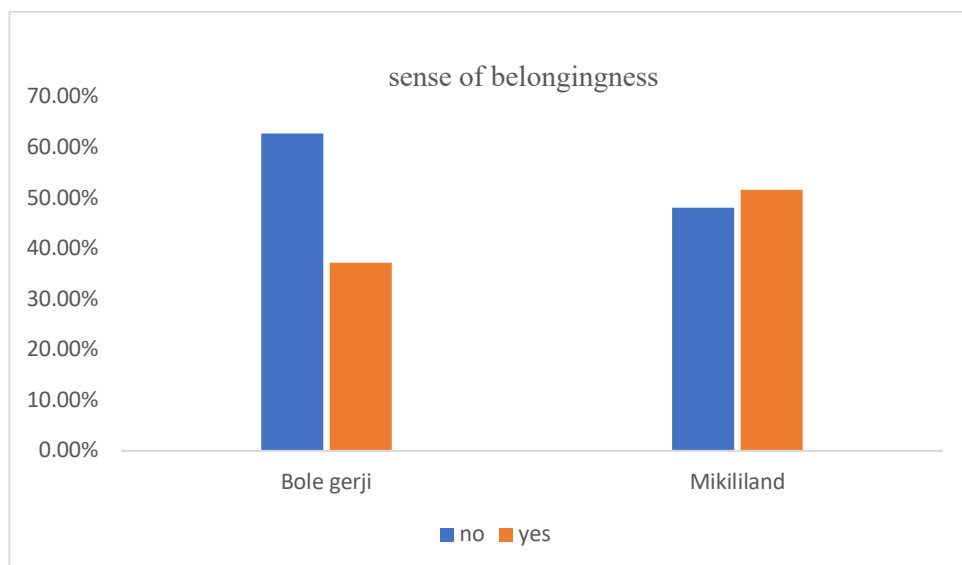
	Frequency	Percent	Valid Percent	Cumulative Percent
No	157	62.8	62.8	62.8
Yes	93	37.2	37.2	100.0
Total	250	100.0	100.0	

Table 15.

Mikililand Neighborhood Sense of belonging

	Frequency	Percent	Valid Percent	Cumulative Percent
No	125	48.3	48.3	48.3
Yes	134	51.7	51.7	100.0
Total	259	100.0	100.0	

Figure 19

Bole Gerji and Mikililand Neighborhood sense of belonging

Comparative analysis of Bole Gerji (case 1) and Mikililand (case 2)

The comparative mean analysis was done to analyze and compare the mean values to understand the similarities and differences of the two neighborhoods using the four key variables: Social Equity (SE), Safety and Security (SS), Health Safety, risk, and Energy (HSE) and Neighborhood characteristics (NC).

Table 16.

Bole Gerji Neighborhood Mean Value of SE, SS, HSE, NC

	N	Minimum	Maximum	Mean	Std. Deviation
SE	250	1.11	5.00	2.8788	.81395
SS	250	1.00	5.00	2.5370	.89643
HSE	250	1.00	5.00	2.3189	.72225
NC	250	1.00	4.78	2.4338	.75286

Table 17.

Mikililand Neighborhood Mean Value of SE, SS, HSE, NC.

	N	Minimum	Maximum	Mean	Std. Deviation
SE	259	1.44	4.89	2.3883	.51199
SS	259	1.00	5.00	2.3031	.57595
HSE	259	1.14	5.00	2.4837	.69903
NC	259	1.11	5.00	2.5852	.74377

First comparative analysis was made using the variables (SE, SS, HSE, NC) to understand which neighborhood functions better compared to the other. The first comparison was made between SEB (social equity of Bole Gerji) and SEM (social equity of Mikililand) in which mean of SEB mean value is greater than mean of SEM which indicates the items on the SE like access to education, health care, job opportunity...etc. are better in Bole

Gerji neighborhood and we can see the mean value of SEB is significantly greater than the value of SEM.

The second comparison was made between SSB (safety and security of Bole Gerji) and SSM (safety and security of Mikililand) where SSB mean value is greater than mean values of SSM which indicates the items on the SS like safety of neighborhood during day and nighttime are better in Bole Gerji neighborhood, but the mean values doesn't show a significant difference compared to the mean value of Mikililand.

The third comparison was made between HSEB (health safety, risk, and energy of Bole Gerji) and HSEM (health safety, risk, and energy of Mikililand) where HSEM mean value is greater than mean values of HSEB which indicates the items on the HSE like quality of drinking water, electricity, waste management system, traffic congestion...etc. are better in Mikililand neighborhood, but the mean values doesn't show a significant difference compared to the mean value of Bole Gerji.

The fourth comparison was made between NCB (Neighborhood characteristics of Bole Gerji) and NCM (Neighborhood characteristics of Mikililand) where NCM mean value is greater than mean values of HSEB which indicates the items on the NC like accessibility and connectivity of roads, accessibility to disabled, green landscape and vegetation, aesthetic quality of neighborhood...etc. are better in Mikililand neighborhood, but in this comparison also the mean values doesn't show a significant difference compared to the mean value of Bole Gerji.

From all this we can understand the neighborhood's SE and SS mean values are higher on Bole Gerji, and the neighborhood's HSE and NC mean values are higher in Mikililand.

Furthermore, it's important to understand that the observed mean values shouldn't be interpreted alone but rather within the context of the study's limitations and the fields existing knowledge. Although the mean difference offers insightful information, they don't fully capture the intricacy of the subject.

Table 18.

Mean comparison of SEB and SEM, mean comparison of SSB and SSM

	SEB	SEM		SSB	SSM
Mean	2.8788	2.3883	Mean	2.5370	2.3031
N	250	259	N	250	259
Std. Deviation	.81395	.51199	Std. Deviation	.89643	.57595

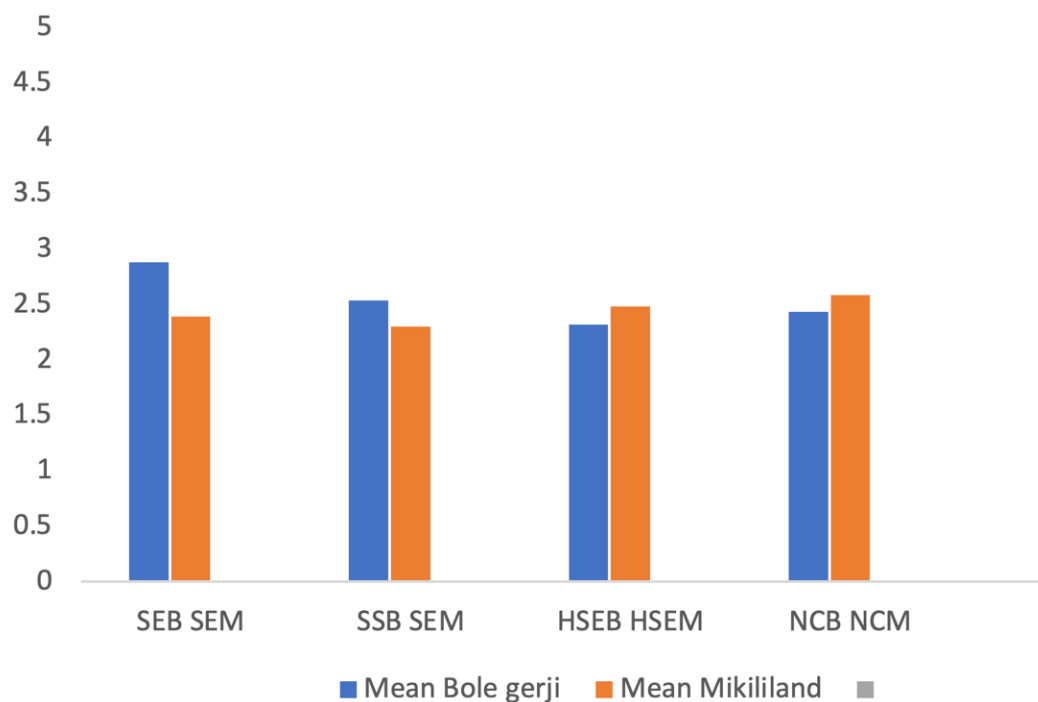
Table 19.

Mean comparison of HSEB and HSEM, mean comparison of NCB and NCM

	HSEB	HSEM		NCB	NCM
Mean	2.3189	2.4837	Mean	2.4338	2.5852
N	250	259	N	250	259
Std. Deviation	.72225	.69903	Std. Deviation	.75286	.74377

Figure 20

Bole Gerji and Mikililand Neighborhood comparative analysis of mean values



Correlation test between SE, SS, HSE, NC

A Correlation test was carried to analyze the relation between the variables (SE, SS, HSE, NC). this analysis set out to quantify the direction and magnitude of the association between the variables in order to gain important understanding of the relationship between them.

Table 20.

Bole Gerji Neighborhood Correlation Test Between SE, SS, HSE, NC

		SE	SS	HSE	NC
SE	Pearson Correlation	1	.747**	.313**	.296**
	Sig. (2-tailed)		.000	.000	.000
	N	250	250	250	250
SS	Pearson Correlation	.747**	1	.300**	.267**
	Sig. (2-tailed)	.000		.000	.000
	N	250	250	250	250
HSE	Pearson Correlation	.313**	.300**	1	.658**
	Sig. (2-tailed)	.000	.000		.000
	N	250	250	250	250
NC	Pearson Correlation	.296**	.267**	.658**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	250	250	250	250

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

Table 21.

Mikililand Neighborhood Correlation Test Between SE, SS, HSE, NC

		SE	SS	HSE	NC
SE	Pearson Correlation	1	.560**	.506**	.533**
	Sig. (2-tailed)		.000	.000	.000
	N	259	259	259	259
SS	Pearson Correlation	.560**	1	.411**	.450**
	Sig. (2-tailed)	.000		.000	.000
	N	259	259	259	259
HSE	Pearson Correlation	.506**	.411**	1	.725**
	Sig. (2-tailed)	.000	.000		.000
	N	259	259	259	259
NC	Pearson Correlation	.533**	.450**	.725**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	259	259	259	259

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

Figure 21.

Bole Gerji Neighborhood Correlation Test Between SE, SS, HSE, NC.

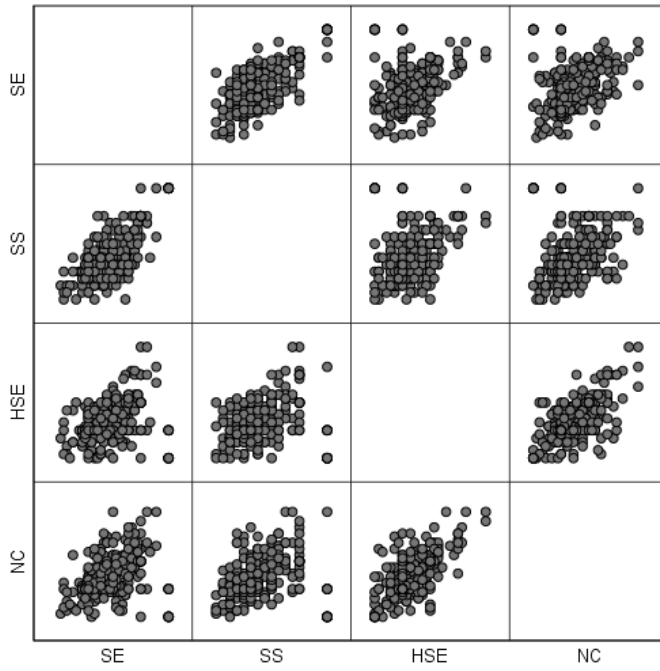
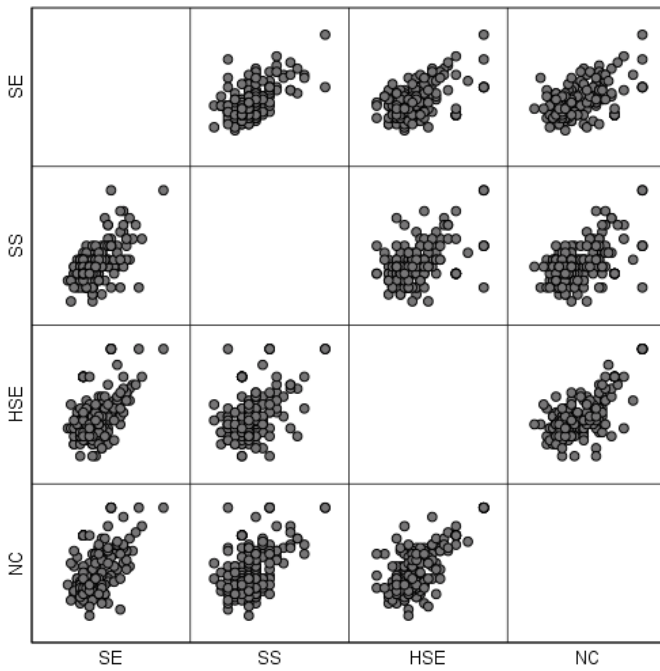


Figure 22.

Mikililand Neighborhood Correlation Test Between SE, SS, HSE, NC.



Variable SE represents the social equity of the neighborhood related to the access the inhabitants have to education, healthcare, public transportation, retail facilities etc. Variable SS represents the safety and security of the neighborhood related to the safety of the inhabitants during the day, night etc. Variable HSE represents the health safety, risk, and energy of the neighborhood which focus on having safe and affordable drinking water, reliable electricity etc. and lastly Variable NC represents the neighborhood characteristics of the neighborhood which describes the accessibility of streets, green landscaping, and aesthetic quality of the neighborhood (see chapter 3 table 1 for detail information on the variables).

For this analysis, the Pearson's correlation coefficient, a tool for examining the linear relation between variables is used. It offers a scale of 1 to -1 with values close to 1 indicates a high positive correlation, value close to -1 indicates a strong negative correlation and value close to 0 indicates little to no connection.

The Correlation coefficient between SE and SS for case 1 is 0.747, which shows a strong positive relation which is statistically significant ($p < 0.05$) which indicates the relationship is unlikely to have occurs due to random chance alone. For case 2 The correlation coefficient between SE and SS is 0.560 which shows a strong positive relation which is statistically significant ($p < 0.05$) also indicating the relationship to unlikely occur due to random chance alone.

The correlation coefficient between SE and HSE for case 1 is 0.313 which shows a moderate positive relation which is statistically significant ($p < 0.05$). The correlation coefficient between SE and HSE for case 2 is 0.506 which shows a strong positive relation which is statistically significant ($p < 0.05$). From this we can see case 2 has a stronger relation whereas case 1 has a moderate relation between the two variables.

The correlation coefficient between SE and NC for case 1 is 0.296 which shows a weak positive relation which is statistically significant ($p < 0.05$). The correlation coefficient between SE and HSE for case 2 is 0.533 which shows a strong positive relation which is statistically significant ($p < 0.05$). From this we can see case 2 has a stronger relation whereas case 1 has a weak relation between the two variables.

The correlation coefficient between SS and HSE for case 1 is 0.300 which shows a moderate positive relation which is statistically significant ($p < 0.05$). The correlation coefficient between SE and HSE for case 2 is 0.411 which shows a moderate positive relation which is statistically significant ($p < 0.05$). From this we can see case 1 and case 2 has both moderate relation between the two variables.

The correlation coefficient between SS and NC for case 1 is 0.267 which shows a weak positive relation which is statistically significant ($p < 0.05$). The correlation coefficient between SE and HSE for case 2 is 0.450 which shows a moderate positive relation which is statistically significant ($p < 0.05$). From this we can understand case 2 has a moderate relation whereas case 1 has a weak relation between the two variables.

The correlation coefficient between HSE and NC for case 1 is 0.658 which shows a strong positive relation which is statistically significant ($p < 0.05$) which indicates the relationship is unlikely to have occurs due to random chance alone. For case 2 The correlation coefficient between HSE and NC is 0.727 which shows a strong positive relation which is statistically significant ($p < 0.05$) also indicating the relationship to unlikely occur due to random chance alone both showing a strong relation between the two variables.

Crosstab Analysis

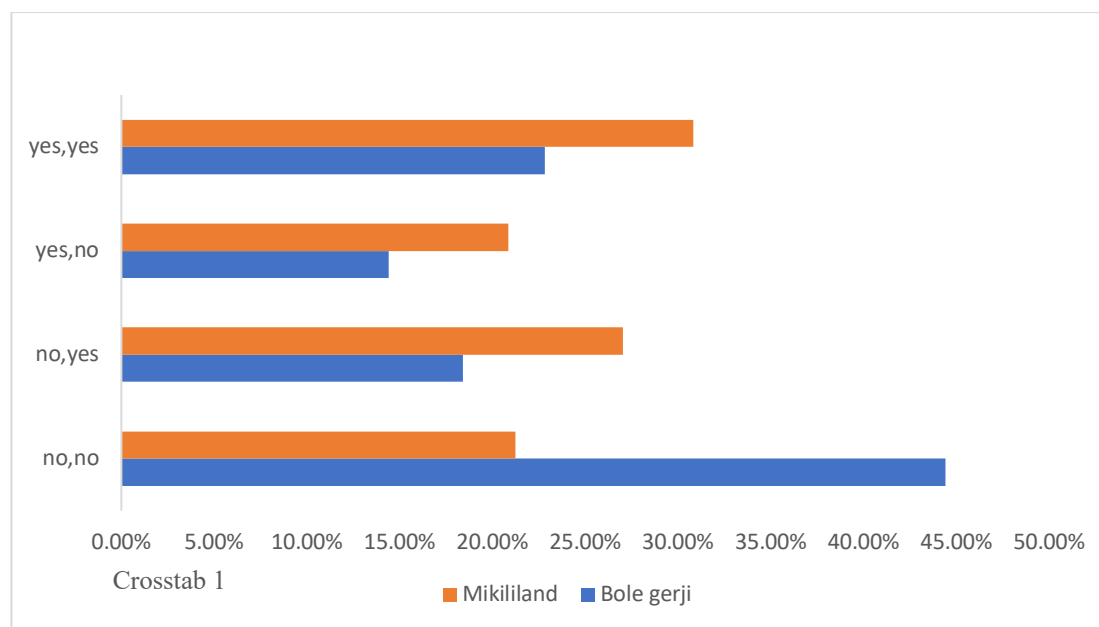
The crosstab analysis will analyze the relationship between the social cohesion questions asked to the residents of Bole Gerji and Mikililand. The analysis will show the association of gender and various categories focusing on the sense of belongingness of the residents.

Table 22.

Bole Gerji and Mikililand crosstab 1

			Are you a member of any social group like <i>Edir</i> or <i>Iqub</i> ?					
			Bole Gerji			Mikililand		
Gender			No	Yes	Total	No	Yes	Total
Female	sense of belonging	No	42	15	57	25	29	54
			73.7%	26.3%	100.0%	46.3%	53.7%	100.0%
		Yes	22	23	45	30	40	70
			48.9%	51.1%	100.0%	42.9%	57.1%	100.0%
	Total	64	38	102	55	69	124	
		62.7%	37.3%	100.0%	44.4%	55.6%	100.0%	
Male	sense of belonging	No	69	31	100	30	41	71
			69.0%	31.0%	100.0%	42.3%	57.7%	100.0%
		Yes	14	34	48	24	40	64
			29.2%	70.8%	100.0%	37.5%	62.5%	100.0%
	Total	83	65	148	54	81	135	
		56.1%	43.9%	100.0%	40.0%	60.0%	100.0%	
Total	sense of belonging	No	111	46	157	55	70	125
			70.7%	29.3%	100.0%	44.0%	56.0%	100.0%
		Yes	36	57	93	54	80	134
			38.7%	61.3%	100.0%	40.3%	59.7%	100.0%
	Total	147	103	250	109	150	259	
		58.8%	41.2%	100.0%	42.1%	57.9%	100.0%	

Figure 23.

Crosstab Analysis 1

Before going deep into the analysis let's discuss what *Iqub* and *Edir* means. *Iqub* refers to a traditional saving and credit association where a group of people who regularly meet come together and pool their money on a rotating basis once a week or once a month. Each participant pays a set of amounts and one participant out of the group is picked to receive the entire pooled sum at the end of each cycle up until everyone has received their fair portion. In Ethiopia *Iqub* is used for saving money acting as an informal banking system. Participating in this is seen as social connection within the society.

Edir in Ethiopia is the term used for a traditional funeral and burial association. It is a community-based association which supports its members financially and emotionally through difficult times when a family member dies. To be a member of the *Edir* one must regularly pay a certain amount of money in order to build up funds to support the burial and other expenses when necessary. The *Edir* provides financial aid to the members in times of need. In addition to the financial side, it also has a significant social purpose.

The crosstabulation of gender, sense of belonging, and membership in any social groups, such as *Edir* or *Iqub*, is shown in Table 22 which are used to analyze the social cohesion

aspect of social sustainability. For case 1(Bole Gerji) Out of all the participants, there are 42 female respondents who did not feel a sense of belonging in their community and are not part of any social group, making up 16.8%. The male respondents, make up 27.6% with 69 respondents. There were 111 responders in all constituting 44.4% of the sample.

Out of all respondents 46 respondents with 18.4% did not feel a sense of belonging in their community but are part of a social group like *Edir* or *Iqub* where 15 are female with 6% and 31 are male with 12.4%.

The number of respondents who felt a sense of belonging and are not part of a social group is 36 constituting 14.4%. out of all respondents 22 are female constituting 8.8% and 14 are male with 5.6%.

The percentage of respondents with a sense of belonging and are part of a social group is 22.8% with 57 respondents, of all the respondents 23 are female constituting 9.2% and 34 are male with 13.6%

From this we can understand the majority of the respondents in case 1 do not feel a sense of belonging in their neighborhood and are not part of any social group in their neighborhood.

For case 2 (Mikililand) Out of all the participants, there are 25 female respondents who did not feel a sense of belonging in their community and are not part of any social group, making up 9.65%. The male respondents, make up 11.58% with 30 respondents. There were 55 responders in all constituting 21.23% of the sample.

Out of all respondents 70 respondents with 27.02% did not feel a sense of belonging in their community but are part of a social group like *Edir* or *Iqub* where 29 are female with 11.19% and 41 are male with 15.83%.

The number of respondents who felt a sense of belonging and are not part of a social group is 54 constituting 20.84%. out of all respondents 30 are female constituting 11.58% and 24 are male with 9.26%.

The percentage of respondents with a sense of belonging and are part of a social group is 30.8% with 80 respondents, of all the respondents 40 are female constituting 15.4% and 40 are male with 15.5%.

From this we can understand the majority of the respondents in case 2 feel a sense of belonging in their neighborhood and are also part of a social group in their neighborhood.

The Following table and figure show if the residents of the two neighborhoods are part of a social group. Being a part of a social group, such as *Edir* and *Iqub*, is an important aspect of a community in Ethiopia since it enhances the relationships that inhabitants have with one another and serves as one sign of social sustainability.

Majority of respondents in case 1 are not part of a social group in their neighborhood with 147 respondents (representing 58.8% of the sample size) and 103 respondents (41.2% of the sample size) responded they are part of a social group.

For case 2 with majority of participants accounting 150 respondents (representing 57.9% of the sample size) responded they are part of a social group, and 125 respondents (48.3% of the sample size) are not part of a social group in their neighborhood.

Table 23.

Bole Gerji and Mikililand Neighborhood member of a social group

Are you a member of any social group like *Edir* or *Iqub*?

	Bole Gerji		Mikililand	
	Frequency	Percent	Frequency	Percent
No	147	58.8	109	42.1
Yes	103	41.2	150	57.9
total	250	100.0	259	100.0

Figure 24.

Bole Gerji and Mikililand Neighborhood member of a social group

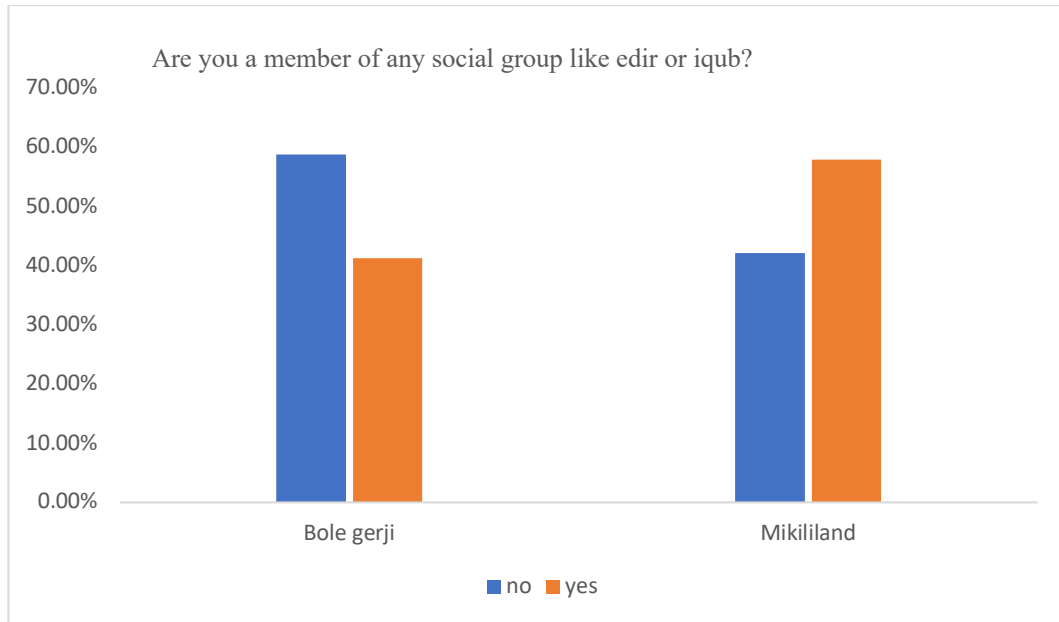


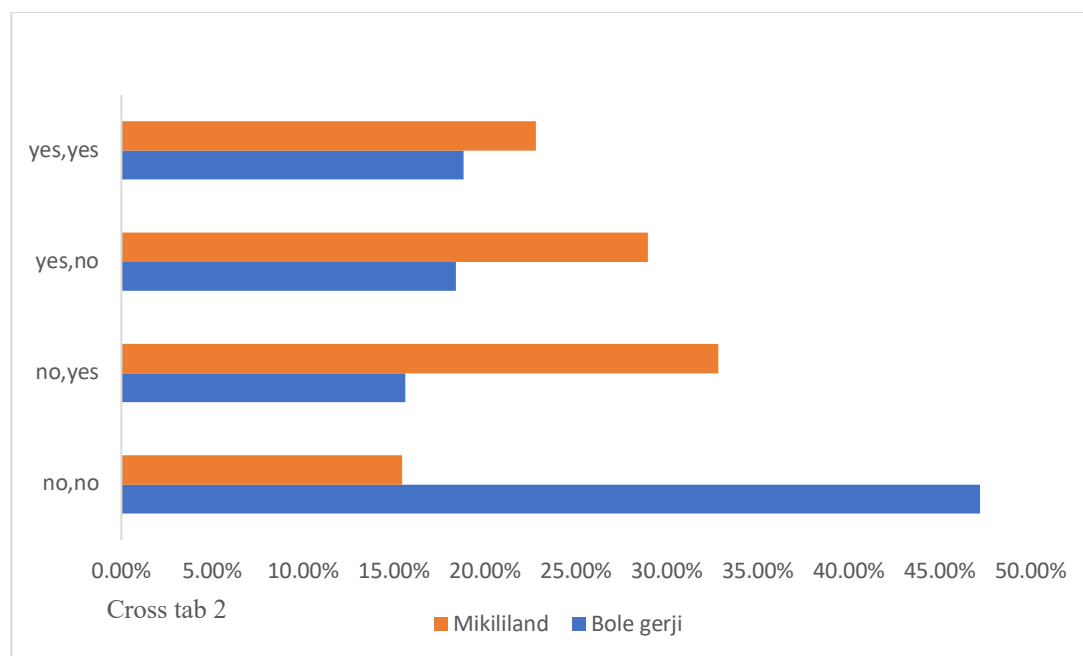
Table 24.

Bole Gerji and Mikililand crosstab 2

			Have you ever felt excluded from a social group because of your race gender or ethnicity?					
			Bole Gerji			Mikililand		
Gender			No	Yes	Total	No	Yes	Total
Female	sense of belonging	No	38	19	57	19	35	54
			66.7%	33.3%	100.0%	35.2%	64.8%	100.0%
		Yes	22	23	45	39	31	70
			48.9%	51.1%	100.0%	55.7%	44.3%	100.0%
	Total		60	42	102	58	66	124
			58.8%	41.2%	100.0%	46.8%	53.2%	100.0%
Male	sense of belonging	No	80	20	100	21	50	71
			80.0%	20.0%	100.0%	29.6%	70.4%	100.0%
		Yes	24	24	48	36	28	64
			50.0%	50.0%	100.0%	56.3%	43.8%	100.0%
	Total		104	44	148	57	78	135
			70.3%	29.7%	100.0%	42.2%	57.8%	100.0%
Total	sense of belonging	No	118	39	157	40	85	125
			75.2%	24.8%	100.0%	32.0%	68.0%	100.0%
		Yes	46	47	93	75	59	134
			49.5%	50.5%	100.0%	56.0%	44.0%	100.0%
	Total		164	86	250	115	144	259
			65.6%	34.4%	100.0%	44.4%	55.6%	100.0%

The crosstabulation of gender, sense of belonging, and if the residents felt excluded from a social group because of their race gender or ethnicity, is shown in Table 23 which are used to analyze the social cohesion aspect of social sustainability.

Figure 25.

Crosstab Analysis 2

For case 1(Bole Gerji) Out of all the participants, 38 female respondents which is 15.2% and 80 male respondents make up 32% did not experience a sense of belonging and didn't feel excluded from a social group because of their race, gender or ethnicity. There were 118 responders in all constituting 47.2% of the sample.

Out of all respondents 39 respondents with 15.6% do not feel a sense of belonging in their community and felt excluded from a social group where 19 are female with 7.6% and 20 are male with 8%.

The number of respondents who felt a sense of belonging and didn't feel excluded from a social group is 46 constituting 18.4%. out of all respondents 22 are female constituting 8.8% and 24 are male with 9.6%.

The percentage of respondents with a sense of belonging and felt excluded from a social group is 18.8% with 47 respondents, of all the respondents 23 are female constituting 9.2% and 24 are male with 9.6%.

From this we can understand the majority of the respondents in case 1 do not feel a sense of belonging in their neighborhood and didn't feel excluded from a social group because of their race, gender or ethnicity.

For case 2 (Mikililand) Out of all the participants, there are 19 female respondents who do not experience a sense of belonging in their community and didn't feel excluded from a social group, making up 7.33%. The male respondents, make up 8.10% with 21 respondents. There were 40 responders in all constituting 15.44% of the sample.

Out of all respondents 85 respondents with 32.81% do not feel a sense of belonging in their community and felt excluded from a social group where 35 are female with 13.51% and 50 are male with 19.3%.

The number of respondents who felt a sense of belonging and didn't feel excluded from a social group is 75 constituting 28.95%. out of all respondents 39 are female constituting 15.05% and 36 are male with 13.9%.

The percentage of respondents with a sense of belonging and felt excluded from a social group is 22.77% with 59 respondents, of all the respondents 31 are female constituting 11.96% and 28 are male with 10.82%.

From this we can understand the majority of the respondents in case 2 do not feel a sense of belonging in their community and felt excluded from a social group

The Following table and figure show if the residents of the two neighborhoods felt excluded from a social group because of their race, ethnicity or gender.

Majority of respondents in case 1 didn't felt excluded from a social group in their neighborhood with 164 respondents (representing 65.6% of the sample size) and 86 respondents (34.4% of the sample size) responded they felt excluded from a social group.

For case 2 with majority of participants accounting 144 respondents (representing 55.6% of the sample size) responded they felt excluded from a social group, and 115 respondents (44.4% of the sample size) didn't feel excluded from a social group in their neighborhood.

Table 25.

Bole Gerji and Mikililand Neighborhood felt excluded from a social group.

Ever felt excluded from a social group because of your race, gender or ethnicity?

	Bole Gerji		Mikililand	
	Frequency	Percent	Frequency	Percent
No	164	65.6	115	44.4
Yes	86	34.4	144	55.6
total	250	100.0	259	100.0

Figure 26.

Bole Gerji and Mikililand Neighborhood felt excluded from a social group.

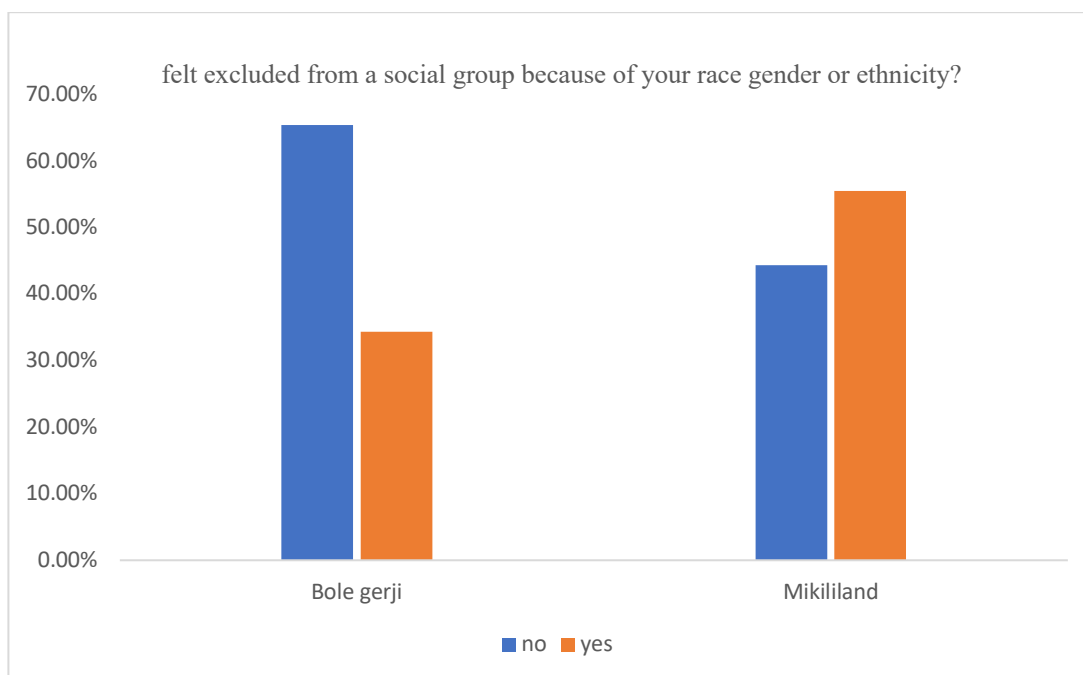


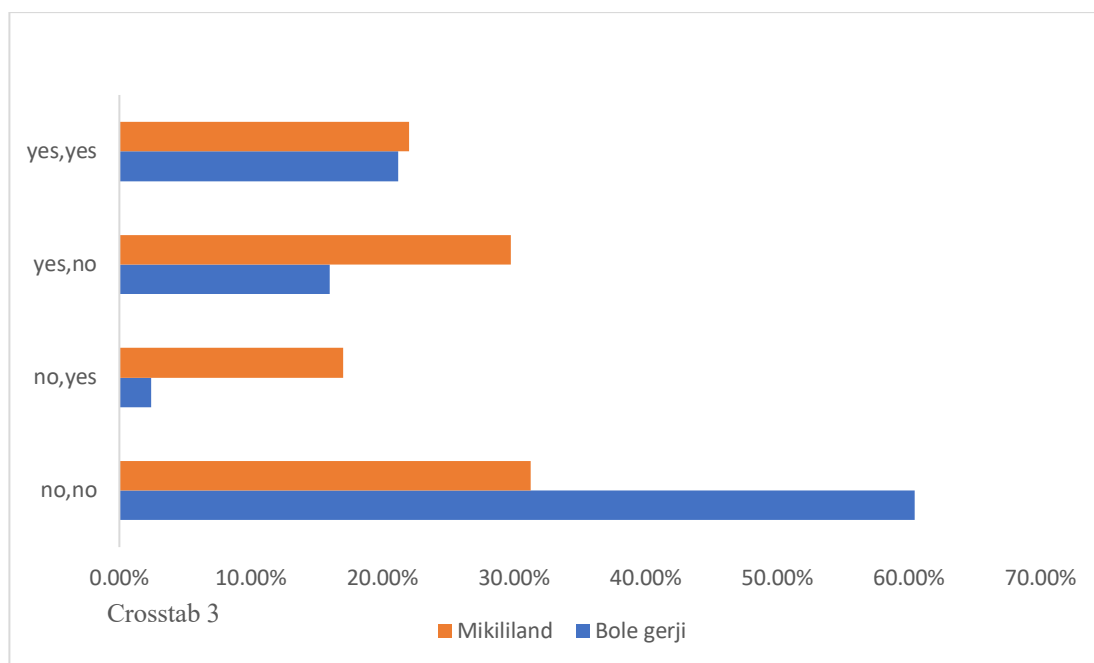
Table 26.

Bole Gerji and Mikililand crosstab 3

			Have you ever attended any meeting regarding the construction, renovation, or maintenance of buildings?					
			Bole Gerji			Mikililand		
Gender			No	Yes	Total	No	Yes	Total
Female	sense of belonging	No	55	2	57	34	20	54
			96.5%	3.5%	100.0%	63.0%	37.0%	100.0%
		Yes	21	24	45	35	35	70
			46.7%	53.3%	100.0%	50.0%	50.0%	100.0%
	Total		76	26	102	69	55	124
			74.5%	25.5%	100.0%	55.6%	44.4%	100.0%
Male	sense of belonging	No	96	4	100	47	24	71
			96.0%	4.0%	100.0%	66.2%	33.8%	100.0%
		Yes	19	29	48	42	22	64
			39.6%	60.4%	100.0%	65.6%	34.4%	100.0%
	Total		115	33	148	89	46	135
			77.7%	22.3%	100.0%	65.9%	34.1%	100.0%
Total	sense of belonging	No	151	6	157	81	44	125
			96.2%	3.8%	100.0%	64.8%	35.2%	100.0%
		Yes	40	53	93	77	57	134
			43.0%	57.0%	100.0%	57.5%	42.5%	100.0%
	Total		191	59	250	158	101	259
			76.4%	23.6%	100.0%	61.0%	39.0%	100.0%

The crosstabulation of gender, sense of belonging, and if the residents attended any meeting regarding construction, renovation, or maintenance, is shown in Table 24 which are used to analyze the social cohesion aspect of social sustainability.

Figure 27.

Crosstab Analysis 3

For case 1(Bole Gerji) Out of all the participants, 55 female respondents which is 22% and 96 male respondents make up 38.4% did not experience a sense of belonging and didn't attend any meeting regarding the construction, renovation, or maintenance of buildings in their neighborhood. There were 151 responders in all constituting 60.6% of the sample.

Out of all respondents 6 respondents with 2.4% do not feel a sense of belonging in their community but attend meeting where 2 are female with 0.8% and 4 are male with 1.6%.

The number of respondents who felt a sense of belonging but didn't attend any meeting is 40 constituting 16%. out of all respondents 21 are female constituting 8.4% and 19 are male with 7.6%.

The percentage of respondents who felt a sense of belonging and attend meeting is 21.2% with 53 respondents, of all the respondents 24 are female constituting 9.6% and 29 are male with 11.6%. From this we can understand the majority of the respondents in case 1

did not experience a sense of belonging and didn't attend any meeting regarding the construction, renovation or maintenance of buildings in their neighborhood.

For case 2 (Mikililand) Out of all the participants, there are 34 female respondents who do not experience a sense of belonging in their community and didn't attend any meeting regarding the construction, renovation, or maintenance of buildings in their neighborhood, making up 13.12%. The male respondents, make up 18.14% with 47 respondents. There were 81 responders in all constituting 31.27% of the sample.

Out of all respondents 44 respondents with 16.98% do not feel a sense of belonging in their community but attend meeting where 20 are female with 7.72% and 24 are male with 9.26%.

The number of respondents who felt a sense of belonging but didn't attend any meeting is 77 constituting 29.72%. out of all respondents 35 are female constituting 13.51% and 42 are male with 16.21%.

The percentage of respondents who felt a sense of belonging and attend meeting is 22% with 57 respondents, of all the respondents 35 are female constituting 13.51% and 22 are male with 8.5%.

From this we can understand the majority of the respondents in case 2 do not experience a sense of belonging in their community and didn't attend any meeting regarding the construction, renovation or maintenance of buildings in their neighborhood.

The Following table and figure show if the residents have ever attended any meeting regarding the construction, renovation or maintenance of building in your neighborhood?

Majority of respondents in case 1 didn't attended any meeting regarding the construction, renovation or maintenance of building in their neighborhood with 191 respondent (representing 76.4% of the sample size) and 59 respondents (23.6% of the sample size) responded they have attended the meeting.

For case 2 also the majority of participants didn't attend any meeting regarding the construction, renovation or maintenance of building in their neighborhood accounting 158

respondents (representing 61% of the sample size) and 101 respondents (39% of the sample size) responded they have attended the meeting.

Table 27.

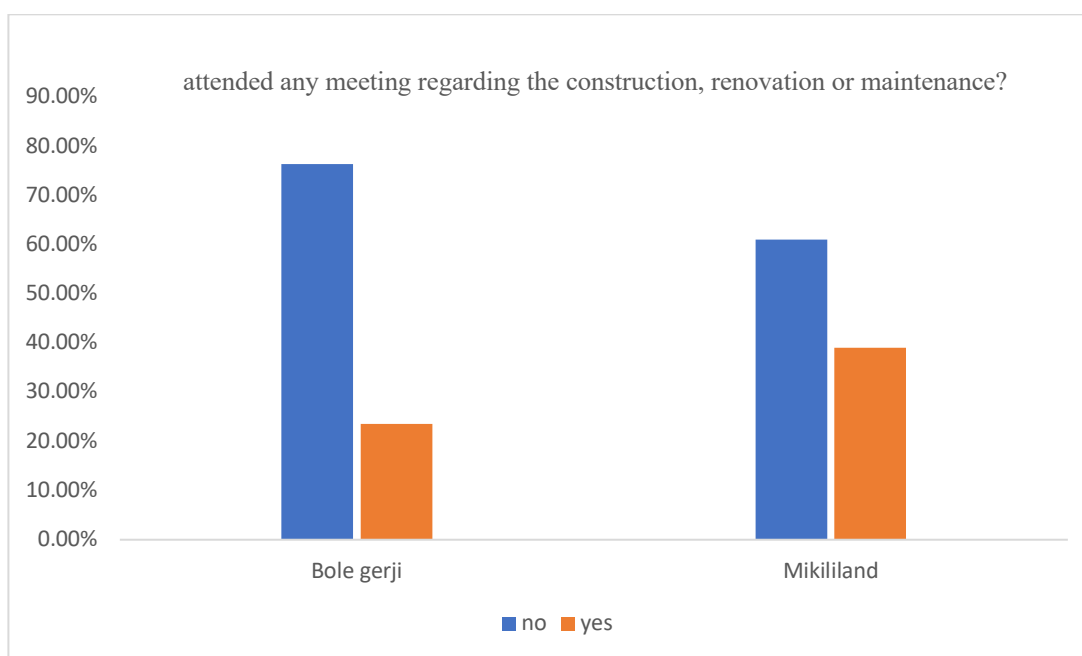
Bole Gerji and Mikililand Neighborhood attended meeting regarding construction, renovation, or maintenance of building.

ever attended any meeting regarding the construction, renovation, or maintenance of building in your neighborhood?

	Bole Gerji		Mikililand	
	Frequency	Percent	Frequency	Percent
No	191	76.4	158	61.0
Yes	59	23.6	101	39.0
total	250	100.0	259	100.0

Figure 28.

Bole Gerji and Mikililand Neighborhood attended meeting regarding construction, renovation, or maintenance of building.



Summary of Findings

Both Case 1 and Case 2 have 80% and 61.4% of the resident has no awareness about social sustainability respectively so raising awareness is important to have a positive change in sustainable development

The findings indicate a significant relationship between the two cases when we see the total number of male and female participants asked if they have a sense of belongingness. In the first case, the majority did not feel a sense of belongingness in their neighborhood, and in case 2, even though the majority did, nearly half did not felt the sense of belonging.

The findings in this comparative analysis of mean for case 1 and case 2 reveal a pattern of similarities and differences between the compared groups. The similarities are between the values of SE and SS of Bole Gerji and HSE and NC of Mikililand whereas the differences are the mean values between SEB and SEM being significantly different compared to the other mean values.

The correlation test between all the variables shows a positive relationship which is significant. This finding provides valuable insights into the association between the variables which has the implication for policy making and improvement of the neighborhood.

The crosstab analysis done between sense of belongingness and if the residents are a member of any social group like *Edir* or *Iqub* shows the difference between the two neighborhoods where majority of the inhabitants in case 1 did not feel a sense of belongingness and are not part of any social group whereas on case 2 the majority of the respondent felt a sense of belongingness and are part of a social group.

The crosstab analysis done between sense of belongingness and if the residents felt excluded from a social group because of their ethnicity, race or gender shows most respondents in Cases 1 and case 2 lack a sense of belongingness, however Case 1 respondents did not feel excluded from a social group, whereas Case 2 respondents felt excluded from a social group in their neighborhood.

The crosstab analysis done between sense of belongingness and if the residents ever attended any meeting regarding the construction, renovation or maintenance of buildings shows most respondents in both Cases 1 and case 2 lack a sense of belongingness, and didn't attend any meeting regarding the construction, renovation or maintenance of buildings in their neighborhood.

The findings show a significant relationship between the two cases when we look at the total number of male and female participants who were asked if they were part of a social group such as *Edir* and *Iqub* and if felt excluded from a social group because of their ethnicity, race or gender that on both questions case 1 majority are not part of a social group and did not feel excluded and case 2 majority are a member of a social group but felt excluded.

The last finding for this research is when resident in both neighborhoods asked if they ever attended any meeting regarding construction, renovation or maintenance of the buildings in their neighborhood on both cases the majority did not attend.

CHAPTER V

Conclusion and Recommendation

Conclusion

Sustainability as we know is providing the needs of this generation without compromising the needs of future generation taking in to account all the 3 aspects of sustainability which are economic, social and environmental. Sustainability is very important in solving current global issues like climate change, social injustice, environmental degradation, and homelessness by promoting social equity, social cohesion, protecting the environment and ensuring economic viability. For this research, the main focus is set on the social aspect of social sustainability, which is important to create equitable society where everyone has adequate access to all services, infrastructure, resources, and justice system. The study is also concerned in addressing the social challenges and focuses on encouraging social justice wellbeing and livability in a community.

This research has explored sustainability and its significance on sustainable development of neighborhood areas through an in-depth analysis of social sustainability according to many scholars, which is provided in the literature review section, along with an explanation of the key themes and principles which will serve as a valuable resource in understanding the subject matter. In addition, not only was a clear and concise description of sustainability indicators provided, but a set of indicators was also constructed and utilized from different resources and SDG goals, like social equity, safety and security, neighborhood characteristics , social cohesion and health safety, risk, and energy, to analyze the two case areas in the neighborhood, which helped in gaining valuable insight in social sustainability and its importance in knowing the challenged Addis Ababa neighborhoods are facing today and our community in general.

Descriptive methodology is used for this research which facilitate the collection of data and ensure the reliability of findings. To analyze the gathered data using the indicators presented in Table 1. Comparative mean analysis, correlation analysis, crosstab analysis was used. The information was gathered through a questionnaire and by reviewing multiple literature on the topic. As a result, the two cases Bole Gerji and Mikililand

neighborhood was analyzed and showcased the importance of social sustainability for the community.

Based on the analysis made in this research, majority of the residents lack awareness of social sustainability in both neighborhoods which makes it difficult to have a sustainable development. Realizing the social aspect is just as important as realizing the economic and environmental aspect to have a sustainable development. The research helps in making the awareness that is necessary to the neighborhood area, and further studies need to be done on the relevant issue of socially sustainable neighborhood.

It became clear that a huge majority of respondents lacked a "sense of belonging" in their neighborhood, which is crucial element for improving social sustainability in a community. In addition to this the lack of residents not attending meetings regarding their neighborhood, not being a member of social groups, etc. has a significant challenge to have sustainable development. We can also use the information obtained from the comparative mean analysis and correlation test between the two neighborhoods to our advantage in order to achieve social sustainability.

Lastly, this research addressed all the important objectives and research questions, resulting in a complete and insightful analysis. By accomplishing this goal, this research will serve as a valuable resource for researchers.

Recommendation

The city of Addis Ababa has a potential for a sustainable development which can bring a major change for the country and the whole of Africa. To fully realize the vision a collective effort and dedication of all-stake holders including residents of the neighborhood, governmental bodies, and community organizers is needed to work together in pursuit of having a socially sustainable communities in the country. By undertaking the necessary work of having a socially equitable, socially cohesive, safe and secure neighborhoods we can create a harmonious environment for all the inhabitants.

Based on the analysis done on this research, a set of key recommendation have been identified that shed light on different aspect of the study accordingly.

- Lack of awareness in social sustainability among the residents of the neighborhood is observed highlighting the need to shift our focus to this critical aspect. The responsible stakeholder should prioritize efforts to raise awareness and allocate resources towards the implementation of social sustainability.
- The analysis conducted through the correlation test among the indicators reveal a positive significant relationship among the variables showing interconnectedness between them. By understanding this relationship, we can use it to our advantage by focusing and strategically targeting one variable we can have improvements on the other variables and by doing this we can improve the social sustainability aspect of the community.

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APPENDICES

APPENDIX 1

QUESTIONNAIRE

ANALYSIS OF SOCIAL SUSTAINABILITY FOR NEIGHBORHOOD AREA: CASE STUDY ADDIS ABABA ETHIOPIA

Dear Participants, I am conducting research for my master's thesis and your participation in this questionnaire is highly valuable. This research aims to study and explore the different dimensions of sustainability and analyze the social aspect of sustainability in the neighborhood using different indicators. Your responses will be only used for this academic research and your confidentiality will be maintained throughout the process. I kindly ask you to assist in providing the required information for the following question. for any questions, I am available via 20203773@neu.edu.tr.

Thank you for taking the time to complete this questionnaire. Your contribution is highly appreciated.

SECTION A: DEMOGRAPHY/ GENERAL INFORMATION

1. Age range
 - a. 18-25
 - b. 26-35
 - c. 36-45
 - d. 46-55
 - e. 56 and above
2. Gender
 - a. Male
 - b. Female
3. Education level
 - a. Secondary
 - b. Degree (B. Sc.)
 - c. Masters (M. Sc.)
 - d. Ph.D. and above
 - e. None
4. Occupation status
 - a. Employed
 - b. Unemployed
 - c. Self-employed
 - d. Student

SECTION B: SOCIAL COHESION

5. Do you live in _____ neighborhoods?
 - a. Mikililand []
 - b. Lideta []
6. Do you have any idea about social sustainability?

- a. *Yes* [] b. *No* []
7. How long have you been living in the neighborhoods?
 a. *1-5 years* b. *6-10 years* c. *11-15 years* d. *16- and above*
8. What is the ownership status of the place you live in?
 a. *Owner* b. *Renting*
9. How do you rate your relationship with your neighbors?
 a. *Very poor* b. *Poor* c. *Neutral* d. *Good* e. *Very good*
10. Are you a member of any social group like *Edir* or *Iqub* in your neighborhoods?
 a. *Yes* [] b. *No* []
11. Do you feel like you have a sense of belonging in your neighborhood?
 a. *Yes* [] b. *No* []
12. Have you ever felt excluded from a social group because of your race gender or ethnicity?
 a. *Yes* [] b. *No* []
13. Have you ever attended any meeting regarding the construction, renovation or maintenance of building in your neighborhood?
 a. *Yes* [] b. *No* []

SECTION C: SOCIAL EQUITY

14. There is adequate access to educational facilities.
 a. *Strongly disagree* b. *Disagree* c. *Neutral* d. *Agree* e. *Strongly agree*
15. There is adequate access to healthcare facilities.
 a. *Strongly disagree* b. *Disagree* c. *Neutral* d. *Agree* e. *Strongly agree*
16. There is adequate access to green space and recreational areas.
 a. *Strongly disagree* b. *Disagree* c. *Neutral* d. *Agree* e. *Strongly agree*
17. There is adequate access to public transportation.
 a. *Strongly disagree* b. *Disagree* c. *Neutral* d. *Agree* e. *Strongly agree*
18. There is adequate access to affordable housing.
 a. *Strongly disagree* b. *Disagree* c. *Neutral* d. *Agree* e. *Strongly agree*
19. There is adequate access to a job opportunity.
 a. *Strongly disagree* b. *Disagree* c. *Neutral* d. *Agree* e. *Strongly agree*

20. There is adequate access to retail facilities(shop)?

- a. *Strongly disagree* b. *Disagree* c. *Neutral* d. *Agree* e. *Strongly agree*

21. There is adequate access to the bank.

- a. *Strongly disagree* b. *Disagree* c. *Neutral* d. *Agree* e. *Strongly agree*

22. There is adequate access to the justice system regardless of their socioeconomic status, gender, race or religion.

- a. *Strongly disagree* b. *Disagree* c. *Neutral* d. *Agree* e. *Strongly agree*

SECTION D: SAFETY AND SECURITY

23. How satisfied are you with the level of safety in your neighborhood during the day?

- a. *Very dissatisfied* b. *Dissatisfied* c. *Neutral* d. *Satisfied* e. *Very satisfied*

24. How satisfied are you with the level of safety in your neighborhood during the night?

- a. *Very dissatisfied* b. *Dissatisfied* c. *Neutral* d. *Satisfied* e. *Very satisfied*

25. How satisfied are you with the overall safety of parking your car in your neighborhood?

- a. *Very dissatisfied* b. *Dissatisfied* c. *Neutral* d. *Satisfied* e. *Very satisfied*

26. How satisfied are you with the level of accountability and transparency in the government institution in your neighborhood?

- a. *Very dissatisfied* b. *Dissatisfied* c. *Neutral* d. *Satisfied* e. *Very satisfied*

SECTION E: HEALTH SAFETY, RISK, AND ENERGY

Rate aspects of the health safety, risk, and energy of the neighborhood on a scale of 1(Very poor, VP) to 5 (Very good, VG)

Statements	1	2	3	4	5
	VP	P	FAIR	G	VG
27. Quality of drinking water	1	2	3	4	5
28. Electricity	1	2	3	4	5
29. Waste management system	1	2	3	4	5
30. Air quality	1	2	3	4	5
31. Noise	1	2	3	4	5
32. Traffic Congestion	1	2	3	4	5
33. Pollution	1	2	3	4	5

SECTION F: NEIGHBORHOOD CHARACTERISTICS

Rate your satisfaction level of the neighborhood on a scale of 1(Very dissatisfied, VD) to 5 (Very satisfied, VS)

Statement	1	2	3	4	5
	VD	D	FAIR	S	VS
34. Accessibility and connectivity of streets and roads	1	2	3	4	5
35. Availability of site for walking and biking	1	2	3	4	5
36. Accessibility for the disabled	1	2	3	4	5
37. Satisfaction with the green landscape and vegetation	1	2	3	4	5
38. Public furniture and art	1	2	3	4	5
The aesthetic quality of the neighbourhood					
39. Building color	1	2	3	4	5
40. Building form/ design	1	2	3	4	5
41. Building height	1	2	3	4	5
42. Building material	1	2	3	4	5

APPENDIX 2**Approval Letter by Ethics Committee**

NEAR EAST UNIVERSITY

SCIENTIFIC RESEARCH ETHICS COMMITTEE

19.06.2023

Dear Robel Siltan Seyoum

Your application titled “**Analysis Of Social Sustainability For Neighborhood Area: Case Of Addis Ababa Ethiopia**” with the application number NEU/AS/2023/191 has been evaluated by the Scientific Research Ethics Committee and granted approval. You can start your research on the condition that you will abide by the information provided in your application form.

Prof. Dr. Aşkın KIRAZ

The Coordinator of the Scientific Research Ethics Committee

APPENDIX 3

Plagiarism Report



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