Innovation for Sustainable Development: How the Jonkoping Municipality is Working with Social Innovation for the 2030 Agenda

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8/24/2020
Table of Contents

Abstract ........................................................................................................................................ 3
1. Introduction .......................................................................................................................... 4
  1.1. Problem Formulation ........................................................................................................ 4
1.2. How relevant is this thesis to Peace and Development Studies Research? ................. 6
1.3. Research Objectives and Research Questions ................................................................. 7
1.4. Analytical Framework ....................................................................................................... 8
1.5. Disposition ........................................................................................................................ 8
2. Literature review .................................................................................................................. 9
  2.1. Historical Background of Sustainable Development ....................................................... 9
  2.2. The Sustainable Development Goals ............................................................................. 11
3. Analytical Framework ......................................................................................................... 16
  3.1. The Quadruple Helix Model of Innovation .................................................................... 17
  3.2. The Quadruple Helix Model as an Extension of the Triple Helix Model ....................... 19
  3.3. The Quadruple Helix as a Network of Cooperation Between Actors ......................... 20
  3.3.1. Who are the Actors in the Quadruple Helix? .............................................................. 20
  3.3.2. Public sector-centered innovation setting ................................................................. 22
  3.3.3. The industry-centered innovation setting .................................................................. 23
  3.3.4. The citizen-centered innovation setting .................................................................... 23
4. Methodology ....................................................................................................................... 24
  4.1. Qualitative Research Method. ....................................................................................... 24
  4.2. Abductive Reasoning ..................................................................................................... 26
  4.3. Research Approach and Data Collection Technique ...................................................... 26
  4.4. Qualitative Research Techniques .................................................................................. 27
    4.4.1. Interviews ................................................................................................................ 27
  4.5. Data Analysis Technique ................................................................................................ 29
  4.6. Underlying Problems ...................................................................................................... 30
5. Presentation of Findings ....................................................................................................... 31
  5.1. Sweden and Swedish Municipalities and the Sustainable Development Goals ........... 31
  5.2. Jonkoping Municipality and the Sustainable Development Goals ................................ 33
  5.3. Building the Bridge Innovation Concept ....................................................................... 34
  5.4. The Circular Centre Innovation Initiative ..................................................................... 35
6. Analysis. ................................................................................................................................. 36
  6.1. The Quadruple Helix Model revisited ............................................................................ 36
  6.2. The Building the Bridge Innovation Setting ................................................................... 37
    6.2.1. Public Sector-centred innovation setting ................................................................. 37
6.2.2. The initiators, ownership, and drivers of the innovation. .................................................. 38
6.2.3. The main innovation activity or outcome ................................................................. 38
6.2.4. Main actors involved in the innovation. ................................................................. 39
6.3. The Circular Centre Innovation Setting ........................................................................ 40
6.3.1. Civil Society-Centred Innovation Setting ............................................................... 40
6.3.2. The initiators, ownership, and drivers of the innovation ......................................... 40
6.3.3. The main innovation activity or outcome ............................................................... 40
6.3.4. Main actors involved in the innovation. ................................................................. 41
7. Conclusion .......................................................................................................................... 42
References ............................................................................................................................. 45
Books ........................................................................................................................................ 45
Journals and Articles ............................................................................................................. 45
Websites .................................................................................................................................. 48
Abstract

Innovation has been widely discussed as being extremely important for our drive towards the attainment of the sustainable development goals. This is because, as embed in its definition, sustainable development requires that we shift away from business as usual to find new ways of doing things, that take into consideration the preservation of the three pillars of sustainable development; the economic, social and ecological pillars. Since the publication of the Brundtland Report, there have been more focus, both in terms of research and policy, on the economic and ecological pillars of sustainability than on the social pillar.

The thesis carried out a research to determine how Jonkoping Municipalit is working to achieve the sustainable development goals, taking into perspective, the three pillars of sustainability: the ecological, economic, and social pillars. The research found that, even though the Municipality is working with all the goals and dimensions of sustainable development, more progress has been made with the ecological and economic dimensions than the social dimension.

Using the Quadruple Helix Model of Innovation Cooperation, this research examines what kind of social innovations that are taking place within Jonkoping Municipality that are tailored for the attainment of the sustainable development goals located within the social pillar of sustainability, and who are kind of actors and activities involved. The research finds that there are some social innovations going within the municipality that are specifically geared towards the 2030 agenda.
1. Introduction

1.1. Problem Formulation

In 2015, a new set of goals, the Sustainable Development Goals (SDGs) were adopted. The sustainable development goals were decided upon at the meeting of Heads of State and Government and High Representatives at the United Nations Head Quarters in New York. It was an effort to build upon the Millennium Development Goals.

According to the declaration in the final document, the sustainable development goals, also known as the 2030 agenda, are a comprehensive, far-reaching, people-centred set of universal and transformative Goals and targets (SDG, 2015; Enrico Giovannini et al, 2015). The final 2030 agenda text proposes 17 sustainable development goals (SDGs), with 169 targets to be supplemented in 2016, with numerous indicators (William Colglazier, 2015; Enrico Giovannini et al, 2015).

While there is no universal consensus on how to define sustainable development, partly because of its inherent vagueness and interpretive flexibility, most definitions, including the meaning enshrined in the SDGs, include three pillars of sustainability: economic development, environmental sustainability, and social inclusion (Jeffrey D Sachs, 2012; Magnus Bostrom, 2012; Enrico Giovannini et al 2015, SDGs, 2015). These are also known as the three Ps (Profit, Planet and People) or the three Es (Economy, Environment and Equity) (Magnus Bostrom, 2012).

Unlike the Millennium Development Goals, which were set exclusively for action in, and for the betterment of less developed countries, the new SDGs are universal and apply to all countries, requiring all countries and all the peoples of the world to take action (Halisçelik and Soytas, 2018). The sustainable development goals are a call for action by all countries – poor, rich and middle-income – to promote prosperity while protecting the planet. They recognize that ending poverty must go hand-in-hand with strategies that build economic growth and address a range of social needs including education, health, social protection, and job opportunities, while tackling climate change and environmental protection (UN SDGs, 2015; Halisçelik and Soytas, 2018)

For normative and substantive reasons, the three dimensions of sustainable development mentioned above are generally assumed to be compatible and mutually supportive (Magnus...
Bostrom, 2012; Murphy, 2012). All three dimensions and their interconnectedness are mentioned in key United Nations Sustainable Development Policy Documents, key European Sustainable Development documents, and key Multilateral Sustainable Development Indicators Documents (Murphy, 2012).

However, there remain various problems involved with the social pillar of sustainable development. Murphy contends that the meaning and associated objectives accorded the social dimension remain vague and conceptually elusive (Murphy, 2012). He further argues that the social pillar of sustainability has not received the same treatment as the other two dimensions, siting that there are various interpretations as to what issues are to be addressed, which may lead in a society, to addressing the needs of the most influential groups (Murphy, 2012).

Moreover, Bostrom thinks on similar lines, and outlines two problems associated with social sustainability: the first is that there is the problem of how we should define and understand this fluid concept of social sustainability and the second problem involves the practice, and is how the social sustainability aspects can be operationalized and incorporated into various sustainability projects.

Bostrom further points out that the linkages between the economic and environmental pillars are stronger and have been seen to create synergies and potentials for environmental policies and reforms (Bostrom, 2012). Conversely, the linkages between and the integration of the social and environmental dimensions have been given far less attention.

A lot of the texts in the sustainable development goals document emphasise the importance of innovation, as crucial ingredients in the efforts to attain the SDGs (William Colglazier, 2015; Enrico Giovannini et al, 2015). In the SDGs framework, innovation features strongly in both Goal 17, as well as a cross-cutting one to achieve several sectoral Goals and Targets (Enrico Giovannini et al, 2015). Fostering innovation is part of Goal 9 related to resilient infrastructure, and inclusive, sustainable industrialization.

While Target 9.5 highlights the role of research and innovation policy as one of the means of implementation (Enrico Giovannini et al, 2015)

Moreover, the Addis Ababa Action Agenda (AAAA) has also highlighted concrete innovation policies and actions as key for meeting the SDGs. Finally, the negotiations for the
Paris climate COP21 in December 2015 address Science, Technology, and Innovation issues, proposing a framework for enhanced action on technology development and transfer (Enrico et al, 2015).

Despite all the detailed recommendations on the importance of innovation in the achievement of the sustainable development goals, the literature on how and what kind of innovation could be combined for SDGs remains largely sparse. What makes it even more wanting is the fact that, innovation is an extremely broad subject. There is technological innovation, product innovation, process innovation. And there is also social innovation, which is quite a new area of research within the subject of innovation.

It is thus the aim of this thesis, to add to existing research by studying how, the Jonkoping Municipality is using social innovation for the attainment of the sustainable development goals. The study will focus specifically on the various aspects of social innovation within the Municipality and how they are targeted at achieving the sustainable development goals located within the social sustainability dimension of the three pillars of sustainable development. But also, the research will study the possible linkages between, and integration of the social, environmental, and economic dimensions, to identify synergies that may occur between these dimensions.

And last but not the least, the findings of the thesis would serve as guidelines for future policy development and implementation within the municipality and beyond.

1.2. How relevant is this thesis to Peace and Development Studies Research?

The question of how relevant this thesis is to the ongoing research in Peace and Development Studies cannot be overemphasised. First, the sustainable development goals are a set of comprehensive, far-reaching, people-centred, universal, and transformative Goals and targets that are designed to save our planet. Their successful implementation requires that we all work towards its attainment, without leaving anyone behind. Second, several of the goals are directly connected to some of the main themes that we study in Peace and Development studies. For example, goal number one, no poverty, goal number 2, zero hunger, goal number 5, gender equality, goal number 10, reduced inequalities, and goal number 16, peace,
justice, and strong institutions. In fact, one can put it that there is a strong argument for the integration of sustainable development goals into Peace and Development Studies Research.

1.3. Research Objectives and Research Questions

The objective with this thesis is focused on understanding how social innovation could practically be used, as a tool for achieving the SDGs goals that are located within the social dimension of sustainability. The thesis also has as an objective, to study the various actors within the innovation cooperation model and their various roles in any resulting innovation.

Furthermore, it is the objective of this research to identify possible linkages between, and integration of the social, environmental, and economic dimensions of sustainability, and identify possible synergies that can occur between these dimensions.

And for a more practical understanding, I have chosen to examine the Jonkoping Municipality as my case study. I thought a case study was important in this research because it would help add knowledge to ongoing empirical research about social innovation and social sustainability, and put into perspective, albeit with the cognizance that different situations warrant different approaches, how, practically, communities, institutions, regions, organizations, and countries can actually use social innovation as a tool for the attainment of the SDGs within social sustainability.

The research will examine what kinds of innovations are taking place within the Jonkoping Municipality that are linked to social sustainability, and seek to understand if and why they are targeted towards the attainment of specific SDGs located within the social sustainability dimension. The thesis will also, using Quadruple Helix Model, seek to understand what actors are involved in the innovation processes and how the involvement of those actors has influenced the outcomes that impacts specific SDGs. The research will look at how the social sustainability goals can go a long way to act as synergies for goals within the other dimensions of sustainable development. And finally, the research will look at possible challenges in the Municipality’s approach and the possibility of alternative approaches.

The above research objectives shall be achieved with the help of the following research questions:
• Are there any kinds of social innovations that are taking place within the Jonkoping Municipality that are targeted at social sustainability, and by extension, acting as synergies to the other dimensions of sustainability?
• Who are the stakeholders or actors involved in the social innovation processes for social sustainability and how are they involved?
• And what sort of alternative approaches are there in the innovation toolbox, that can be applied to improve on both the goals that the Municipality is currently working with and those that are left out?

1.4. Analytical Framework

The analytical framework used in this thesis is that of the Quadruple Helix Innovation Model that focuses on the interactions between actors from the academia, government, the industry and civil society (Henry Etzkowitz & Loet Leydesdorff, 1995; Hasche et al, 2019).

This model is chosen in this thesis because it offers the necessary tools to help analyse the kind of social innovations that are taking place within the Jonkoping Municipality and the kind of actors that are involved in the innovations. The model will help this research identify various actors that are involved in social innovation within the municipality and how such collaborations between actors have resulted in innovation. The resulting innovations would then be analysed to see in what ways and which SDGs within the social dimension of sustainability they are enhancing.

The quadruple Helix Model can be defined as an innovation cooperation model or an innovation environment in which, users, firms, universities, and public authorities cooperate to produce innovations (Robert et al, 2010; Hasche et al, 2019). The quadruple helix concept provides a frame where innovation can be understood, not just in terms of technological and product innovation, as is the case with the Triple Helix model, but also in terms of the social aspects of innovation. It provides the opportunity to, through a network of relationships – public and private actors, interacting in value-creation processes and producing valuable outputs for themselves and others – shift the focus to social innovation.

1.5. Disposition

The thesis is structured into the following seven chapters. Chapter 1 deals with a brief background to the study, purpose of the study, and how it fits into ongoing research, research
questions and delimitation of the research methods and theoretical frame. Chapter 2 deals with a review of related literature. That is, what research is ongoing within this area and what gap is there that this thesis would fill. In chapter 3, the analytical framework is presented. In this chapter, the quadruple helix concept of innovation and its various contents would be presented in greater detail. Chapter 4 will present the methodology, why this methodology is chosen and how the data for this thesis is collected. Chapter 5 presents the findings of the research. Here, the data collected during the research will be presented. In chapter 6, the analysis of the collected data will be presented with the use of the chosen analytical framework, and chapter 7 discusses the conclusions, where the results of the analysis are summarised, and recommendations made.

2. Literature review

This section is dedicated, first, to a brief historical review of the concepts of innovation and sustainable development and then to a detail review of ongoing research regarding social innovation and social sustainability, as they are the two main themes of this thesis. For the sake of clarity, literature review for the two concepts shall be discussed separately, even though they are studied as one subject, within the context of this thesis. Their interrelationship and interconnectedness stem from the fact that, within the context of this research, the latter is, shaped by the former, at least, theoretically. The literature review shall also include a definition and presentation of these two concepts, so that the reader clearly understands what the concepts are, and why they are a subject of investigation in this research.

2.1. Historical Background of Sustainable Development

This subsection makes an introduction to sustainable development, briefly describing the timeline of events, from the Stockholm Conference of 1972 to the immediate events leading to the birth of the Sustainable Development Goals, from which the topic of this research is derived. The aim is to create a clear picture of the historical source of this research topic and to get the reader to understand why social sustainability as one of the three pillars of sustainable development, is an important topic that needs researching into.
The concept of sustainable development can be traced as far back as 1972, with the United Nations Conference on the Human Environment, also known as the Stockholm Conference, and started with concerns over the impact economic activities were having over the natural resources base. Thus, the idea of sustainability was, earlier on, exclusively about ecological sustainability. It was only after the publication of the Brundtland report that the concept of sustainability evolved to encompass the economic and human dimensions, (Holden et al, 2014; Duran et al, 2015). Even so, the social equity dimension did not emerge as prominently as the other two dimensions, in terms of urgency, in policy, research, and equitable integration into the other dimensions.

The outcome of the Stockholm conference was the Stockholm Declaration and the Stockholm Action plan. The declaration and action plan included 5 resolutions calling for a ban on nuclear weapons, the establishment of a data bank for environmental data, the establishment of an environmental fund, actions on environment and development, and the establishment of the United Nations Environmental Programme (UNEP).

Even though there was no mention of the term sustainable development at the Stockholm Conference, some of the ideas and concepts mentioned at the declaration concerned the environment and development; a clear indication that the need to strike a balance between development and environment was gaining grounds.

In 1987, the Report of the World Commission on Environment and Development, also known as the Brundtland Report, or Our Common Future, was published. The report defines sustainable development as that which meets the needs of the present, without compromising the ability of the future generation to meet their own needs (WCED, 1987; Legett and Carter, 2012). Here, the concept of sustainable development was clearly defined, stating its four dimensions. These four dimensions include: safeguarding long-term ecological sustainability, satisfying basic human needs, promoting intragenerational and intergenerational equity (Holden et al, 2014). Intrigenerational equity means equality within and between countries, in this current generation, and intergenerational equity means, equality between the current generation and future generations.

On September 8th, 2000, the United Nations General Assembly adopted the United Nations Millennium Declaration. The declaration, among other things, adopted the so called the eight Millennium Development Goals, mostly to be achieved by 2015. The goals are mainly aspirational, and not legally binding. In 2002, the World Summit on Sustainable Development (WSSD) was organized in Johannesburg, South Africa. Among others, the outcome of the summit included the Johannesburg plan of implementation, the Johannesburg Declaration on Sustainable Development.

Furthermore, in 2012, the United Nations Conference on Sustainable Development, took place in Rio de Janeiro, Brazil. Also known as Rio+20, the conference resulted in a focused political outcome document, which contains clear and practical measures for implementing sustainable development. In Rio, member states decided, inter alia, to launch a process to develop a set of Sustainable Development Goals, which were to build upon the Millennium Development Goals, and set the grounds for the post 2015 development agenda (Rio+20, 2012).

2.2. The Sustainable Development Goals

On 25th September 2015, a new set of goals, the Sustainable Development Goals (SDGs) were adopted. The sustainable development goals were decided upon at the meeting of Heads of State and Government and High Representatives at the United Nations Head Quarters in New York. It was an effort to build upon the Millennium Development Goals.

According to the declaration in the final document, the sustainable development goals, also known as the 2030 agenda, are a comprehensive, far-reaching, people-centred set of universal and transformative Goals and targets (SDG, 2015; Enrico Giovannini et al, 2015). The final 2030 agenda text proposes 17 sustainable development goals (SDGs), with 169 targets to be supplemented in 2016, with numerous indicators (William Colglazier, 2015; Enrico Giovannini et al, 2015).

The sustainable development goals are integrated and indivisible, global in nature and universally applicable, taking in consideration, different national realities, capacities, and levels of development and respecting national polices and priorities, reads the declaration (SDGs, 2015).
Apart from the definition found in the Brundtland Report of 1987, which defines sustainable development as development that meets the needs of the present, without compromising the ability of the future generations to meet their own needs (WCED, 1987), there is no clear scientific or political accepted definition of sustainable development. Rather, the use of the concept has increasingly reflected socially desirable attributes of solutions pertaining to global, local, and project-level problems (Holden et al, 2014). This lack of definition can be attributed to the inherent vagueness and interpretive flexibility of the concept (Jeffrey D Sachs, 2012; Magnus Bostrom, 2012; Enrico Giovannini et al 2015).

That, notwithstanding, through its evolution, from the Brundtland Report, up until the birth of the sustainable development goals, the concept of sustainable development has consistently included at least, three dimensions: The economic dimension, the environmental or ecological dimension (Biodiversity and resources), and the social dimension (Welfare and equality).

In the Brundtland Report, for example, four primary dimensions can be derived – safeguarding long-term ecological sustainability, satisfying basic human needs, and promoting intragenerational and intergenerational equality (Holden et al, 2014).

For the sake of conceptual clarity, it is important to raise a few points here. Curiously, in the Brundtland Report, there is no direct mention of economic sustainability as one of the three
pillars of sustainable development, as we have in the sustainable development goals, and as it is used in a lot of sustainable development literature. Instead, in the report, the stress is on ‘safeguarding the basic needs of the poor, to which overriding priority must be given’ (WCED, 1987, P. 43). But also, in the report, people are entitled to aspire to more than just meeting their basic needs. ‘Sustainable development requires meeting the basic needs of all, and extending to all, the opportunity to satisfy their aspirations for a better life’ (Holden, 2014; WCED, 1987, P. 44).

The concept of ‘needs’ or ‘basic human needs’ can be ascribed to the economic dimension of sustainability, as well as partly, to the social dimension. In terms of the economic dimension, this is especially valid when one looks at the use of ‘needs’ in the following context in the report. The report contends that, ‘living standards that provide more than basic needs can be sustainable, but only if such living standards assure long-term ecological sustainability (Holden et al, 2014). Here, the concept of economic sustainability comes into play – we can pursue living standards economic (development) that provide for more than just basic human needs, provided such pursuance of living standards is in keeping with the standards that do not erode our biosphere base, beyond rescue. In other words, economic sustainability is required for maintaining environmental sustainability, one can still put it.

In terms of the social dimension, the Brundtland Report sights employment, food, energy, housing, water supply, sanitation, and health care as part of the basic human needs. Here, the concept of needs can, also be ascribed to social sustainability when one looks at characterisations such as housing (access, affordability, quality, mixed, among others); water supply (quality, ease of access, affordability); energy (access, quality, affordability); employment (equitability, quality, wages and wage differentials); healthcare (access, cost, equitability), among others.

It is important to stress that the sustainable development goals can also be grouped into the three dimensions of sustainable development, as seen below. Figure 3 below demonstrates the classification of the 17 sustainable development goals into three dimensions of sustainable development.
Fig. 2. *The three dimensions of sustainable development.*

At the base of the figure, are the goals within the environmental dimension of sustainable development, also known as the biosphere. It also illustrates that the biosphere is the foundation for global sustainability, according to the Stockholm Resilience Centre. This is because it is the biosphere that supports life on earth. The middle level of the figure shows those goals associated with the social dimension of sustainability. Those are goals associated with societal wellbeing. And the goals at the upper level represent the economic dimension of sustainability.
Source: The Stockholm Resilience Centre.

Fig. 3. The sustainable development goals grouped into the three dimensions of sustainability.

For normative and substantive reasons, the three dimensions of sustainable development mentioned above are generally assumed to be compatible and mutually supportive (Magnus Bostrom, 2012; Murphy, 2012). In fact, in the sustainable development goals text, there is emphasis on the need to give equal importance to all three dimensions of sustainable development (SDGs, 2015). All three dimensions and their interconnectedness are mentioned in key United Nations Sustainable Development Policy Documents, key European Sustainable Development documents, and key Multilateral Sustainable Development Indicators Documents (Murphy, 2012).

However, there remain various problems involved with the social pillar of sustainable development. Murphy contends that the meaning and associated objectives accorded the social dimension remain vague and conceptually elusive (Murphy, 2012). He further argues that the social pillar of sustainability has not received the same treatment as the other two dimensions, siting that there are various interpretations as to what issues are to be addressed,
which may lead in a society, to addressing the needs of the most influential groups (Murphy, 2012).

Moreover, Bostrom thinks on similar lines, and outlines two problems associated with social sustainability: the first is that there is the problem of how we should define and understand this fluid concept of social sustainability and the second problem involves the practice, and is how the social sustainability aspects can be operationalized and incorporated into various sustainability projects.

Bostrom further points out that the linkages between the economic and environmental pillars are stronger and have been seen to create synergies and potentials for environmental policies and reforms (Bostrom, 2012). Conversely, the linkages between and the integration of the social and environmental dimensions have been given far less attention, both in theory and in practice.

Furthermore, Eizenberg and Jabareen, (2017), also contend that, social sustainability, unlike the other two dimensions, lacks theoretical and empirical studies. They put it that the social aspect of sustainability was integrated late into the debates on sustainable development.

In line with the arguments made above, this research contends that there is the need to further research into the social dimension of sustainability. This, to better understand how to formulate and implement policy on the one hand, and how the social dimension can better be incorporated with the economic and environmental dimensions so as they can all benefit from the synergies that may arise.

3. Analytical Framework

In this chapter, the Quadruple Helix Framework of Innovation, which will be used as the analytical framework for this study, will be discussed in detail. First, an explanation will be made of what the Quadruple Helix Model is all about, then followed by a description of how the model was developed. The different components of the model will then be presented and explained to grasp a deeper understanding of how the concept functions. A criterion of how the model would be used in analyzing the findings of this thesis will then be established.
3.1. The Quadruple Helix Model of Innovation

As already defined in 1.3. above, the Quadruple Helix Model is defined by Robert et al as an innovation cooperation model or an innovation environment in which users, firms, universities, and public authorities cooperate to produce innovations (Robert et al, 2010). In other words, the Quadruple Helix Model of innovation involves four categories of actors, agents, or helices, who cooperate to produce innovation, namely: The academia or universities, the public authorities, the industry or firms, and the civil society.

In some literature, the word “interact” and “cooperate” are used interchangeably to refer to the relationships and activities between actors within an innovation setting. In this thesis, the word cooperate is preferred because it depicts a deliberate conscious process and or activities involving actors or agents within an innovation setting, aimed at achieving specific, desirable outcomes. Furthermore, in a lot of literature, the words end-users, users and civil society are used interchangeably to depict the actors within the fourth helix of the Quadruple Helix Model. In this thesis, for the sake of clarity, and to give a broader understanding of the actors within the fourth helix, the words citizens and or civil society shall be used to depict the actors within the fourth helix.

The above categorization also fits the concept and definition of social innovation and the concept of social sustainability, which are the central themes in this thesis. This definition, which is gotten from Peter et al, states that social innovation is a novel solution to a social problem that is more effective, efficient, sustainable, or just than existing solutions, and for which the value created accrues primarily to society, rather than private individuals (Peter et al, 2019).

Why use the Quadruple Helix Model in this research? The model is suitable for use in the study of social innovation. To begin with, the Quadruple Helix is an innovation and collaboration model with a citizen/civil society perspective. The model is useful in innovation settings where the citizens needs are the focus, as for instance, in health care and the provision of public services, in efforts to reduce inequality in health, education, income, housing, access to information, and much more (Klarenfjord and Alsterlind, 2019).

This is especially relevant as conventional innovation processes, often than not, lack the involvement of citizens and or civil society. These conventional processes sometimes adopt the Triple Helix Model, which is an innovation and collaboration model which describes the
cooperation between the public sector, academia, and industry (Klarenfjord and Alsterlind, 2019).

In the Triple Helix Model, citizens and or civil society are viewed as passive recipients, consumers, or end-users, who assimilate the product or service developed. Lack of the involvement of citizens may lead to products and services not used, lack of transparency, social exclusion, and innovators and users not understanding each other (Klarenfjord and Alsterlind, 2019).

Conversely, using the Quadruple Helix Model in social innovation settings can lead to more successful, citizen-oriented innovative outcomes. The citizens or sectors of civil society involved would be more likely to accept and use the innovation. The benefits of the innovation to the society, would likely be greater than the costs. And citizens would likely be empowered, which might lead to increased trust towards the innovators and their active commitment to the innovation system. The role of the citizens as actors in the Quadruple Helix Model will be discussed in greater detail, along with other actors, in section 3.3.1. below.
3.2. The Quadruple Helix Model as an Extension of the Triple Helix Model

The quadruple helix model of innovation is an extension of the triple helix model that was first developed by Henry Etzkowitz and Loet Leydesdorff. The main theme of the triple helix model of innovation is that innovation takes place through the cooperation between the university, industry, and the government or public authorities, each supplying its own inputs in the innovation process (Safiullin et al, 2014).

Within the triple helix model, government and university interact at the initial stage of the innovation – the conception of the idea. Thereafter, university cooperates with businesses or industry in the transformation of technology. The role of the government can include, but not limited to, influencing research and development (R&D), through financing, setting up research institutions and research hubs, influencing National and Regional Innovation Systems (NISs & RISs), through policy. The role of the university in the triple helix model is indispensable because universities are the centres of knowledge development (Safiullin et al, 2014).

The Model’s emphases on the knowledge-based economy, as opposed to the political economy, underscores the importance of higher education in innovation and by extension, in technological and product development, which leads to a country’s specialization capacity and its competitive advantage, thereof.

In light of the discussion on the Triple Helix Model above, one can, to a large extent, say that, the Triple Helix Model is developed with a focus on technological development, with strong links to product innovation, profitability, market demands and commercialization underpinnings (Peter et al, 2019). Here, the end-user or consumers are factored in the process of innovation solely in terms of product or service demand and feedback or consumer preference.

The innovation in this case is designed for users. This means that the product or service is developed on behalf of users. Data about users, general theories and models of user behaviour are used as a base for the design of the innovation (Robert et al, 2010).
In other words, their contribution to the innovation process is exclusively in terms of their responsiveness to the products or services that come out of innovation. This means that the civil society as agents and users of innovation are not considered, beyond the limits of consumption in terms of products and services. This creates a problem in that, those societal needs that are underpinned in social sustainability are not factored into the innovation process within the Triple Helix Model.

3.3. The Quadruple Helix as a Network of Cooperation Between Actors

This section describes in detail what the various actors are within the Quadruple Helix Model, and then goes further to discuss the criteria by which the model will be used in analyzing the findings. These criteria may include, the roles of the actors, and how they may cooperate within an innovation environment.

3.3.1. Who are the Actors in the Quadruple Helix?

Here, the various actors in the Quadruple Helix Innovation setting will be identified, and their roles, will be discussed. This thesis, at least, on theoretical grounds, posits that, the level of involvement of each actor in an innovation setting may vary. Since the focus of the research is about social innovation for social sustainability, and social innovation, in this context, is citizen-oriented, it is relevant that, in looking at the roles and extent of the various actors’ involvement, the focus should be mostly on the degree of citizen involvement in each setting.

On this basis, before the discussion on the role of various actors in an innovation setting, it is important to come up with another characterization that deals with the degree of citizen involvement. Even though social innovations are citizen oriented, the degree of citizen involvement in an innovation platform may vary (Peter et al, 2010). For example, citizens’ participation can be indirect, such as participating in a user questionnaire sent to users to find out what kind of needs, they have in relation to certain products or services. Conversely, citizens’ participation may be more direct, such as in situations where they participate in the innovation processes for the provision of, for example, new services, along with R&D experts (Perter et al, 2010).
Another approach to identify the various ways and degrees of citizen involvement is to divide user involvement into three categories: for citizens, with users and by users (Peter et al, 2010). The ‘design for users’ means that the product or service is developed on behalf of users. In other words, users are not directly or actively involved in the innovation process. Data about users is used as the basis for the design of the service or product.

The second type, ‘designed with citizens’, refers to product or service development approach, where the focus is on users, but it is not the users who own the innovation idea. Here, users are involved throughout the process and are on equal terms in co-creating future solutions based on their needs and experiences (Perter et al, 2010).

The third type of citizen involvement is ‘design by users’, which depicts an innovation approach, in which citizens are actively involved, and take part in the design of the innovation. In this case, citizens are involved in the role as innovation process initiators, driving the process from the very beginning. So now, who are the various actors in an innovation setting and what are their roles?

**Public Authorities** include government and regional development agencies and policy makers.

**Academia** include universities and research and development institutions

**Industry** consists of businesses, for example, public and private corporations, small and medium-sized enterprises, among others.

**Citizens or Civil Society** While there is consensus within the innovation research community, of the existence of the fourth helix, there is still some debate as to what constitute that fourth helix. Some researchers, such as Robert et al (2010) are of the opinion that it is more useful and meaningful to consider the Quadruple Helix, rather as a continuum or space, than a single entity. This way, there is flexibility as to what can be considered the fourth helix.

Hasche et al (2019), opines that there is no consensus as to what the fourth helix should be comprised of. They outline that most researchers tend to address the fourth helix in terms of the civil society, consumer, and end-user. From the discussions above, one can say that there is the room and the flexibility to, at least, in theory, use any of the user, end-user, consumer and civil society, among others, as a fourth helix.
In this research, as briefly mentioned in section 3.1, I am going to use the civil society or citizens as the fourth helix. The reasoning is that the civil society, in this context, represents any other actors or agents, that do not fall within the first three helices of academia, government and firms. So, the civil society may include, but not limited to non-governmental organizations, trade unions, labor unions, religious institutions, cultural groups, the media, among others.

Again, citizens or civil society as the fourth helix in the Quadruple Helix Model may include, as stated earlier, the end-users, trade unions, churches, civil society organizations, cultural groups, the media, among others.

In this thesis, as in Robert et al, (2010), the perspective is that an innovation may be public sector-centered, academia-centered, industry-centered or citizen or civil society-centered. In each of the cases, citizens are involved in different degrees. The above characterizations in section 3.3.1. and the ones that will be discussed under 3.3.2 are important criteria because they set the gauge by which the findings of the thesis are going to be analyzed.

3.3.2. Public sector-centered innovation setting.

In this innovation setting, the focus is on, the development of better public organizations and better delivery of public services. In this setting, innovation can be based on a combination of new research knowledge as well as new applications and user research knowledge. The initiator of the innovation is the public-sector organization or group of public-sector organizations. The goal of the innovation activity is more than anything, to develop better functioning public organizations so that they offer new and better products and services to the citizens.

Here, even though the focus of the innovation is to serve the citizens better, they are not directly involved in the innovation process. Instead, public organizations gather systematic information and feedback from the citizens, about their services. Information can be gathered through surveys and interviews, or through direct dialogue. In this setting, the degree of user involvement could be characterized as the innovation is designed with users.
3.3.3. The industry-centered innovation setting.

In the industry-centered innovation setting, the owner of the innovation is the firm or number of firms. The innovation may be based on a combination of new research knowledge from within the firm and or knowledge from the citizens. Knowledge about users may include knowledge about citizens needs and or the problems they face. In the context of this innovation setting, the degree of citizen involvement can be described designed with users. Users are treated in the setting as both informants and innovation developers (Peter et al., 2010). This means that users also participate in the early stages of an innovation process, such as in the idea and early development stages.

3.3.4. The citizen-centered innovation setting

In the citizen-centered innovation setting, the focus is the development of innovation that is relevant for citizens. Citizens are at the center of this kind of innovation setting, even though the innovation outcome can be based on knowledge from citizens, universities, public authorities, or firms. The owner of the innovation may be a citizen or groups of citizens. In this innovation cooperation, the degree of involvement of the citizens could be characterized as designed by citizens. This means that citizens are actively at the center of the processes.
that may lead the development of new services, products, and new ways of doing things. The role of public authorities, firms, and universities is to support citizens in their innovation activities.

This research takes the perspective of the Quadruple Helix as a network of relationships, where the university, public authorities, firms, and the civil society cooperate in value-creating processes to transform various inputs into valuable outputs for themselves and the larger society. In this paper, the emphases are placed on the relational processes taking place within a Quadruple Helix setting, that is, the various actors or agents involved, the resources combined, and the activities performed, as well as the outcomes (innovation) of the processes (Hasche et al, 2019).

The relationships in the context of this thesis are not viewed as created and developed in isolation. They are, instead, regarded as part of a broader context, that is, a network of interdependent relationships. The relationships (actors, resources, and activities) are the context that generate the conditions for creating value in a Quadruple Helix setting (Hasche et al, 2019).

The innovations could be anything considered to be useful to partners in innovation cooperation (Robert et al, 2010); and these may include, but not limited to technological, product, service, process, method, commercial and none-commercial innovations.

4. Methodology.

This chapter is dedicated to a discussion on the choice of method used in this research. The reasoning and justification for the use of the chosen research method will be presented. The chapter begins by an explanation of the qualitative case study as a choice of the research method, and why is suited for this kind of research.

4.1. Qualitative Research Method.

This subsection analysis two research methods: qualitative and quantitative methods, looking the at the differences between the two methods. It then goes further to discuss qualitative method as the chosen method for this research and outlines justifications for that. It ends by highlighting the advantages and disadvantages of each method.
There are generally two methods used in research: quantitative and qualitative research methods. The research method used in this thesis is qualitative research. This is because this thesis is studying activities and processes within society that produce anticipated outcomes. The thesis is about studying cooperation between actors in society that may lead to innovation and have implications on social sustainability. This kind of studies require in-depth analysis and an insight into processes that can only be possible through qualitative studies.

Qualitative studies generally involve the systematic collection, organization, description, and interpretation of textual, verbal, or visual data to understand concepts, opinions, or experiences. In contrast, quantitative studies generally involve the systematic collection of data about a phenomenon, using standardized measures and statistical analysis (Hammarberg et al, 2016). Qualitative research methods are used to answer questions about experiences, meanings, and perspectives, often, from the standpoint of the participant(s); it is best suitable when there is the need for an in-depth insight into a research problem or to generate new ideas for research. Qualitative research deals with data collection that is usually not amenable to counting or measuring (Hammarberg et al, 2016). Qualitative research is commonly suited for research within the fields of humanities and social sciences.

The reasoning behind the choice of qualitative method approach in this research is grounded in the fact that, the research concerns a study of what types of social innovations are going on within Jonkoping Municipality that are geared towards the SDGs, and who are the actors involved in those innovations. The research requires and understanding of what is going on, who are those involved and their roles and what are the outcomes. This kind of research requires interviews to understand people’s roles in an activity.

There are several techniques involved in qualitative research, some of which include focused groups interviews (for investigating beliefs, attitudes and concepts of normative behavior); semi structured interviews (to seek views on a focused topic, or with key informants, for background information or an institutional perspective); in-depth interviews (to understand a condition, experience or event from a personal perspective); and analysis of texts and documents (such text books, as articles and journals, government reports, media articles, websites), to get existing knowledge about a topic (Hammarberg et al, 2016).
4.2. Abductive Reasoning.

In this subsection, a discussion is done on what is an abductive research approach, and why it is suitable for this kind of research.

Abductive reasoning is to abduce, (or take away) a logical assumption, inference, conclusion, hypothesis, or best guess from an observation or set of observations. Because the conclusion is merely a best guess, the conclusion that is drawn may or may not be true. In applying an abductive reasoning in a research, the researcher draws the conclusion based on all the information gathered. Abductive reasoning is important because there is often many or an infinite number of possible explanations for a phenomenon, so you need some way to decide which possible explanations to look at first.

Abductive reasoning is suited for a case study because in the research process, new processes, phenomenon, and information may come up that requires flexibility in the conclusion. This is why abductive reasoning is chosen for this research.

4.3. Research Approach and Data Collection Technique.

Under this subsection, the various research approaches common in qualitative research will be reviewed, including the approach used in this thesis; followed by a brief review of the various data collection techniques in qualitative research in general, and a discussion of the data collection technique used in this thesis and why such a choice of technique. This section will end with a discussion on the strength and weaknesses of this technique.

There are many approaches to qualitative research, and all are focused on retaining rich meaning when interpreting data (Bhandari, 2020). The most common approaches include, grounded theory, ethnography, action research, phenomenological research, and narrative research (Bhandari, 2020). It is important to make a brief description of each approach so as the reader can grasp the differences in these approaches, and then understand the choice of approach for this research.

Grounded theory is used when researchers collect data on a topic of their interests and inductively develop theories from those topics. The ethnography approach is used when researchers immerse themselves into a setting such as a community, company, or organization to understand some patterns. Action research occurs when researchers and participants in collaboration, link theory to practice driving social change. In
phenomenological research, the researcher investigates a phenomenon by describing and interpreting participant’s live experiences. And finally, in a narrative approach, researchers examine how stories are told to understand how participants perceive and make sense of their experiences.

4.4. Qualitative Research Techniques.

Each of the research approaches mentioned above involves the use of one or more data collection techniques. Some of the most common qualitative data collection techniques include:

- Observation – recording what you have seen, heard, or encountered in detailed notes.
- Interviews – personally asking people questions in one-on-one situations. Qualitative interviews are sometimes called intensive or in-depth interviews. They are semi-structured, meaning that the researcher has a specific topic about which she or he would like to hear from the respondent. More on this will be discussed under method of data collection below.
- Focus groups – entails asking questions and generating discussions among a group of people.
- Surveys – involves distributing questionnaires with open-ended questions.
- Secondary data collection – involves reviewing and collecting data from existing literature in the form of texts, audio, images, or video recordings.

4.4.1. Interviews.

The data collection technique used in this thesis is both in-depth, semi-structured, open-ended interviews and a review of secondary data. Semi-structured interviews are a source of primary data and are relevant when the researcher has a specific topic about which she or he would like to hear from the respondent, and the questions may not be asked in the same way or exactly the same order to each and every respondent (Saylor, 2012; Bhandari, 2020). The questions are open-ended in the sense that, the researcher does not provide answer options to
the questions. This means that the researcher can ask follow-up questions and there is room for an in-depth discussion (Saylor, 2012). The primary aim of an in-depth interview is to hear from the respondents, about what they think is relevant to the topic at hand, and to hear it in their own words. This allows the respondents to engage in the interview, and to fully express their thought about the subject of the interview.

In qualitative interviews, the researcher usually develops an interview guide in advance of the interview, that he or she refers to, during the interview. The interview guide contains a list of questions that the researcher looks to cover during an interview. But, as the name implies, it is only a guide, and it is not set-in stone (Saylor, 2012). This is because participants are asked to provide answers in their own words, and to raise points that they feel are relevant and important, and as such, each interview is likely to flow a little differently. The opening question in an in-depth interview may be the same across all the interviews, from that point on, it is what the respondent says that may shape the flow of the interview.

In the context of this thesis, I had a total of nine interviews, three with women and six with men. Of the nine interviews, two of the respondents are researchers from Jonkoping University, four from Jonkoping Municipality, one from a civil society organization called Coompanion and two from the Swedish steering committee of the 2030 agenda. The four respondents from Jonkoping Municipality are heads of departments that are engaged with sustainability work that is geared towards the 2030 agenda. Of the 9 interviews conducted, three were face-to-face interviews and the rest were done over zoom live meetings, due to concerns over the corona virus pandemic.

An interview guide was developed well in advance before the interviews began and a copy was sent to my tutor for confirmation. The interview guide had a total of eight interview questions, which, as I said earlier, were open-ended, semi-structured, in-depth interview questions. In many instances, the flow of the interview did not follow the structure of the interview questions in the guide. This was mostly guided by how the respondent responded to the question at hand. For example, in some cases, in answering one question, the respondent, in the process of detailing a response, may answer the next question or partly answer it. The interviews were done between May 22nd and June 23rd, 2020. The interview conversation was recorded in an audio recorder and shall be transcribed into text before analysis.

The average interview time was 40 minutes, and in some cases, the respondent asked for the interview guide to be sent to them in advance. Apart from the interviews, I also carried out a
review of literature to gather secondary data. A total of about 30 sources were consulted, including municipality websites, and websites of some civil society organizations. The problem with secondary data is that the researcher may not have control over the strength, quality, and validity of the data, even if the data comes from reliable sources. That is why it is called secondary data.

The main strength of a structured interview is the presence of the interviewer. Interviewers may convince reluctant respondents, motivate respondents, and provide additional instruction or explanation during the data collection. Furthermore, the face-to-face setting allows for optimal communication as both verbal and non-verbal communication are possible (Alasuutari et al, 2008) The main weakness, is that the presence of the interviewer can influence responses and cause unwanted interviewer effects, especially when sensitive issues are discussed (Alasuutari et al, 2008).

4.5. Data Analysis Technique.

The data analysis in this research will begin with obtaining a transcript of the interview conducted. Since the interviews in this thesis were recorded, the process will begin with transcribing the recorded interview data. To transcribe an interview means that one creates a complete, written copy of the recorded interview, by playing the recording back, and typing in each word that is spoken on the interview, noting who spoke which word.

The technique of coding will be applied in the interview data analysis to identify patterns in the interview transcripts. Coding involves identifying themes across interview data by reading and rereading the interview transcript until the researcher has a clear idea of what sorts of themes come up across the interviews (Saylor, 2012).

There are two types of coding – open coding and focused coding. Open coding occurs when the researcher reads through the interview transcripts, line by line, making notes of any categories or themes that jump to mind (Saylor, 2012). During open coding, it is important to not let any your research question or problem, or expectations of what you think you might find, cloud your ability to see emerging categories or themes – as the name implies – to keep an open mind while you read through the transcript. The process of coding then, begins with open coding, and when that is done, it is safe to move to focused coding.

Focused coding, on the other hand, involved further narrowing or collapsing categories identified in open coding by going through the notes taken during open coding. While doing
this, you identify themes and categories that seem to be related, and merging some, where necessary. Then each collapsed theme is given a code and identify passages of data that fit each named theme (Saylor, 2012).

4.6. Underlying Problems.

When one does qualitative research that requires interviews, one expects to optimize the number of interviewees to make the data more representative. However, sometimes, it is hard to get those interview slots that one desires, and this is one problem that this research faced. In this case, first problem is that posed by time. Given the time frame and the period of the year, I could not have as many interview slots as I would have liked to. The reason is that the interviews came at the time when a lot of people were on leave from work. Three potential interviewees that I contacted never replied to my request for an interview. One potential interviewee told me she had no time to grant me interview.

The second problem is that of language and it comes in two ways. First, some of the people I interviewed could not express themselves well in the English Language, as they are all Swedish. They find it difficult to properly express some words in the English Language, and this can have had a bearing in the quality of the data collected. In some cases, they had to end up saying some words in Swedish and I had to do the translation. Second, some of the websites that I consulted are entirely in Swedish, even though my web browser, set to translate websites, did translate some of the websites but those are not certified translations.

Furthermore, in the interviews conducted for this research, like in other structured interviews, the mere presence of the interviewer can have influenced the responses and cause unwanted interview effects, especially when sensitive issues are discussed. In the case of this research, at some point in some interviews. For example, when discussing inequality in employment and difficulties in getting into the job market between Swedish born and immigrants, one respondent, when pressed on what he thought was behind these discrepancies apart from qualification, he said those other underlying factors may be sensitive to discuss.

In addition, the research could not get data, both at national and at the municipality level, that could help make some comparison in terms of progress made in the three pillars of sustainable development, even though the general consensus from the interviews conducted was that more progress was being made with the economic and environmental sustainability than with the social. One common example quoted was that social inequalities is on the rise,
both nationally and locally. Having access to such information would have made the case for carrying out this research more compelling, as it would have highlighted the disparities in progress, between the economic and environmental goals on the one hand, and the social goals on the other, and as such, situate stronger grounds for the research.

5. Presentation of Findings

In this section, the findings of the research interviews will be presented, beginning with an overview of Sweden and how the Swedish Municipalities are mandated to operate in relation to the sustainable development goals. During the research interviews, three outstanding social innovation cooperation activities were identified, that are geared towards social sustainability. The Building the Bridge Project, The Circular Centre Project.

5.1. Sweden and Swedish Municipalities and the Sustainable Development Goals.

Sweden wants to be the leader in the implementation of the sustainable development goals, both nationally and globally. The 2030 Agenda involves a process of gradual transition and further development of the Swedish social model as a modern and sustainable welfare state. From the Swedish perspective, everyone should be involved in this process; no one should be left behind (UNSDGs, 2017). Sweden’s approach stresses broad ownership among all actors in society. Ownership and participation that are developed and deepened over time. The shared commitment, building on knowledge and insight, from local to national level, creates the necessary foundation for success with the 2030 agenda (UNSDGs, 2017).

The effective implementation of the 2030 Agenda is demonstrated through decisions and measured in day-to-day activities and existing governance processes. Regular activities in the public sector – and in society as a whole – is permeated by sustainable development as expressed in the 2030 Agenda (UNSDGs, 2017).

Sweden has a favourable starting position for implementation of the 2030 Agenda. Peaceful and democratic conditions have characterised the country for a long time and have enabled the development of a culture of collaboration between different actors in society – political, economic, and social.
In several areas, Sweden is doing well by international standards – for example in terms of the poverty and hunger goals, and the goals on education, health, water, and infrastructure. As regards the climate goal, Sweden’s emissions of greenhouse gases were reduced by 25 per cent between 1990 and 2015.

Despite the successes mentioned above, Sweden faces major challenges regarding the goal of achieving sustainable consumption and production in Sweden and abroad. Per capita, Sweden remains one of the biggest polluters in terms of the level of consumption (Hanna, 2020). This means that the average Swede is rich in such a way that they consume a lot, in terms of travelling and other consumption dimensions, leaving behind a comparatively high carbon footprint.

At home, Sweden also faces several challenges related to inequalities: to reduce income gaps (including between women and men for the same work), increase the disposable incomes of certain vulnerable groups and achieve health equality and equal opportunities for learning. People with disabilities, refugees and other migrants and some older and young people have a harder time establishing themselves on the labour market. According to Hanna Nelson, former steering committee member charged with assessing how Sweden has progressed with the 2030 agenda, but now working with Oxfarm, Sweden had an unemployment rate of 4 percent, looking at unemployment within jobs, which is extremely low. But if you start looking at who is unemployed, almost all are those born outside the European Union, which unemployment rate was at about 12 percent. There are still several challenges in Sweden in achieving gender equality and the full enjoyment of human rights by all women and girls (UNSDGs, 2017).

At the municipal and regional levels, Sweden’s municipalities are tasked with working at their various local levels towards the achievement of the 2030 agenda. There are no national guidelines as to how Sweden’s municipalities and regions shall work towards the attainment of the SDGs. According to the Swedish political structure, Sweden’s municipalities and regions are extremely autonomous and each region or municipality must develop and own their own plans for the attainment of the 2030 agenda, taking into consideration, local realities.
5.2. Jonkoping Municipality and the Sustainable Development Goals.

In Jonkoping Municipality, like other Sweden’s municipalities and regions, there is a common mission to work with the 2030 agenda. Jonkoping Municipality have its own plan for the working to achieve the sustainable development goals. The work with Agenda 2030 is carried out in different ways and there are different departments that are responsible for ensuring that the strategies put in place for the achievement of the 2030 Agenda are followed through with.

While each department is focused on the goals relevant to their respective department, there is also collaboration across departments. This is because the three pillars of sustainable development and the sustainable development goals associated with those pillars are interrelated and interconnected and must be given equal importance. Furthermore, goal number 17, partnership for goals, reinforces the need to work across the board, not leaving anyone behind, for the successful implementation of the 2030 Agenda. This cross collaboration and partnership is represented in the interviews that were made during data collection.

Within the Municipality, interviews were conducted with different stakeholders across seven departments as follows: The research community or the academia or Jonkoping University had two interviewees, Professor Tomas Mullern and Dr. Duncan Levinsohn, who are mainly specialized in social innovation research. Within Jonkoping Municipality, itself, there were three interviewees; Aså Thorne Adrianzon, Head of Development and Sustainability Unit, Gender Equity Strategist; Stefan Lind, Head of planning at Jonkoping Municipality; and Tommy Josefsson, Integration Strategist, Development and Sustainability Unit, Jonkoping Municipality. Beside these three representatives who work directly within the Municipality, there was also one interviewee, Henric Wahlgren, who does not work directly with the Municipality. Henric is Project Leader, Sustainable Development, Södra Munkjön Utvecklings AB. Södra Munkjön Utvecklings AB is a company fully owned by Jonkoping Municipality, and the company oversees the development of the new neighbourhood located at the Southern end of the Lake Vatten. And finally, Jeannette Rosen, Project Leader for Coompanion, Jonkoping.
From the interviews, it was gathered that the Municipality is involved in work that is aimed at meeting the targets of all the sustainable development goals, across all three pillars of sustainability. For example, within the environment, the focus is on restoring and preserving water and nature, improving air quality in the city centre, and creating a non-toxic environment. In the energy and transport sector, the focus is on strengthening the use of renewable fuels, use of cars running on renewable energy, produce electricity and biogas locally. And within the housing and urban development sector, the focus is on creating more attractive public transport, promote pedestrian and cycle traffic, building the city in a sustainable way.

Across these goals and targets, there is cooperation and collaboration with various stakeholders. For example, the department responsible for the development of the sketch of Jonkoping in the long-term, according to its head, is working in collaboration with Pacescape AB, a consulting and research firm that carries out partnership and research work in collaboration with the KTH Royal Institute of Technology. The role of the consulting firm is to look at the sustainability aspect of the sketch and give recommendations and advise. The Municipality also does consultation with private companies, organizations, and civil society, to get their perspective on how they think the Municipality should look like in the next, say thirty years.

It was also gathered during the interviews that, the Municipality, like at the national level, is making more progress with the economic and environmental goals than with the social goals. It is in this backdrop that this research will be focused on social innovation and social sustainability in terms of the kind of findings to present and analysed. It was found that there are a couple of ongoing innovation projects that are geared towards social sustainability but two of them are outstanding and in the following sections that will be the focus.

5.3. Building the Bridge Innovation Concept

A lot is happening in Jonkoping in terms of social innovation. The University, especially the Jonkoping International Business School and the Health school, together with Coompanion, and other stakeholders such as arbetsformedlingen, the municipality, lansstyrelssen and other private companies and members of the civil society, are working on several projects within social innovation in the municipality.
One prominent project, called Building the Bridge, is a social innovation cooperation concept that involves, as said earlier, the collaboration between the Jonkoping International Business School and the School of Health, at Jonkoping University, Jonkoping Municipality, the organisation called Coompanion, Arbetsformedlingen, Lansstyrelsson and other private companies and civil society. Led by Jonkoping University, the project is doing research work to identify how long it takes for an immigrant from outside the European Union, from when they arrive Sweden until they get a job. The findings show that in some cases, it takes up to 8 years for some immigrants to enter the Swedish job market.

The project recognizes five phases in the integration process that immigrants go through and, in each phase, identify the actors involved. The project looks at who are the actors involved in each of the five phases and what role they play to support integration. The initial process shows that there is a lack of collaboration among people involved in different phases. The project also involves a process called the validation of competencies, whereby, the School of Health at Jonkoping University, in collaboration with Coompanion and the municipality work together to validate the qualifications that immigrants come to Sweden with from their home countries, and qualifies them to Swedish qualifications, making them available to potential employers.

5.4. The Circular Centre Innovation Initiative.

The circular centre innovation initiative is a social, work-integrating company and is informed on the concept that the world is only 8.7 percent circular. This means that most of what we consume is thrown away, turned into waste and goes on to harm the environment. Their vision is zero people in exclusion and zero residual products in society.

Among other things, the circular centre transforms individuals’ and companies’ waste products such as clothing and furniture into new, sustainable material; while at the same time, creating jobs for those who have the most difficulties joining the job market, such as refugee women and other women with a foreign background. Circular centre believes that entering the Swedish job market can be difficult, especially for those who do not have any education or qualification. They facilitate social inclusion and sustainability through the following ways:

- Practical work training in sewing, kitchen, restaurant, cafes, shop and conference activities.
• Parental support, homework help, and leisure activities for the women’s children.
• Guidance, competence development, coaching, and supervision.
• Language teaching.
• Drivers licence support, among others.

The circular centre works in collaboration with the following partners: Studieförbundet Bilda, Leader Västra Småland, IKEA Torsvik, Jonkoping University, ROL AB, Science Park Jonkoping, Women Can, CSR Småland, Individual Human Aid, Business for inclusion, RedCapes IT, VSM Group, RekoSund, and FRIEND Sweden.

6. Analysis.

In this section, the analysis of the findings shall be done using the Quadruple Helix Model of Innovation Cooperation. First, a recap of the Quadruple Helix Model as the framework for the research analysis shall be made, including a brief revisit of the criteria set in the theoretical framework. Then the two sets of the innovation activities shall be analysed.

As mentioned earlier, during the data collection process, the research found that there are several innovative activities that are happening within the Municipality, but the two findings presented in sections 5.3. and 5.4. above stand out in terms of the criteria the research set in the analytical framework section.

6.1. The Quadruple Helix Model revisited

To recap, the Quadruple Helix Model of Innovation is an innovation cooperation between the academia, industry, public authorities, and the civil society. This kind of an innovation model is well suited for analysing social innovation. This is because, unlike the Triple Helix Model that almost exclusively involve the academia, industry and public authorities, the Quadruple Helix Model perspective include the civil society as an active helix in the innovation cooperation environment. In fact, the kind of innovations that emerge from the Quadruple Helix Model activity are often geared towards providing better services for the good of society.

Increasingly, industries continue to see the growing need to actively engage with the civil society, not only for the sake of getting feedback about product and service innovation, but to also give back to society by supporting the provision of public goods and services. In this
perspective, the civil society are not just passive consumers but are as well, active determinants of the kind of services that are provided to them. Afterall, firms that engage with civil society are likely to develop a good reputation and earn their trust.

The kind of services that firms can engage with the civil society to provide include, cleaner environment, cleaner air, better employment conditions, better health services, among other. These kinds of cooperation can take place through several channels, include trade and labour union representatives, churches, community representatives or even directly with specific communities are the service is targeted at.

The same can be said of public authorities, which cooperation and engagement with the civil society has a long history, stemming from the so called the social contract, which establishes a mutually beneficial relation between the government and its citizens, where one party elects its representatives on the promise the other party delivering public services. But at times, the social contract gets broken and public authorities fail to deliver on their own part of the contract, especially in societies with weak democratic institutions.

Furthermore, some needs of the public may miss the attention of public authorities since the civil society was never properly consulted. Until recently, the common channel of cooperation has been through representative governments. But due to the increasing attention given to sustainable development, the way public authorities engage with the civil society is increasingly changing as well. The nature of sustainable development requires that we engage in more innovative ways of doing things and this kind of innovation requires the invaluable knowledge of the civil society.

While analysing the findings, the criteria that shall be taken into consideration include the initiators or owners of the innovation, the actors involved in the innovation and in which helix they belong, the roles of the actors in each innovation and the possible kind of activities that are taking place within each set of the innovation.

6.2. The Building the Bridge Innovation Setting

6.2.1. Public Sector-centred innovation setting

Building the Bridge innovation is a public sector innovation setting because it is aimed at a better provision of public goods, which is social equality and social inclusion, to be obtained
through building an inclusive labour market. The innovation is based on new research knowledge conducted by Jonkoping University, which found that it sometimes take an immigrant, up to eight years from the time they get to Sweden until the time they get a new job. The research also found that, that length of time differs between men and women, with women taking longer.

6.2.2. The initiators, ownership, and drivers of the innovation.

In a public sector-centred innovation setting, the innovation may be initiated by public authorities, firms, or academia. This innovation initiative is initiated by the Jonkoping University, specifically, the International Business School and the School of Health, in partnership with Jonkoping Municipality. The innovation is owned by the university, in partnership with the Municipality. This kind of innovation can be characterised as designed for users because users do not play an active role in the initiating and development phase of the innovation but it is expected to deliver a better public good, which a more equal society. The motive behind the innovation is the problem of social inequality, specifically, inequality in the job market for immigrants in the Municipality and the need to create an inclusive job market. The innovation began when the University, along with the Municipality, invited stakeholders such as the Swedish employment agency, county administration board, and other agencies and the civil society, to an initial consultation setting to find out what the most pressing problem was. And the outcome was a common consensus that there is a problem when it comes to integrating immigrants from outside the European Union into the Swedish job market.

6.2.3. The main innovation activity or outcome

The main outcome of this innovation cooperation is what is called ‘The Validation of Competencies. One of the ways that was initiated to ease the entry of immigrants into the Swedish job market is to validate their competencies. That is, if an immigrant comes to Sweden with some qualifications, those qualifications can be assessed and given a new qualification based on the Swedish grading system. Those new qualifications are then put into the Swedish job market for employer to see and possibly hire.
6.2.4. Main actors involved in the innovation.

The Building the Bridge innovation setting involves the academia, which is Jonkoping University, public authorities, which is the municipality, the civil society, and representatives of industry. The university provides the research environment and carries out the research regarding unemployment. It also serves as a training centre for any eventual training that may be needed. The municipality’s proactive presence and its ability to facilitate a meaningful partnership with stakeholders has helped propelled the innovation so far.

![Building the Bridge innovation/Public sector-centred innovation setting](image)

**Fig. 8. Building the Bridge innovation/Public sector-centred innovation setting**

Figure 8 above shows the Building the Bridge innovation setting and the various actors involved in the innovation. The centre of the circle depicts the main idea of the innovation, which is to build a bridge between the time an immigrant arrives Sweden until when they get a job, or in other words, to reduce that time gap. The outer circles are the actors who are involved in the innovation setting and their possible roles. The circle on the downer side of the setting has a slightly different shape, indicating that it is a public sector-centred innovation setting.
6.3. The Circular Centre Innovation Setting.


The circular centre is a civil society innovation setting because it is developed and owed by members of the civil society to provide recycling solutions and by so doing, create employment, especially for refugee and other disadvantaged women. It is an innovation that is targeted at solving the problem of sustainable consumption through recycling, and by so doing creating jobs. In the civil society innovation setting, the focus is the development of innovation that is relevant for citizens.

6.3.2. The initiators, ownership, and drivers of the innovation.

The innovation is initiated and owned by the circular centre. Even though the civil society is at the centre of this innovation, the outcome of the innovation is based on knowledge from the civil society, university, public authorities, and firms. In this innovation, the civil society is actively involved from initiating to its development and therefore could be characterised as designed by citizens. In this innovation, the role of the municipality, university, and firms is to support the civil society in their innovation activities in various ways. What drive the innovation is to create a more sustainable society through recycling and job creation for those who find it hard to get into the job market.

6.3.3. The main innovation activity or outcome.

The main innovation activity of this innovation setting is in three dimensions. The first is creating a more sustainable community through the recycling of used products, both from
private citizens and companies and the resale of the products to generate income. To put things in perspective, according to the Circular Centre website, to produce a cotton T-shirt requires the use of approximately 2700 litres of water. So each time a used T-shirt is recycled and re-used, 2700 litres is saved, and that quantity is as much water as one can drink in three years. The recycled clothes are used partly to produce training wears, which, by extension, promote healthy living. In this way, the circular centre promotes sustainable consumption and sustainable production, a cleaner environment and healthy living. The second dimension is pinned in the fact that, in recycling, jobs are created for the most disadvantaged in the job market, especially refugee women and women from other backgrounds. The third dimension is that recycled food is used to produce organic food, which is sold in their own shop.

6.3.4. Main actors involved in the innovation.

The circular centre involves as innovation partners, Jonkoping University, Science Park, Jonkoping, Studieförbundet Bilder, IKEA Torsvik, Business for Inclusion, among others. Jonkoping University, the Science Park and Studieförbundet constitute the research and training community or the academia, IKEA represents the industry or firm, and its role is to provide training and some of the materials used in recycling. They also help to sell some the products that result from the recycling such curtains. The Municipality serves as the facilitator and promoter of the public private partnership that is needed in the innovation.
Fig. 9. The circular centre innovation/Civil Society-centred innovation setting

Figure 9 above shows the circular centre innovation setting and the various actors involved and their roles. The centre of the figure depicts the main idea central to the innovation, which is to create a more sustainable, equitable, and inclusive society through the recycle of used products and through creating employment for refugee and other disadvantaged women. The outer circles represent the possible partners who are involved in the innovation cooperation environment and their possible roles. The circle down of the figure is made to have a slightly different shape, indicating that it is a civil society-centred innovation setting.

7. Conclusion.

In this section, the question of whether the findings and the analysis answer the research questions will be presented. This section shall also make a brief recommendation as to what can be done to better contribute to innovation for sustainable development.

The research findings and the analysis point to the conclusion that there several kinds of innovation taking place within Jonkoping Municipality that targeted at social sustainability and by extension, acting as synergies to the other dimensions of sustainability. The circular
centre provides a good example of such an innovation in the sense that it targets not only some of the goals located within the social sustainability pillar of sustainable development, it also targets even some of the economic and environmental goals. Some of the goals located within the social sustainability pillar of sustainable development that the innovation targets include, social inclusion, reduced inequalities, decent work, gender equality. Some of the other goals targeted that are not within the social dimension of sustainable development include goal number 12, responsible consumption and production, goal number 8, decent work, and economic growth. Last but not the least, the innovation involves goal 17, partnership for goals. The fact that the circular centre also targets goals located in the economic and ecological dimensions of sustainability shows how achieving one goal can act as synergies to other goals.

Looking at the Building the Bridge and the Circular Centre innovation settings, one can conclude that the second research question is answered affirmatively. Within that innovation setting, one can find all the actors involved in the Quadruple Helix Model of Innovation. The Circular Centre, for example has the civil society represented by several different organizations such as FRIENDS Sweden, Women Can. The Circular Centre itself is a civil society innovation setting. Jonkoping University is also a stakeholder in both innovation settings, and their role is to provide research and training. The Municipality represents the public authorities and they serve as partners and facilitators.

Based on the data gathering process and the findings, the research recommends the strong need to engage more with the different stakeholders in the drive to achieve the 2030 agenda and one of the ways to do that is adopting news ways of communicating the idea of and sharing knowledge about sustainable development. In other words, we must be more innovative in the way we share knowledge because knowledge is crucial for attaining the sustainable development goals.

The idea of innovation includes, getting through to people new knowledge that changes their way of thinking and doing things. These changes in our way of thinking would then affect how we eat, how we conduct our businesses, how we perceive what we think is valuable, how we look at our environment. It is all about those who have the knowledge, and how they pass that knowledge in ways that alters shifts conventional ways of think and doing things to new ways of thinking and doing things that is aligned with sustainability.
The whole idea about innovation as it relates to sustainable development is that we must change the way knowledge about sustainability is transferred. Knowledge related to sustainability needs to be communicated in ways that those who communicate it do not make any claim of sustainability in their communication or appear to trade it or show the impression that they are trading it for any political claim. Instead, it should be passed on in ways that makes people feel the direct benefits of sustainability to them, without even knowing that it is all about sustainability and it should be localised as well. In communicating language, the recipients should be able to understand how a change of behaviour would directly positively impact their normal lives.

Knowledge that drives changes in behaviour and the effects of those changes must be localized to the extent that people develop that close relationship with their surroundings in ways that locally drive positive change. For example, if you are leading a project to build a sustainable neighbourhood there is an option to ask the following two questions: How many of you want a sustainable neighbourhood? and how many of you want a neighbourhood that everyone would live happily in a clean and healthy environment? The latter question would likely generate more positive responses than the former and you can then follow up with question about what exactly people think would make them happy and healthy in the neighbourhood.
References.

Books


https://academic.oup.com/humrep/article/31/3/498/2384737

Journals and Articles


https://www.tandfonline.com/doi/abs/10.1080/15487733.2012.11908080


https://doi.org/10.1186/S40852-017-0062-3


https://doi.org/10.1002/sd.1921


Websites


Sustainable development goals knowledge platform: Future We Want - Outcome document. Available at: https://sustainabledevelopment.un.org/rio20/futurewewant


Sustainable development - Agenda 2030 at Jonkoping Municipality. Available at: https://www.jonkoping.se/kommunpolitik/hallbarutvecklingagenda2030.4.58993e8f166e835ab80a48.html. Accessed: 2020-08-22