Iuliia Volchkova

Exploring the Role of Youth Engagement in the Circular Economy

The Case of ReStore, Trondheim

Master's thesis in Globalisation and Sustainable Development
Supervisor: Amalie Østhassel
Co-supervisor: Ståle Angen Rye
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Norwegian University of
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Abstract

Transitioning to a circular economy is one of the ways to a sustainable future. Nowadays there is much concern about CE transition. In order to contribute to the environment and economy, various innovative technologies and business models were designed and developed, new approaches to management were implemented. However, the social dimension seems to be left behind. This thesis aims to explore youth engagement in the circular economy in Trondheim, Norway. Moreover, it attempts to understand how the youth initiatives, motivation and empowerment are related to their engagement in the circular economy practices and how the circular economy can utilize the youth participation. The research is conducted as a case study; the studied organization is a student non-profit organization that seeks to reduce waste. The research implements a qualitative single-case study approach. Observation method, semi-structured interviews and document analysis are employed for this study. The results of the study identified what drives the youth initiatives and what involves the youth in circularity in Trondheim. The findings of the study suggest that the youth in Trondheim is involved in various projects that adopt the principles of circularity. Also, the results show that there are mutually beneficial relations between the circular economy system and youth engagement. Furthermore, the findings indicate that the extent of the youth evolvement into the circularity activities influences the youth empowerment. The youth can benefit the government and business sectors in sooner transitioning to the circular economy and should be encouraged to develop the ideas for the circular solutions.

Dedication

In memory of my father. I know you would be proud of me.

Acknowledgement

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AGM	Annual General Meeting
CE	Circular Economy
CEP	Circular Economy Package
C2C	Cradle to Cradle
EU	European Union
EMF	Ellen MacArthur Foundation
NTNU	The Norwegian University of Science and Technology
SDGs	Sustainable Development Goals
TBL	Triple Bottom Line
4 R's	Reuse, Repair, Recondition and Recycle

1   Introduction

1.1 Research problem

The topic of the circular economy (CE) is an emerging trend in academia. Over the past decade there has been a dramatic upsurge in interest in this concept all over the world (Geissdoerfer et al., 2017, p. 761). Researchers indicate that there are various phenomena and correlations within the CE that are necessary to be studied. For example, the article of Geissdoerfer and colleagues offers for the future research to explore the relations between the CE and new business models like benefit corporations. Another suggestion is to study the effects of the CE against the Triple Bottom Line framework (Geissdoerfer et al., 2017, p. 767). The social dimension of TBL is the one that needs more attention. The individuals within CE are not studied extensively even though transitioning to CE is challenging without involvement of all actors, including individual ones (de Jesus & Mendonça, 2018).

The understanding over the importance of youth engagement in the CE is growing and increasingly acknowledged by many researchers. For example, Liu and Ramakrishna in "An introduction to circular economy" note that based on the opinions of 66 multidisciplinary researchers from different countries, youth leadership is seen as one of the main aspects of the CE (Liu & Ramakrishna, 2021, p. 14). It is argued that youth agency and initiatives are one of the drivers of any development and apparently very important for sustainable development. And since the CE lays within sustainable development and complies with it, it means that youth engagement is one of the drivers of circular economy too.

The youth perspective and experiences are different from other generations. They are an important actor within CE and their engagement is a significant aspect for CE transitioning. However, there is a literature gap on the youth involved in the CE activities. Therefore, the youth within CE practices should be investigated closely.

1.2 Study Objectives and Research Questions

The objective of the research is to study the engagement of the youth of Trondheim within the CE. To be more specific, relation between CE and such concepts as youth motivation and youth empowerment will be investigated. In order to conduct the research, the student organization "ReStore" in Trondheim will be used as a case study.

The following questions were posed to explore the presented research problem:

1. What are the drivers of youth initiatives for circular economy in Trondheim?
2. How is the youth involved in the circular economy in Trondheim?
3. How can circular economy utilize youth engagement and how does this engagement empower the youth?

1.3 Scope and Significance of the Research

The study is limited to the CE activities and initiatives of the youth residing in Norway, Trondheim. Therefore, the researcher attempts to gain a better understanding of how the youth is involved into circularity practices and how it influences youth motivation. The focus will be on youth motivation and youth empowerment within CE and its relation to transitioning towards CE system.

The research significance lies in an attempt to add to the academic literature focused on youth engagement in the CE. Moreover, it describes an organizational model that uses CE principles.

1.4 Structure of the Thesis

The thesis is structured as follows: Chapter 1 introduces the research objectives, questions and significance of the study. Chapter 2 presents the literature review and theoretical concepts that relate to the research. Chapter 3 covers the methodology and methods that were

used by the researched in order to conduct the research. Chapter 4 presents the details on data collection, case and sample selection. In Chapter 5, the empirical findings are presented, which is important for the better understanding of the research results. Chapter 6 consists of the analysis of the collected data. Chapter 7 concludes the thesis by answering the research questions and suggesting direction for future research.

2 Literature Review

This chapter will start with presenting a brief historical overview on development of CE and its critiques, relations between Sustainable Development, SDGs and CE. Moreover, literature on youth engagement within CE will be studied and such concepts as motivation, agency, structure and social change will be investigated. Therefore, this chapter will describe the theories and concepts that relevant to this research.

2.1 Circular Economy

The first mention of CE principles was published by Kenneth E. Boulding in 1966. In his article "The Economics of the Coming Spaceship Earth" he does not use the term "circular economy", but he presents his theory of a "spaceman" economy. This economy is described as a closed system, where "all outputs from consumption would constantly be recycled to become inputs for production" (Boulding, 1966, p. 5). In Boulding's opinion, production and consumption are not desirable and should be minimized, He criticizes economists who believe that such economic measurements as Gross National Product and Gross Domestic Product are adequate to evaluate prosperity. Boulding argues that economic success is measured by "nature, extent, quality, and complexity of the total capital stock, including in this the state of the human bodies and minds included in the system" (Boulding, 1966, p. 8).

At the same time, the President of the American Association for the Advancement of Science was promoting the understanding of the closed system where the waste must be recycled, water - reused and so on (Spilhaus, 1966). In 1970 Spilhaus uses in his article such keywords as "solid-waste", "ecological balance", "loop from user to factory" (Spilhaus, 1970). These above mentioned articles popularized the ideas of recycling, cyclical systems, natural ecosystems, and made a basis for further development of well-known economic concepts like cradle-to-cradle, upcycling, sharing and so on.

The idea of loops was expanded on by Walter Stahel in 1982. In his Mitchell Prize winning paper "Product-Life Factor" he explained and justified the benefits for private sector to transition to the product-life extension system. As we can see in the Figure 1, he presented

"the self-replenishing economy built on a spiral-loop pattern", where four loops are "REUSE, REPAIR, RECONDITIONING and RECYCLING" (Stahel, 1982, p. 72). The 4 R's, that were called so by John Davis, as the author states, befitted the Stahel's product life extension model. Stahel discussed the obstacles of becoming a sustainable society, and amongst all the economic and technical aspects he also gave attention to the matter of psychological obstacles within people (Stahel, 1982, p. 95).
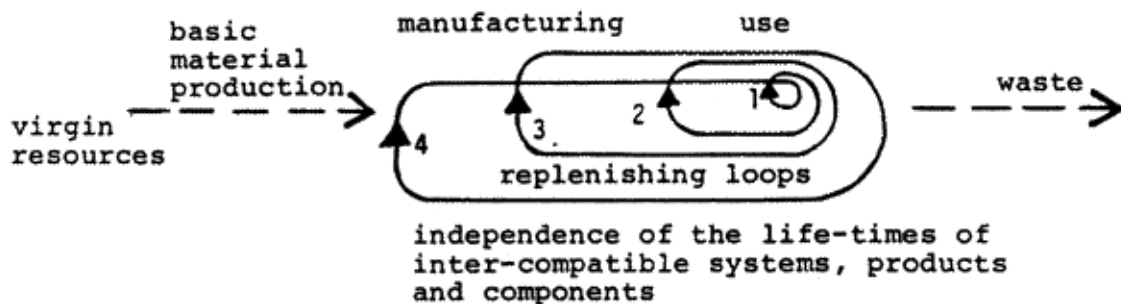
Figure 1. The Self-Replenishing System (Product Life Extension).
Where 1 – reuse, 2 – repair, 3 – reconditioning, 4 – recycling. Source: Stahel (1982), p.74

A significant publication that supported the necessity of circularity is the report by the World Commission on Environment and Development called "Our common future". Despite the fact that it does not reference CE explicitly, it still talks a lot about sustainable development and justifies the reasons to take actions towards new approaches of development (Brundtland, 1987). Since the circular economy is one of the means to achieving the sustainable development, I consider this report important not only for the sustainable development but also for CE. The significance lies in the fact that "Our common future" moved the discussion on sustainability to the global level and made this issue visible internationally. To be more specific, it voiced such problems as the lack of cooperation among institutions and irresponsibility of producers at both national and international levels (Brundtland, 1987, p. 10).

In 1990, Pearce and Turner presented a so-called full picture of "the circular economy" (Pearce & Turner, 1990, p. 40) which at that time was revolutionary and illustrated the closed circular system not the linear one. Notably, Pearce and Turner used the term circular economy and presented the concept of "closed and sustainable system" (Pearce & Turner, 1990, p. 38). Later, in 1993, they developed the sustainable development theory and provided "the framework for general sustainability rules" (Turner et al., 1993, pp. 59-61).

After the works of Pearce and Turner, there were not so many studies on CE. The academic interest seemed to move to sustainability, for instance, Ekins, Pearce and others' published the works focused on sustainability (Ekins & Max-Neef, 1992) and the topic of CE was almost neglected for more than 20 years. Of course, there were publications that touched upon CE, however those ones had not given further theory development. Papers of such researchers as Benyus, Erkman, McDonough and Braungart did not cover and name the concept directly, but were based on CE principles and eventually made a contribution to the development of CE studies. For example, Paul Ekins came up with such terms and concepts as "ecocapital", "ecocapital cycle" and "nature's no waste economy" (Ekins et al., 1992, pp. 50-51), however he never used term 'circular economy".

Biomimicry theory is developed by Benyus. It is based on the concept of nature. Nature is seen as a model, measure, and mentor. Biomimicry in general presents a nature-centered approach that uses nature's structures and designs and reconstructs them artificially for solving human problems in all possible fields. If we move to economics and CE, we can note that the author mentions an example of how biomimicry works for the economy too. For example, she talks about "a closed-loop economy that takes its lessons from red-woods, coral reefs and oak-hickory forests" (Benyus, 1998, p. 3).

William McDonough and Michael Braungart were the first who offered to divide the CE model into two different cycles, they differentiated the biosphere from technosphere. Figure 2 presents the CE systems diagram which is developed by Ellen MacArthur Foundation and based on the cradle-to-cradle (C2C) model by McDonough and Braungart. This elaborated on into the C2C concept, whereby waste does not exist. "To eliminate the concept of waste means to design things-products, packaging, and systems from the very beginning on the understanding that waste does not exist" (McDonough & Braungart, 2002, p. 104).

The Ellen MacArthur Foundation (EMF), established in 2010, drew attention to CE in 2013 by publishing the report "Towards the Circular Economy". This report presented a framework of CE, promoting the idea that the implementation of CE is vital and viable, and described methods of transitioning from a linear economy towards a circular one (EMF, 2013). Finally, the EMF was the first who explicitly defined the CE (EMF, 2013, p. 7). This paper mostly justified the benefits for businesses to switch to the circular model and, therefore, popularized CE among the business community.
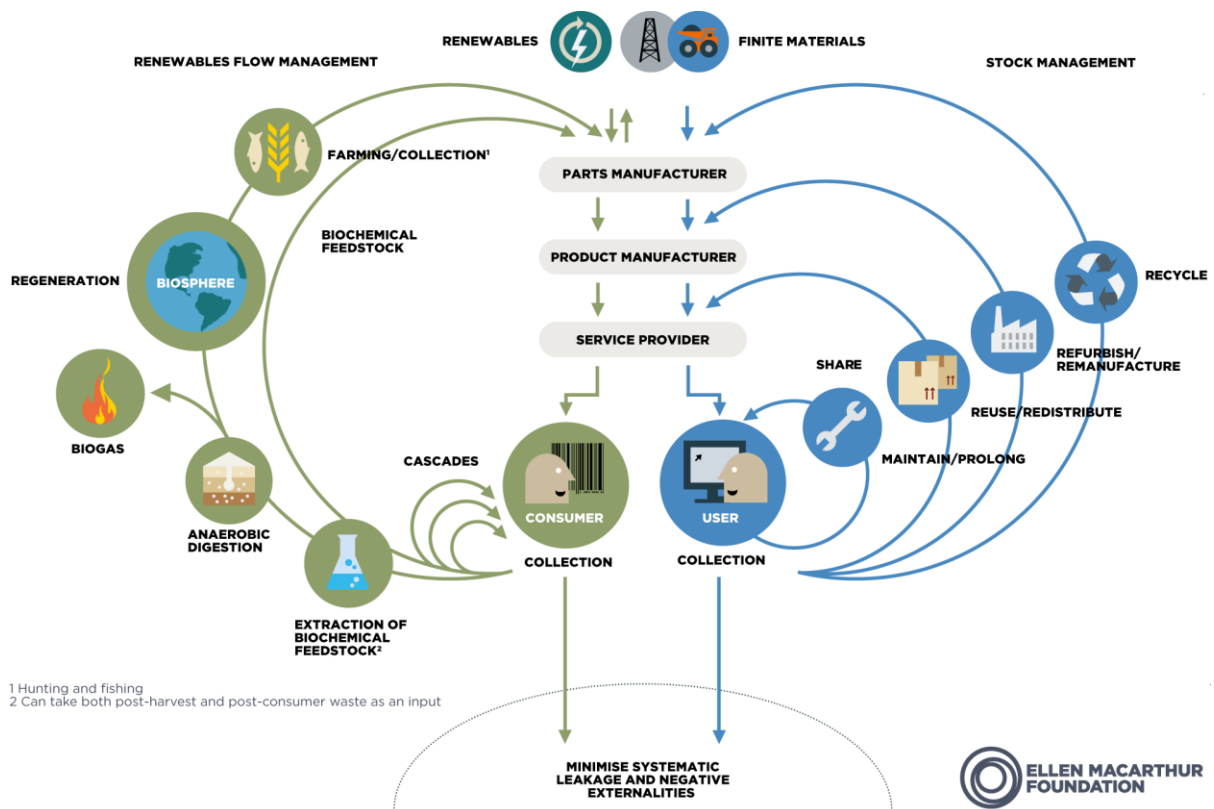
Figure 2. CE system diagram based on C2C by Braungart and McDonough.
Source: Ellen MacArthur Foundation

In 2015, the idea of CE was also promoted in politics with the publication of the Circular Economy Package (CEP). This was a legislative document developed by European Commission. The CEP introduced the steps to reducing waste and establishing waste management and recycling processes (*CIRCULAR ECONOMY PACKAGE*, 2015). This document paved the way for further development of CE initiatives, like the launch of action plans globally, in particular, within EU.

The EMF defines the CE as "a systemic approach to economic development designed to benefit businesses, society, and the environment. In contrast to the 'take-make-waste' linear model, a circular economy is regenerative by design and aims to gradually decouple growth from the consumption of finite resources" (*THE CIRCULAR ECONOMY IN DETAIL*). Also, the EMF mentions the importance of differentiation between bio and techno spheres within circularity. Simply put, it is seen as restorative and regenerative by design economy.

2.2 CE and Sustainable Development

At first sight, it can seem like the CE and sustainable development are interconnected and fully aligned with each other. However, many authors note that this is not true.

Sustainable development lays upon sustainability of three different areas. This is also known as Triple Bottom Line framework, which is shown in Figure 3. So if economic, social and environmental dimensions are equally taken into consideration, then this can be called sustainable development. The same framework is not going to fit for the CE. According to comparative analysis between sustainability and CE made by Geissdoerfer and colleagues, the sustainable development is prioritizing the horizontal system of the Triple Bottom line, whereas CE has primacy over hierarchical economic system (Geissdoerfer et al., 2017, p. 765).

Naturally, the economic dimension (prosperity) is the central focus of CE. The environmental dimension (planet) is also considered within circular concepts, which is logical as the CE was introduced in light of the scarcity of natural resources. In spite of the fact that some of the definitions of CE mention that it is designed to benefit society, not all of the CE concepts cover the social dimension (people). The study conducted by Geisendorf and Pietrulla shows that almost half of the studied circular economic concepts did not include the social aspect (Geisendorf & Pietrulla, 2018, p. 777). Also, as Geissdoerfer and colleagues point out, society mostly benefits from the implementation of CE indirectly through the improvement of the environmental conditions (Geissdoerfer et al., 2017, p. 765).
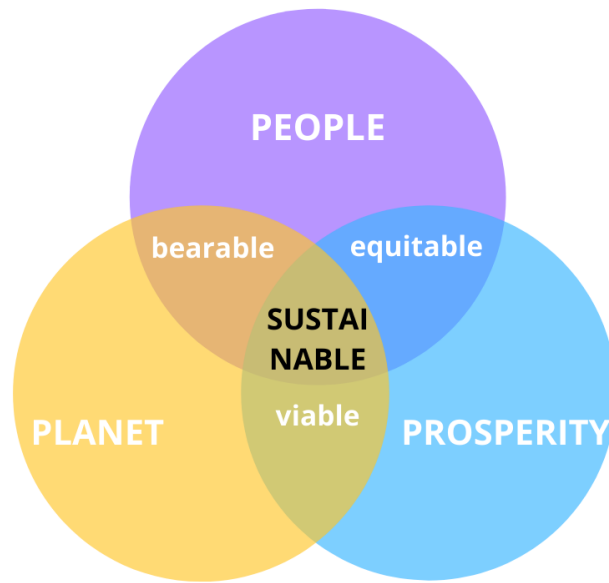
Figure 3. Triple Bottom Line

2.3 Critiques of CE

It is seen from the previous sections that the CE, as well as sustainable development, are interdisciplinary concepts. This means that to transit to the CE model, it is necessary to work towards it in different spheres. As it was mentioned before, most of the publications on the CE concept are focused on the business sector and address business actors. It usually tries to describe the benefits and economic advantages that businesses can gain from implementing the CE business models (EMF, 2013). The political field is also more or less covered by various international and national plans to achieve circularity and sustainability, the most significant of which is SDGs ("General Assembly resolution 70/1. Transforming our world: the 2030 Agenda for Sustainable Development," 2015).

The social dimension of the CE is the one that lacks scholars' attention (Murray et al., 2017). To be more specific, CE is not studied enough from the perspective of individuals. People's motivation to engage with the circularity processes is an essential aspect for transitioning to the CE model. Transition is a change from one state to another. Change in the economic system – like any other system change – is possible if there are changes in all three spheres of transformation, as illustrated in Figure 4. These are the practical, political and personal spheres (O'Brien, 2018). According to Meadows, the personal sphere has the biggest

leverage over the system transformations (Meadows, 1999). Also, it is assumed in European Environment Agency report that the measures developed to address "greater leverage points may have a larger impact on outcomes" (EEA, 2017, p. 37). It means that the personal sphere change eminently influences the system change. Therefore, studying personal motivations can help the policy-makers, businesses and other actors to find the solutions to encourage individuals to be a part of CE processes or even to initiate such processes, the result of which will be a more effective and faster transition to the CE.

There are many circular business models presented for the closed cycle of various production at the point when the transition stage is already achieved. So, the CE model works well when all the components and processes of production are already designed as circular. But in reality, there are still items produced with old technologies and these items cannot be incorporated into the closed loop processes. For example, as some scholars note "materials are lost or degraded even in "recycling" because cars are not designed from the beginning for effective, optimal recycling as technical nutrients" (McDonough & Braungart, 2002, p. 98). Notably, there are different sustainable business models developed, the purpose of which is to fill in the process of the transition from a linear economy to a circular one (Evans et al., 2017; Geissdoerfer et al., 2018). Unfortunately, the implementation of sustainable business models is challenging, it has low success rate (Geissdoerfer et al., 2018).

2.4 Youth engagement within CE

The reviewed literature is mostly studying top-down CE development (Kalmykova et al., 2018, p. 104), thus it is evident that bottom-up CE development needs better coverage in academic field. It is notable that bottom-up movements are not getting a lot of attention in general, for example, in the area of climate change (Leichenko et al., 2019). Moreover, the focus of the CE literature typically lies within the business and tech areas (Hobson, 2016) , with business and government sectors assumed as major actors (Van Buren et al., 2016). Hence, it follows that CE literature pays little attention to the study of CE from different perspectives. For example, individual actors within CE represent a very important aspect of transitioning to CE models (de Jesus & Mendonça, 2018), however their role in it is not researched extensively (Maitre-Ekern & Dalhammar, 2019). Therefore, this study is going to observe the CE concept

from the perspective of the youth who participate in bottom-up CE initiatives to different extents.

There are few academic publications in the CE on youth engagement or initiatives. The problem is that the individuals, in most of the literature, are perceived as consumers or users, which deprives individuals of agency. This point is also raised in the study that observed the Finnish young adults' perception of CE in everyday life (Korsunova et al., 2021, p. 760). Anyway, some of the works can be found in the related fields like waste management. For instance, these studies investigated the youth behavior towards food waste (Mondejar-Jimenez et al., 2016) and higher education student's attitude to the management of solid waste (Owojori et al., 2022).

The political sphere shows more interest in the youth involvement in the CE. The importance of cooperation between the young citizen and different institutions is emphasized in various reports on development and youth at the international and state levels, for instance, the World Youth Report (*Youth and the 2030 Agenda for Sustainable Development*, 2018) and the Report on the Implementation of the 2030 Agenda for Sustainable Development (*Voluntary National Review. Norway*, 2021). Those documents usually present the agenda for the youth development, for example, the EU presented The Youth Goals, some of the goals cover the youth participation and youth empowerment to be an actor of the sustainable development ("Official Journal of the European Union. C 456," 2018, pp. 15-16). Also, reports show the results of work towards that, some of them touch upon the challenges that are faced while attempting to engage the youth into being the active citizens.

There are various theories studying the agency and structure to investigate organization of society and social transformation, but this research will use the structuration theory developed in 1984 by Giddens. This theory was chosen, because of the role that social agent plays in the system. The agent or actor is seen by Giddens as a human being who commit an act based on their knowledge (Giddens, 1986, p. 26). Thus, the actor is considered to be rational and able to make decisions, and apparently to influence or change the system.

Agency is a capability of a human being to act, this action is based on the power that an actor has. Agency is not always intentional (Giddens, 1986, p. 9). Therefore, it means that sometimes actors exert their agency without any intention to be a source of the consequences, which means that some unintentional actions can still influence or change the system.

Structure is defined by Giddens as rules and resources that are involved in the system reproduction (Giddens, 1986, p. 377). Structures can vary in their time-space extension. For example, long lasting structures that are deeper embedded into system can be called institutions (Giddens, 1986, p. 17). Thereafter, agents act through the structures which results or does not result in changes in the system.

System is "the patterning of social relations across time-space" (Giddens, 1986, p. 377). Systems can broadly vary in the degree of their systemness. System can be presented by as cultural system, for instance. Giddens's systems are dynamic and quite open (Giddens, 1986), suggesting that they can transform in various ways on account of the agents' actions.
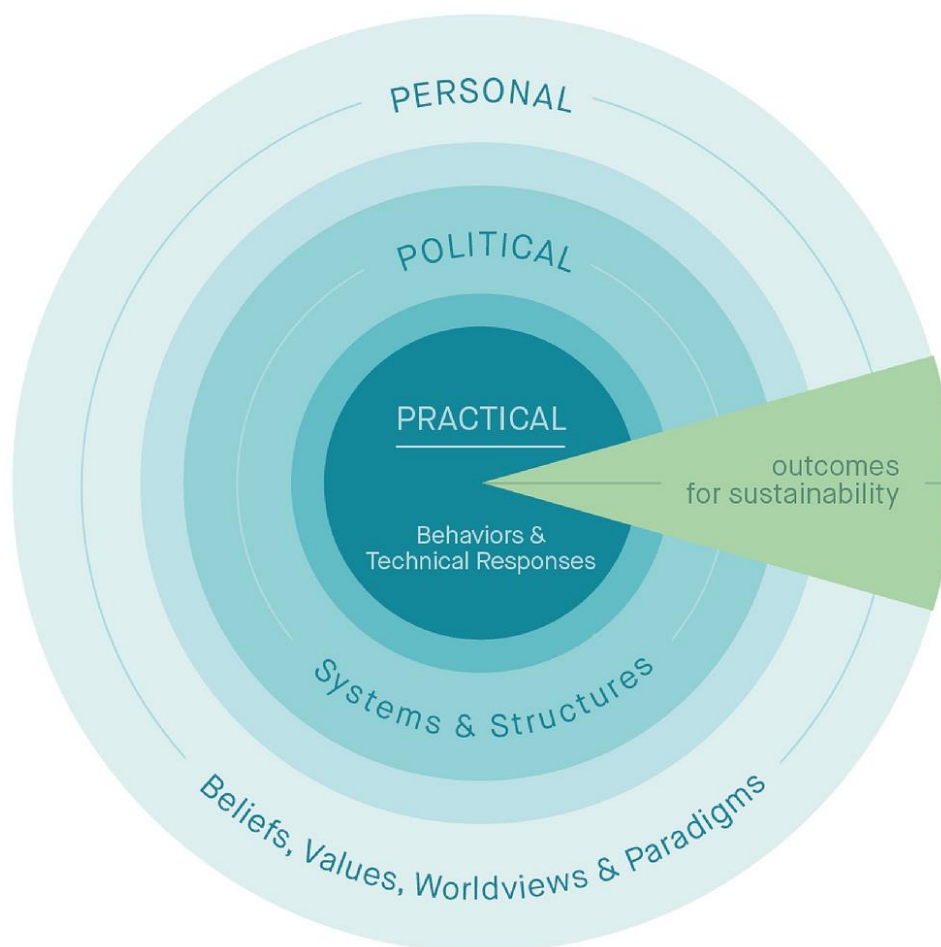
Figure 4. Three spheres of transformation. Based on O'Brien and Sygna (2013).
Source: O'Brien, 2018

Another theory that will be used in this research is the system of three spheres of transformation. O'Brien and Sygna developed this theory working on the problems of climate change. Suggesting that this framework fits the current research. This framework includes three

spheres, that are presented as three concentric circles, as illustrated in Figure 4. The core circle is a small one and represents practical sphere. The next one is the political sphere circle. And the last circle represents personal sphere. The changes in one sphere can influence changes in another, it depends on the power of the changes (O´Brien & Sygna, 2013, p. 19).

The order and size of spheres is important. As we can see in the Figure 4, the core of the transformation is practical sphere. It includes behaviors and technical responses, in other words, the measurable indicators (like Human Development index) are represented here. Within this sphere practical solutions are implemented from the innovative technologies in production to the new strategies in management. Therefore, this sphere has more attention than others and that's why it's the core (O´Brien & Sygna, 2013, p. 19). Nevertheless, the indicators that show solid performance are not enough for transformation, because according to Meadows, numbers do not give high leverage for the change (Meadows & Wright, 2008). Thus, it means that the larger structures need to be considered for the system change. This is where the attention moves further from the core to the next larger circle of the political sphere.

The political sphere includes the systems and structures. Within this sphere the agenda is set, challenges are identified and solutions are offered, which are based on the activity of social movements, lobbying, electoral campaigns and so on (O´Brien & Sygna, 2013, p. 20). Thereafter, political sphere, which is influenced by the larger personal sphere, is the one where lots of various processes are taking place. Also, those processes that have more power proceed to the practical sphere in the form of specific outcomes.

The personal sphere is the largest circle and it includes both individual and collective beliefs, values and views. Within this sphere discourses emerge and influence the content of issues that are voiced or not. That in the future will reflect on the other spheres (O´Brien & Sygna, 2013, p. 20). Moreover, the changes in the personal sphere, as was mentioned in the previous section, have much more power to change the whole system and, as a result, to achieve the transformation. It is notable that while the personal sphere has higher leverage for change, it is harder or even impossible to force the transformation here. However, the transformation in this sphere can happen by the means of education or individual voluntary motives (Schlitz et al., 2010; O'Brien, 2013).

2.5 Theoretical Approach

This study will be analyzed against the theory of three spheres of transformation by O'Brien and Sygna (2013) anchored by the Giddens' structuration theory (1986).

The main point of the tree spheres of transformation is that changes should happen in all the spheres to make a transition. Moreover, the most influential sphere is personal one, it has a bigger leverage than others. The missing aspects of the theory of three spheres of transformation, will be filled with structuration theory. For example, Giddens admits that unintentional actions of actors can cause the change in the whole system.

Moreover, such concepts as motivation and empowerment are important for this study. These concepts will be investigated within the theories mentioned earlier and will be specified in Chapter 6.

3 Methodology and Methods

3.1 Research Methodology

In order to conduct the study and answer the posed research questions the qualitative research method was chosen. First of all, this method is the one that researcher should use when the research problem can be solved by understanding personal experiences (Strauss & Corbin, 1990, p. 19). One of the aspects of this study is to understand the motives of persons' engagement and persons' feelings and opinions about this engagement. Second, qualitative method is offered when the studied phenomenon is new or it has not been studied extensively or new knowledge about this phenomenon attempted to be gained (Strauss & Corbin, 1990, p. 19). This research encounters a phenomenon of the model of organization that applies the principles related to the CE. This model was not studied earlier in the academic field, so it needs to be described. Moreover, qualitative method will allow to study this model in details, which is necessary in order to understand if this model fits the CE framework and in case it does it should be placed within the CE framework.

The nature of this research is to explore the phenomenon, which means that the researcher is interesting in the "how" of the phenomenon (Yin, 1994). Therefore, the exploratory approach is applied. This study was driven by the personal interest of the researcher. The phenomenon that the researcher encountered in the studied organization seemed inexplicable. Therefore, it was decided to use the studied organization as a case study to be able to intensively investigate it in order to understand and explain the phenomenon. Moreover, case-study methodology helps to provide particular solutions (I. M. Hay, 2016, p. 130).

3.2 Research Methods

Within qualitative case-study methodology, multiple methods of data collection will be applied. It was decided to make a two-week observation of the studied organization, to conduct nine interviews with people related to the organization and to analyze the primary documents

of the organization. All these methods together give the opportunity to investigate the case study within different dimensions and to capture the various connections and processes in the studied organization (I. M. Hay, 2016, pp. 134-135). Some researchers argue that triangulation gives additional validity to the research (Silverman, 2011).

The analysis is based on the CE systems framework of Braungart and McDonough (2002), structuration theory of Giddens (1986) and three spheres of transition framework developed by O'Brien and Sygna (2013).

Moreover, thematic data analysis was decided as appropriate for this study (Strauss, 1987). The emerging themes were derived from the studied literature, collected empirical data and personal memos that were taking during interviews.

3.3   Research Approach

It was decided that this qualitative research employs a grounded theory approach because, according to Strauss and Corbin, under the grounded approach it is possible to develop a theory inductively by studying the phenomenon of the interest. After collecting the data related to the phenomenon, it is studied and analyzed against the theoretical materials already existing in the area of the study and, therefore, the study findings are theorized and generalized (Strauss & Corbin, 1990, p. 23). In other words, the study is conducted from particular phenomenon to general theories. This approach allows to generate new knowledge and identify patterns from the studied phenomenon and not to limit the research by the existing theories.

4 Data

This chapter is dedicated to the precise description of the process of samples selection and data collection. The specific settings, conditions and details that were valid to this research will be presented below. According to King and colleagues, it is important for the researcher to mention all the bounds of the research process in order to conduct a good study that will contribute to scholarly knowledge (King et al., 2021, p. 196).

4.1 Research Settings

This case-study was fully conducted in Trondheim, Norway, where the studied organization is located. The choice of place is conditioned by the researcher's interest to understand why the youth is motivated to be involved into the particular organization and how this relates to the CE of Trondheim. At the moment of the rising interest, the researcher was a part of one of the organization's projects. This aspect has let the researcher to get an access to organization's participants, insights, documents and activities. During the research period, the researcher was not able to continue her participation in the organization's projects to the same extent. However, due to the fact that researcher is a former member of the studied organization, the participatory observation approach occurred naturally and was applied.

The organization's activities were observed during the period from 16.11.2021 to 07.04.2022, while the participants of research were interviewed from 12.03.2022 to 03.04.2022. Access to the documents, events and social media, and correspondence was maintained during the whole research period.

4.2 Data collection

For the grounded theory research approach, the role of both technical and nontechnical literature is important (Strauss & Corbin, 1990, p. 48). Therefore, technical literature like research studies and theoretical papers and nontechnical like internal documents and reports of the studied organization were collected and investigated. Moreover, conducted interviews and

observations have been the source of the collected primary data. The secondary data has been collected through the personal network, social media and internet. It consists of annual reports, meeting minutes, social media publications, photos and other documents of the organization. Such sources are useful to look into because it allows the researcher to learn more about an organization, its activities and structure, that might not be seen from the primary data (Strauss & Corbin, 1990, p. 55).

4.3   Case Study

The single case study was mostly naturally occurring approach for this research, since the main motivation was to explore the phenomenon of the youth engagement in a particular organization. Also, there was no opportunity to have other cases to be analyzed because there are no other homogeneous units that correspond with the selected organization that researcher knows of. Anyway, the single case study let the researcher to deep dive into studying the subject alone without references to the other cases. Besides that, single case-study research approach is favored in cases when phenomenon needs an intensive investigation to generate new knowledge or broaden it (I. M. Hay, 2016, p. 131). Therefore, the single case-study approach will provide us with in-depth look into such phenomenon as the youth motivation and engagement in the CE practices in Trondheim city.

4.3.1 Case Selection

The case study was selected by the researcher's motivation to investigate a particular student organization, where she was a volunteering member. Therefore, motivation came from the personal experience of the researcher.

The researcher as an international student moved to Trondheim pursuing her master's degree in NTNU. There it was found out that one student organization named ReStore announced a call for volunteers, the researcher got interested because it was her goal to start volunteering. Notably, the organization posted all the information in English, which was essential for the researcher as for a foreigner in Norway. The researcher shared organization's vision of consumption and sustainability, shortly, she became a volunteer there. At first, she was skeptical about the success of the organization, she did not think that organization's

services would be in demand. However, after some time, the researcher saw the results of the organization's work and was surprised that it was flourishing. Moreover, the researcher realized that her volunteering there was a fun and learning experience. Besides that, the work that was done was important for the environment and beneficial for students.

During the volunteering the researcher became curious about why people are willing to dedicate their time to volunteer for this kind of organization, and most importantly how these kind of initiatives are realized. Thus, the mentioned organization was selected as a case study.

4.4 Interviews

Bryman suggests that for the organizational study one of the appropriate methods is unstructured or semi-structured interviews. He advises to put less constrains for the interview process, so that respondents could communicate their idea freely. (Bryman, 1988) Therefore, the semi-structured interviews were considered more suitable for this case-study, because it allows the researcher both to avoid the situation when the interviewees start to talk about the subjects that are not studied and to be able to come up with new questions that seem relevant but not listed in the interview guide (I. Hay, 2016, p. 158).

It was important for the researcher to include the perspectives of different agents who interact with ReStore. To capture the full picture of various types of engagement it was suggested to have an interview sample that consisted of the young adults who related to the ReStore to varying degree. The degree of engagement was categorized into three groups, from people who were not engaged into the ReStore functioning to people who were founding this organization. Thus, the first group was named Users, which represents the lower degree of engagement. It included the people who did not participate in the ReStore's voluntary work but still interacted with it in order to use its service. The second group represented the people who were regular volunteers at the ReStore, this group is called Volunteers. Finally, the third group included the people who are board members, leaders or/and founders of the ReStore, this group was named Leaders. Apparently, Leaders group represents the high degree of engagement into the ReStore activities and operation. Thus, in total three groups of engagement degree were identified.

To identify the age of the young adults for this research, first, it was decided to look at the world standards of age considered to be the youth or young adults. For example, according to the EU the youth is the period of life from 15 to 29 years old (Eurostsat). According to Norway, there is no officially stated age of the youth but the Ministry of Children and Family Affairs mentioned that the youth maybe considered as life period between 12 and 29 noting that it can extend beyond 29, which depends on economic conditions of the individual (Wolf et al., 2004). However, since the researcher was aware that the median age of the participants of the ReStore is higher and their age ranges from 18 to 34 on average, this exact age gap was considered to be used. Therefore, it is important to note that the term 'young adults' in present study is referred to individuals from 18 to 34 years old.

There are no strict recommendations on the sample size for the interviews or cases or observations. However, to get a fuller picture from the interview method, it was assumed that interviewing three representatives from every group will be sufficient for the present study. Thus, nine interviews in total were conducted.

Besides the set bounds to the sample like age gap and involvement degree, the process of interviewees selection was not restricted in any way. First interviewees were reached within the personal network of the researcher; the others were identified with the help of previously interviewed. All the interviewees took part in the research voluntary and were not compensated.

The interview guide that was developed by the researcher can be found in Appendix 1. The interview guide aimed to cover three main blocks, which are respondents background, their perception of the studied organization and their engagement in the CE. The interviews were conducted online via Zoom, every interview lasted from 30 to 45 minutes. Audio of each interview was recorded and stored according to the requirements of The General Data Protection Regulation (GDPR) of Norway. Later, the interviews were transcribed into text files.

Table 1 shows all the interview participants. This table presents the interviewees' names, interviewees' degree of engagement with ReStore, their academic background, the date when interview was conducted. Moreover, it was suggested to use the pseudonyms for interviewees accordingly to their group of 'Relation to ReStore'. First of all, it is easier for the researcher to illustrate and generalize the findings. Second, it is easier for the reader to follow the analysis and discussion of the research (Heaton, 2022).

Table 1. Interviewed Participants

Interviewee	Relation to ReStore	Academic background	Interview Date	Pseudonym
Lindsay Charles	Board member	Music Communication Technology	12.03.2022	Board member
Denisse Gonzalez	User	Sustainable Energy	12.03.2022	User 1
Victoria Magda Kaplan	User	Natural Gas Technology	14.03.2022	User 2
Jhonattan Toloza	Volunteer	Reliability, Availability, Maintainability and Safety	14.03.2022	Volunteer 1
Seing Mok Lee	User	Sustainable Architecture	14.03.2022	User 3
Irhana Šehović	Cofounder/board member	Sustainable Architecture	21.03.2022	Founder
Vigdís Bergsdóttir	Leader/board member	Sustainable Architecture	23.03.2022	Leader
Ronald Reagan	Volunteer	Sustainable Energy	31.03.2022	Volunteer 2
Shaf Verani	Volunteer	Childhood Education	03.04.2022	Volunteer 3

4.5 Observations

The observation method was applied with the two main purposes. Those are to gain contextual understanding of the processes of the studied organization and to collect complementary data to the interviews. Contextual understanding is necessary for this research in order to see the context instead of making assumptions of it, interpret the motives of the observed and interviewed participants and to understand how they experience empowerment. Gaining complementary information allows to add to already collected interview data, which will contradict or justify the interviewees' points of view. Moreover, it helps in interpreting the interviewees' perception of place and, also, the interviewers can gain their own impression of the place, which may show interesting points for analysis (I. Hay, 2016, pp. 314-315).

As it was mentioned in a previous section, seeking to answer the RQ3 the researcher was trying to capture the participants' experiences of them feeling empowered. Kearns states that studying the people's experience requires deep involvement of a researcher into the studied phenomenon, which implies that participatory approach to observations should be utilized (I. Hay, 2016). Also, Bryman argues the unstructured participant observation is a prominent method to study organizations because a researcher immerses into the studied context. Moreover, the participatory observation allows the researcher to become a part of the observed place and have interactions with the participants, for example, asking questions that would clarify why the observed participant acts in a certain way in these specific settings (Bryman, 1988, p. 118). Unlike questioning during an interview, participatory observation enables the researcher to capture participants' routine behavior and connect it with their feelings and thoughts (I. Hay, 2016, p. 318). Besides that, it can reveal some aspects of the place that are not spoken of during interviews due to various reasons like interviewees are being shy or not aware of significance of their routine and so on.

It was decided that during observation the researcher would act as participant-as-observer. Since the researcher was a member of the studied organization, this role seemed appropriate and naturally applicable. Moreover, the goal of the researcher was to look at the studied organization from the different perspective and to try to approach to getting to know familiar people through the different lens (I. Hay, 2016, p. 319). Bryman identifies such method as a full participant observation and warns that a researcher should be aware that this observation method unlike covert one anticipates that the researcher's presence always influences the behavior of people being observed (Bryman, 1988, p. 121). Therefore, unstructured observation method was employed where the researcher was a full participant. During the observations the researcher performed the same tasks as a member of the ReStore and at the same time all the participants of the observation were aware of the fact that the researcher is conducting observation for the current study.

According to the information in the previous chapter, the researcher planned to have two-week observations. However, due to the peculiarities of the organization it was not possible to do so. Since the organization is a volunteer one, there is no fixed working hours and the volunteers on their own organize activities in ReStore according to their availability, which is usually once a week at most. Therefore, it was possible to have 9 observation days. Nevertheless, the researcher tried to capture a full picture of the studied organization, for that reason the observations had to include all types of the ReStore's activities and projects, which

was fulfilled. Table 2 presents the information about the observations that were successfully conducted. As it shows, the researcher was able to observe every type of activity within the projects and every type of activity within the organization.

Table 2. Conducted Observations

Observation Day	Observation Date	Observation place/project	Activity type
1.	16.11.2021	ReSykkel	Dugnad day[1]
2.	27.01.2022	ReSykkel	Bicycle collection day
3.	25.02.2022	ReStore organization	Socials for volunteers
4.	22.03.2022	ReSykkel	Opening day[2]
5.	26.03.2022	ReStore	Dugnad day
6.	29.03.2022	ReBuild	Dugnad day
7.	02.04.2022	ReStore	Opening day
8.	05.04.2022	ReBuild	Dugnad day
9.	07.04.2022	ReStore organization	Annual General Meeting

4.6   Analytical method

The analytical procedures of this research follow the rules of the grounded theory method to ensure accuracy. The study employs an open coding method that makes the researcher to ask questions about collected data and to compare these data for similarities and dissimilarities (Strauss & Corbin, 1998, p. 74). As for the primary data, interviews were transcribed soon after collecting and, together with observation notes, they were coded and grouped into categories. Some of the codes and categories were based on the emerging themes, while some of the categories were based on the research questions, studied documents and

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[1] Dugnad is a Norwegian word, which means voluntary, unpaid work that is done in a community. It is a common cultural concept in Norway, that is used instead of term 'volunteering' even in expat and international communities.

[2] Opening day is a day when the ReStore organization opens its doors for other students to provide its service.

literature. As for the secondary data, bylaws, annual reports, meeting minutes, social media and group chats were examined as additional data and to check the reliability of the data collected through the other methods (Bryman, 1988, p. 124). Moreover, the triangulation of the data collected via different methods enabled the researcher to make sure of the validity of the findings. (Silverman, 2011)

Besides that, to simplify and organize the analysis of the research, the NVivo software was actively used (I. Hay, 2016, p. 389). Therefore, the transcribed files of interviews and observations were coded and categorized via this qualitative software.

4.7 Challenges and Limitations

As for the observation method, one of the challenges that influenced the observation process was COVID-19. Due to the pandemic restrictions, some of the events and activities of the studied organization were cancelled or postponed, therefore, the researcher had less opportunities for the observations. Also, as it was mentioned in section earlier, another challenge of the research conduction was the limited working hours of the studied organization. Thus, due to these peculiarities the observation sample was cut from two-week observations to nine-day observations.

Limitations of the research design lay in the chosen approach of the single case study. This approach enables the researcher to study the case in-depth, but it may influence the generalization of the analyzed data. Furthermore, the selected case itself is limited to the Norwegian context. Therefore, the researcher is aware that the findings of the study may differ from the other existing cases and may be replicated within similar cultural and economic context, for example, in Nordic countries, where the youth mobility and population are quite high.

4.8 Research Ethics

The researcher greatly values the principles of ethics. Therefore, the rules of the ethical research were applied while conducting the study (I. Hay, 2016). The researcher sought to perform the study without harming the participants and invading their privacy. Moreover, besides getting the signed consent from the interviewees and observation participants, the researcher also asked for a verbal consent before the interviews and observations. Furthermore, it was essential for the researcher to make the participants feel safe and open. Therefore, when starting the first interaction researcher let the interviewed and observed know that they are free to ask any questions, to let her know that something concerns the participant and to stop the research process at any point. The sample of the consent forms that were presented to the participants of the study can be found in Appendix 2.A and Appendix 2.B.

5 Empirical Findings

This chapter presents the findings which are important for the further understanding of the research. The researcher will give a description of the observed organization and place this organization within the circular economy system that was developed by Braungart and McDonough (McDonough & Braungart, 2002). By that means, the reader is provided with the background information, which is essential to understand the analysis and results of the research.

5.1 ReStore Organization

ReStore is a student non-profit organization that is located in Trondheim, Norway. According to the ReStore's bylaws, it "is a student organization that works to reduce waste and improve student quality of life by facilitating re-use of goods for all students" ("Vedtekter / Bylaws," 2019). It was established in February of 2019 by three international NTNU students whose studies were connected to sustainability.

ReStore has three types of members:

1.   Leaders

There are four leaders who equally share the management responsibilities of the organization. There always one representative from the ReSykkel project. Currently these four positions are paid and the workload is equivalent to 10% each. The leaders are elected during the annual general meetings (AGM).

2.   Board Volunteers (also called Board Members)

Board members are the members whose responsibility is to support the leadership team in organizing events, managing projects, and actively participating in the decision-making process of running the organization. Every project is run by a board member. As well as leaders they are elected during the AGM. However, the board members do not get paid, they perform their duties voluntarily.

3.   Event Volunteers

Event volunteers are the members who freely offer their support in executing tasks for one or more events and/or projects.

Within ReStore there are currently three ongoing projects, which are ReStore, ReSykkel, and ReBuild. The goals and functions of every project will be presented below, and based on that description the researcher will attempt to place ReStore organization within the CE system.

5.1.1 ReStore Project

The purpose of ReStore project is exchange of household goods. It was developed to solve the problem of the unnecessary waste of household goods that were thrown away by the students who were leaving Trondheim after they finished studying (*ReStore*, 2019). As one of the founders remembers:

> "We lived in Moholt[3] as all other international students that moved to Trondheim and, luckily or not luckily, our window was overlooking these big containers that were set in Moholt at the end of the semester where students could throw their furniture. And I mean, it is possible to take some furniture out if you are interested in something. But very often it ends up destroyed, when it rains, especially. And it just stands in front of your window for quite a while. And us three that started ReStore together, we all were studying sustainability and felt like this was something that could be changed towards a more sustainable way."

It works the following way, former students who want to get rid of the furniture donate it to ReStore, which means that they bring it to the ReStore facility. Then, the volunteers sort the donations during dugnad days and keep them until the opening day. The dugnad days at ReStore are the days when the volunteers gather to sort, fix and organize donations, in other words it's a regular volunteering day. The ReStore opening day is a day when students who are interested in collecting items for their household come to the ReStore and pick up what they need free of charge. Usually the opening days are organized several times during the begging of every semester and couple of times during the semester. Unlike the opening days,

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[3] Moholt is the largest student village in Trondheim, mostly populated by international students. *Moholt student village*. Sit. Retrieved 03.05 from https://www.sit.no/en/housing/moholt-student-village

donations can be accepted all the time, because the ReStore facility has a porch area where donations can be placed even if the volunteers are not there.

Before the first opening day of every semester the ReStore volunteers do the inventory and count all the items they have received. Table 3 presents the ReStore inventory. In January of 2020 and 2021 it was not possible to do a routine inventory due to the Covid-19 restrictions, so the data for those two seasons are not available. Numbers for the year of 2019 show the growing dynamic through the year. Other than that, there is no pattern that the researcher could observe due to the missing data. Notably, after every session of semester openings the ReStore is left literally empty, except for several items that were not taken, which means that the numbers in the Table 3 show how many things were reused for every semester. This is also a prove of ReStore contribution to the CE. To illustrate this contribution, the researcher offers to look at more numbers of the specific items. For example, in total ReStore put into reuse more than 150 sofas, 700 tables and desks, 450 chairs, 3900 plates, 4600 hangers, 1100 books, 500 lamps and 375 kg of cutleries.

Table 3. ReStore Inventory

	2019		2020		2021		2022
	January	August	January	August	January	August	January
Kitchenware (pcs)	464	2106	n/a	7658	n/a	4341	2470
Kitchen cutlery (kg, rounded up)	n/a	50	n/a	154	n/a	133	38
Furniture (pcs)	68	353	n/a	444	n/a	431	248
Office, electronics (pcs)	151	776	n/a	1224	n/a	796	569
Other household items (pcs)	486	1532	n/a	3659	n/a	1087	837
Outdoors items (pcs)	33	34	n/a	126	n/a	114	15

It should be noted that the board members shared that usually they receive much more items during the summer time, so they also need to organize more volunteer shifts during the whole summer break. They also admitted that Covid-19 challenged the ReStore ability to organize the opening days and made it impossible to operate as it was before the pandemic. Therefore, the organization had to adapt and change the way they work. Instead of letting students inside the facility, where they could pick up things. Board members had to ask the

students to send a request for the things they needed. The volunteers had to go through every request and pack the boxes with requested items, as for the large furniture like sofas, time slots were scheduled personally with every student. These changes during the pandemic slowed down the workflow of ReStore. Nevertheless, the challenge did not make the organization to stop operating but to find the solution that works for everyone.

Thus, the ReStore project makes it easier for students to reduce waste by collecting the used goods and giving it away, keeping the items that are in good condition out of the landfills.

5.1.2 ReSykkel Project

ReSykkel is a project that focused on fixing and forwarding bikes on the behalf of students. This is the second project that was developed under ReStore umbrella. The main goal of the ReSykkel is to reduce amount of the abandoned bikes. The idea of this project also solves the problem of the students, for example, when students have to leave the city they usually do not have enough time to sell their bicycles. So, ReSykkel finds the way out by having a contract with these students to sell their bikes on their behalf. Later, when the particular bike is sold the money is transferred to the owner of the sold bike. Therefore, the students do not have to wait for the actual purchase.

The ReSykkel project gets the used bicycles from students, fix them if necessary and sell them to other students. Sometimes the broken bikes are donated. So, the volunteers fix them, too, and sell them during the opening days. Sometimes, people donate well-functioning bikes. The bikes that are not fixable also used here for parts or by the new volunteers to practice their fixing skills. The volunteers of ReSykkel usually gather once a week for bike fixing, which resulted in building a core of volunteers who permanently participate in ReSykkel activities.

Moreover, as it follows from the observations, the volunteers are welcome to use the ReSykkel facility as a workshop where the volunteers can fix their own bikes by using ReSykkel tools and expertise of the fellow volunteers.

Initially, ReSykkel was not planned as profitable project, but since it started to get many abandoned bikes, which were sold after fixing, it generated some profit. Even though ReSykkel made money out of sold bicycles, it is still a non-profit project, all the collected funds go to the purchase of tools, necessary replacement parts and so on. Also, this money can be spent on the

other projects related to the bicycles, and the volunteers are encouraged to come up with the ideas for the development of bike infrastructure in Trondheim.

Table 4. Total of Received, Sold and Remaining Bikes

	2020		2021		2022		Overall
	January	August	January	August	January	August	
Received bikes	15	39	14	12	34	57	171
Sold bikes	13	35	10	11	24	n/a	93
Remaining bikes	2	4	4	1	10	n/a	21

As well as ReStore project, ReSykkel keeps track of its items by counting amount of received bicycles each season. Table 4 presents the ReSykkel inventory. The information for the sold and remaining bikes for the summer season of 2022 is not available yet. Despite that fact, it is seen that for the two years ReSykkel already received 171 bicycles and sold 93 of them by winter of 2022.

Figure 5 shows the dynamic of received and sold bicycles at ReSykkel. It is seen that from the August of 2021 ReSykkel received more and more bikes. Moreover, as it recognizable from the diagram, the dynamic of sold bicycles follows the trends of received ones, which illustrates that ReSykkel is quite efficient at contributing to putting the bikes into reuse.
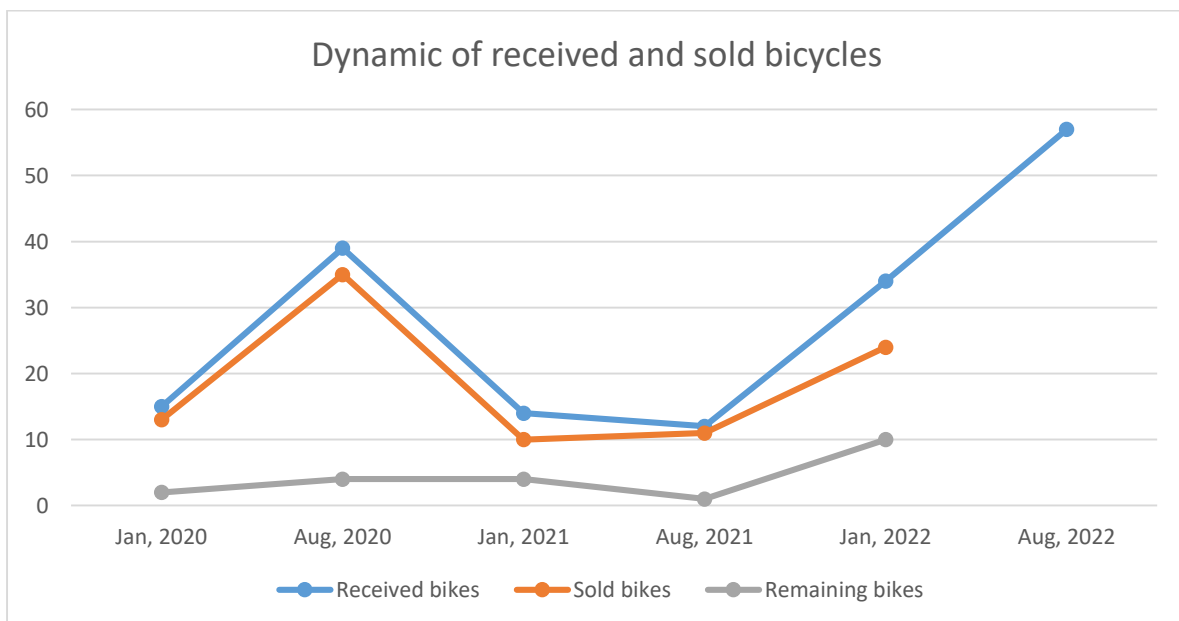
Figure 5. ReSykkel dynamic of received and sold bicycles
Source: The researcher's own findings based on the collected data.

Thus, the ReSykkel project is the project that, first of all, helps students to sell their bikes on their behalf, and second, accepts the broken bikes for further repairing and putting it into reuse.

5.1.3 ReBuild Project

ReBuild's purpose is upcycling of goods and building materials, that were donated to the ReStore organization. Together with that, ReBuild facility is planned to be used as a studio where members of ReStore organization and students could repair or decorate furniture or personal items. Moreover, the ReBuild studio could hold workshops and already had practiced this. The idea of this project appeared when there were too many broken or damaged ReStore donations accumulated, and, apparently, students were not very interested in those. At the same time, even if the volunteers were trying to fix the furniture on their own, in most cases it was not possible because of the lack of tools. Therefore, the need for the project which would function as a repairing workshop resulted in ReBuild.

The ReBuild project gets the items from the ReStore projects. While the volunteers at ReStore sorting the donations they choose the furniture that is damaged or missing some parts and bring it to ReBuild. The volunteers of ReBuild usually gather once a week for fixing the flawed furniture, they have all the necessary tools and implements for this. As soon as the furniture fixed it goes back to the ReStore project or, if necessary, to other projects.

Moreover, ReBuild volunteers can fix anything for the whole ReStore organization if other projects request it. For example, during the observations at ReBuild, ReStore project asked the ReBuild volunteers to make some shelfs for displaying the ReStore items.

This project is quite new and currently developing its structure. However, the volunteers of ReBuild already became a solid community with core volunteers who are involved permanently. They have a lot of plans for future work.

5.1.4 Planned Projects

ReStore is actively growing organization. There are some more projects in the developing stage. For example, ReFood, the purpose of which is to redistribute saved food among students. RePlant is a planned project. The main idea of RePlant is to be a place where students could leave their plants when they are out of city for the winter or summer break, so called plant hotel. Another initiative is ReHome. The project's goal is to be a home away from home for the ReStore volunteers, which means to provide participants a cozy place, where they can meet and socialize.
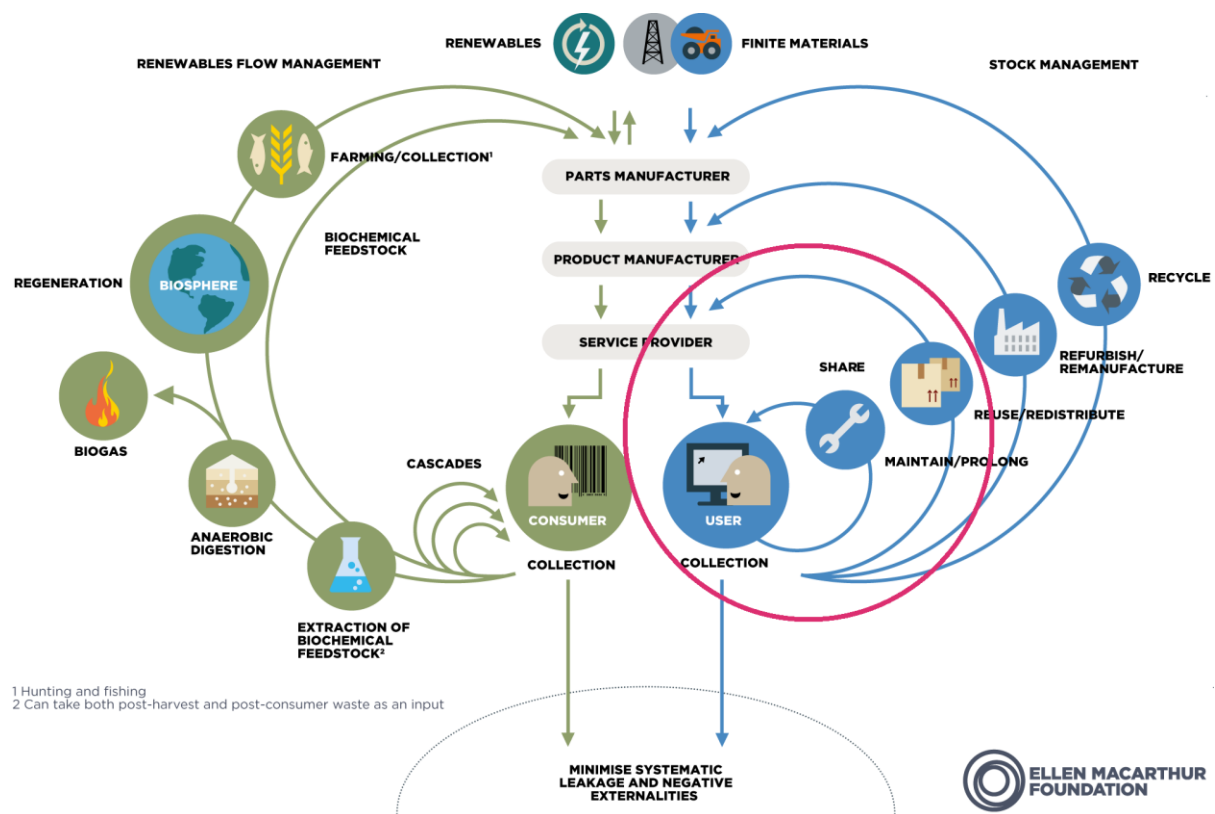
5.2 ReStore and CE

Figure 6. ReStore's place within CE system circled in pink in the CE system diagram based on C2C by Braungart and McDonough.
Source: Ellen MacArthur Foundation

In Figure 6 the pink circle shows within which loops the ReStore's operations lay and where in the CE system it is placed. It is seen that current activities of ReStore organization

involve only one sphere, which is technosphere. For example, ReStore project is contributing to the second loop – reuse/redistribute by collecting goods and redistributing it among students. ReSykkel covers both maintain/prolong and reuse/redistribute loops by repairing abandoned broken bikes and reselling bikes on the behalf if students. Moreover, the first loop includes 'share', where ReSykkel also contributes by sharing tools and workshop space with its members. ReBuild, as well as ReSykkel, contributes to the same both loops, to the first loop by fixing the broken furniture and to the second one by redistributing the fixed goods to the ReStore project for further distribution among students or within ReStore organization.

5.3 ReStore and Sit

Sit is a student welfare organization in Norway. Sit provides such services as housing, eateries and welfare for students. Lately, it focuses more on the well-being of students (*About Sit*). Moreover, Sit financially supports the student organizations that provide services beneficial for Sit. It is also supportive of organizations that promote volunteerism among student community. For example, such organizations like NTNUI and ISFIT receive support from Sit (*Sponsorship*). Another initiative that Sit has is Sit Labs. It is a project according to which Sit employs students whose responsibility is creating projects, services, activities and events that make the students' everyday life better (Sit, 2021).

ReStore is one of the organizations that supported by Sit. First of all, Sit provided ReStore with a facility, second, Sit allocate funds to ReStore so it could operate. Sit also started to arrange the paid positions in ReStore. As it was described before, the leader positions get the compensations. These are positions that responsible for the ReStore functioning. Additionally, Sit supported the expansion of ReStore to another NTNU campus in Ålesund.

6 Analysis

6.1 Motivation

Giddens defines motivation as "potential for action", he also claims that motives prompt the human actions in abnormal situations. (Giddens, 1986, p. 6) It means that motivation does not influence individual's decisions on how to act or not to act during the routine tasks. Within this research, the researcher tries to understand what motives the interviewed and observed participants to start interact with ReStore, to continue or deepen this interaction. The economic, social, personal and activist types of motivation were grouped under motivation category.

6.1.1 Economic

Most of the interviewed were motivated to interact with ReStore due to the economic reasons. Interviewees mention that seeking to save money made them find ways to get necessary furniture or kitchenware for free. User 2 describes her motivation exactly like this:

> "I'm a student, and I was looking for furniture because I moved out. So, ReStore was the best alternative that I found, because it was for free, of course."

User 3 also admits that his motivation was based on the fact that he did not have to spend money.

> "I'm just user of ReStore. And I used to go there each semester, especially at the beginning or the end of semester to get new stuff, or bring my old stuff to there, or replace some furniture, if I want to. I think the biggest driving factor was that I don't need to pay any expenses. So that I think that's the biggest factor."

Volunteer 3 mentions that Norway is expensive country by that she explains her need to save money:

> "When I came to Trondheim, I was very lost and I didn't know where to get the stuff that I needed for my room, for my apartment. ReStore was something that

helped me out to settle in and get the stuff, because living in Norway, it's not cheap, it's quite expensive. And we have a facility which provides you things, uh, for free."

Board member shares his experience of his first interactions with ReStore. He was looking for the necessary furniture that, as assumed by the researcher, was economically challenging to buy:

"I've been to Norway as a student, and I didn't have anything…I mean, in my dorm, I didn't have chairs or like, desks and shelves, I just had one table, which I used to put my speakers on. So, I needed some other things and I was just asking around people for things. And they suggested me that there's a thing called ReStore, which helps students out by just giving out things… So that's how I first know about ReStore. And I went there and just asked for few things, which I needed. And I got it in one week."

Volunteer 1 talks about his desire to buy a bicycle, which brought him to ReSykkel, ReStore's project:

"Actually, I was just interested to buy a bicycle when I came here to Norway. So I wrote to the ReSykkel webpage. Someone replied to me that say that they are not selling, they were not selling bicycles so far, but I can join it to the ReSykkel group to repair. So I went one day, I met Juan the…that was the leader. And I started working there as a volunteer."

It is important to note that in this case the respondent also tried to save money buying a bicycle, because ReSykkel sells the second-hand or repaired bicycles, which is cheaper than the brand new one.

The motivations of saving money also were overseen during the observations. One of the examples was recorded during the regular shift at ReSykkel on the 16th of November, 2021, when volunteers gathered to fix the bikes. The researcher observed the situation where ReSykkel volunteer needed to fix his bike but did not have access to tools, so not to buy tools he used the tools from the place of his volunteering. From the researcher's notes:

"One of the bikes was fixed successfully and moved to the pile of well-functioning bikes. So, two volunteers start to work at another bike, but this bike belongs to one of the volunteers. The volunteer, who owns the bike, explains to his colleague that

the breaks need fixing. The bike owner says that the problem is gear shifter, which he cannot fix with the tools he has at the dorm or that Sit can provide if requested."

6.1.2 Personal interest

The subcategory of personal interest included both personal and academic interest of interviewed to start or continue their interaction with ReStore. Volunteer 1 shares that he likes to do the manual work, so the volunteering at the ReSykkel he sees as a hobby:

> "I started working there [at ReSykkel] as a volunteer. Maybe the motivation was like, I like it. And I like to do that kind of things like repair. And we also learn many things about how to repair bicycles. So what's also relaxing, just take it as a hobby."

Researcher's notes from the observation of ReBuild on the 5th of April, 2022 also capture the situation when a volunteer shares that she likes the to spend time at ReBuild because she enjoys this activity:

> "Another volunteer comes and continues working on the project she started before (fixing a nightstand). She is telling that it is a nice activity to have at the spare time. Not only fun but also useful for others."

Some of the interviewed shared that the motivation to involve with ReStore was that their academic background or that their personal views correlated with the ReStore mission. Volunteer 2 mentions that his academic background made him interested in the ReStore:

> "One of the motivations is that I'm studying the sustainable energy. So all this matters, uh, I am as a sustainable energy student would like to reduce the waste"

The same interviewee also shared his experience of becoming an active volunteer at ReStore. He described his curiosity of the volunteering process, which also was coded as personal interest:

> "I wanted to understand the concept of ReStore, how it functions, how it works, how volunteers work. Volunteering is a very new thing to me. Uh, really when you are in back home, all these activities, either you get paid or you have some extra benefit, uh, here, maybe you get the things first, uh, as a volunteer privilege, but no more than that. So that really motivated me."

Leader's motivation to join ReStore was her interest in the subject of the CE, which was based on her academic background. She remembers:

> "We had the presentation about it [ReStore] in our class and I was already really interested in the circular economy. It's been on top of my mind since 2018 and I wanted to do a thesis on that as well. So, um, I was just like, this is the coolest and most perfect thing I want to participate in because it's exactly what the circular economy is about."

6.1.3 Activist motivation

This subcategory included the codes like 'giving back to the community', 'helping people', 'volunteerism', 'activism'. Few of the interviewees showed the pattern to be driven by the volunteerism itself. Thus, Volunteer 3 says that she was always taught to give back to the community, so all her life she was volunteering for different organization:

> "I've been raised with the sense of giving back to the community. Like throughout my life, I've been a volunteer back home in my country, and I've always been told to continue this volunteerism. Coming to Norway I didn't know how I was gonna do that. So, ReStore provided me the opportunity to continue with volunteering that I've been a part of since my teenage years."

Volunteer 2 also mentions his desire to give back to the Norwegian community because he as an international student felt grateful for the opportunity to study in Norway:

> "Uh, actually I was privileged to come to Trondheim because I'm studying here tuition free. It means, uh, it's for tax payers money of this country. I don't belong to this country but I'm so glad I'm here. Uh, how can I do, how can I give back? I do so by volunteering activities, uh, where I help people."

Board member remembers his volunteering experience and emphasizes that he was interested in the idea of helping other students. This made him to become more engaged into ReStore and he became a board member:

> "Since I've been with ReSykkel for many days I found that it was such an interesting thing that people want to help other people, other students in need. Other students who, you know, don't have things and suddenly they come…they come to

a new country, a new lifestyle, and they have to accommodate everything, and they have to find things. And it's a…it's like helping out other students to make life easier in staying in this new country for them. And mostly for international students and exchange students it might be helpful. So, that motivated me to be a part of something bigger. That's why I applied or still stood up for the position of a board member. So I can make any ideas come true."

Moreover, the Founder of the ReStore mentioned that they could not just do nothing about the situation with furniture waste in Moholt, which also was coded as 'activism'. This is how Founder describes the motivation to initiate ReStore:

"We lived in Moholt as all other international students that moved to Trondheim and, luckily or not luckily, our window was overlooking these big containers that are set in Moholt at the end of the semester where students can throw their furniture. And I mean, it is possible take some furniture out if you are interested in something. But very often it ends up destroyed, when it rains, especially. And it just stands in front of your window for quite a while. And us three that started ReStore together, we all were studying sustainability and felt like this is something that could be changed towards a more sustainable way. And at the same time as architects in our studies, it is a lot about, um, ideas and not so much about making these ideas happen as we build buildings only after we graduate. So we wanted, in a way, to do something sustainable, more tangible and ReStore was this kind of thing for us."

6.1.4 Social

Category 'social motivation' includes such codes as 'making friends', 'meeting people', 'student community'. Several respondents mentioned that one of the motivations they had to engage with ReStore was the other people with who they can chat and spend time together. For instance, Volunteer 1 answering the question about his motivation to be involved with ReStore says that he likes it because he can meet his friends there:

"It's time to relax and speak with all other people. Such a good activity."

Board member shares that while economic reasons brought him to ReStore, social ones brought him to ReSykkel. He sees ReSykkel as a nice international community which motivates him to be a part of that:

"And I went there [to ReStore] and just asked for few things, which I needed. And I got it in one week. And so that was a start for me to volunteer at ReStore. But as for the other projects such as ReSykkel, this one I didn't know about when I first got my things but a friend of mine introduced me to it and then I started going there because it's like a nice community for international students. It helped me to be part of something."

Volunteer 3 remembers that she decided to become a volunteer for the ReStore because she wanted to make friends:

"Um, my flat mate used to volunteer for the ReStore. So she told me that I should go and volunteer if I'm free and if I wanna make friends, especially with the international students, because at that time, even now everyone at the ReStore was like…basically mostly international students are volunteering. So it's a very good platform to make friends. So she took me with her for one of her shifts just to go and observe and see how things are. And then after that, um, she asked me if I want to volunteer. And from there, that's how I became a volunteer."

The researcher's observations can prove that ReStore's atmosphere is friendly and participants were engaged in different tasks and conversations. As for the ReStore project, on the 2nd of April there was an opening day. The researcher captured the following:

"Dorsa thanks volunteers for their work and says that everything went well. Couple of volunteers says that they felt the same, they say that time passed fast and it was fun. The opening day finishes with the pizza for volunteers. Dorsa and volunteers sit together and discussing the day. Ronald came up with idea for movers who often come to ReStore as a paid service to pick up sofas or other large furniture for the students. He offers some solution related to the delivery service for the students. He assumes that it will be a good option because his suggestion will make delivery cheaper for the students and more sustainable."

As for the ReSykkel project, on the 16th of November the researcher made the following notes:

"The overall atmosphere is friendly, volunteers have the music on (they even have their own playlist, where all the ReSykkel volunteers can add their favorite songs), they talk about their personal plans and their studies, they joke a lot."

"Some of the volunteers offered to have some tea or hot chocolate and have a break from working. While some people organize the hot water and snacks, others continue their fixing work. Everyone gathers around the table to have a snack. ReSykkel leader started to talk about future plans for their project."

Section Summary

Notably, the findings show that most of the interviewees named multiple motivations for their involvement with ReStore. The most popular one was the economic one. Activist, social and personal motivations were the drivers for less interviewees. These findings on the youth motivation are fully illustrated in Results Matrix, which can be found in Appendix 3.

Moreover, in Results Matrix some relations can be observed, for example, Users' motivation was always based on the economic interest only, while the Founder's and Leader's motivations were based on multiple ones like personal interest, activism, etc. Evidently, the less the interviewed are involved into ReStore, the less motives they have to interact or continue interaction with ReStore, and vice versa.

6.2 Empowerment

Empowerment is defined as the "process of increasing the social, political, spiritual, economic, and/or psychological potential of individuals and communities." (I. Hay, 2016, p. 77) This research investigates the empowerment within the ReStore organization. Therefore, researcher refers to the processes during which, according to the respondents, they were able to gain all kinds of beneficial knowledge or felt inspired by other members of the studied organization. Empowerment category merged out of such subcategories like taking leadership, gaining knowledge and skills, feeling that everything is possible and sense of belonging.

6.2.1 Taking leadership role

Subcategory leadership consisted of codes like 'providing opportunity to act', 'enabling to take responsibility' and 'encouraging'. Two of the volunteers note that they feel like members of ReStore encourage each other to take a leading role, which provides an opportunity

to develop the leadership skills. For example, Volunteer 2 clarifies that volunteering at ReStore is not just working but communication and empowering:

> "And also you go there and you don't just start working as you enter the ReStore. You sit there, you talk, you ask others what they're doing. Or, well, how's their thesis going? Their plans, future plans, and also like we encourage each other to be a board member or a leader."

Volunteer 3 emphasizes that leadership is something that is pushed on every member in every situation:

> "And it [engagement with ReStore] also provides you with leadership opportunities, because no matter how much time you have spent with ReStore, they're always pushing you to take up a leadership role, whether to be a board member or whether to be the head person for one of the programs. That's a great platform for students who want to, you know, just improve on their leadership skills or their social skills as well."

Observation notes also describe some situations in which other members of ReStore encourage volunteers to take a leader role. During the opening day at ReStore on the 2nd of April, Dorsa, the board member of ReStore, shared with the researcher her experience of being encouraged to exercise leadership. To be more specific, she talked about the fact that the board member trusted her and gave the opportunity to be a leader for one of the shifts, which made her feel empowered to apply for the higher position in future:

> "Dorsa shares that after the first volunteering day she was offered to have a leading shift at ReStore (note: leader shift duty requires a volunteer to organize other volunteers' work during the shift). She says that first she was a little scared by the responsibilities but the leader did not doubt that she could do it. She describes that that the trust she was given surprised her and also made her believe that she was capable of performing her new duty well. Also, Dorsa says that she was not sure that she was able to be a board member because it seemed to her as a very responsible position. But now she is a board member and she feels like she can go further and apply for a leader position."

Another observation note was made at ReSykkel on the 22nd of March, which was an opening day. Here is a specific example of the ReSykkel leader talking about the opportunity

volunteers have to contribute to development of sustainable bicycle usage in Trondheim, the researcher also emphasizes that she observed positive group dynamic:

> "The leader announces that the opening day is over and thanks all the volunteers. He also has news to tell to the volunteers. The leader says that ReSykkel got the funds from Sit and this money should go to the project related to the bikes in Trondheim. The leader asks everyone to think about the ideas, he says that it can be anything that will benefit either students, or bicyclists, or environment and so on. He also says that there are no boundaries, he wants the volunteers to dream big and insists that everything is possible. He is sharing some of his ideas and volunteers start to discuss it. This news engaged the participants and they look excited coming up with various ideas."

6.2.2 Knowledge and Skills

In order to understand how the ReStore is empowering its members, the researcher asked the interviewees if they benefitted somehow from the engagement with ReStore. The interviewees who mentioned skills they gained at ReStore were placed under this subcategory. Leader answers the researcher question the following:

> "I think it's just how much I learn."

Board member shares that he personally developed the organizational skills by implementing his idea into ReStore development, it also would not be possible if he did not gain some power by becoming a board member:

> "Also, the board member position gave me the opportunity to just execute an idea which I have, and it gave me…like…organizational skills."

Volunteer 1 says that he deepened his skill of fixing bicycles, and had to bring creativity into the process:

> "I learned many things, repairing bicycles, for example. What I knew before was just very basic, really basic things. The leader taught us how to do more precise stuff like…repair the shift, and the brakes, and everything. So actually, it's the knowledge. Creativity, also. We try to use creativity sometimes to fix things."

Volunteer 2 emphasizes that it is not just learning new skills but it is an exchange of knowledge and skills, which also the indicator of intermutual engagement. He says:

> "Uh, it is purely, uh, exchange of skills and knowledge exchange. None of us is an expert in fixing anything there [at ReBuild and ReSykkel]. But we talk, we discuss and we fix things. And next time, we have some similar problem, we already are experts in it."

Exchange of knowledge is the process that was observed at the studied organization quite often by the researcher. For example, at ReSykkel on the 27th of January the researcher made the following notes:

> "17:13 – Volunteers start to work on the bikes, people, who started volunteer recently, get help from the experienced volunteers and learn how to fix simple things first, like change the flat tire. Also, leader explains to the newcomers that there are some unfixable bikes that can be used only for parts so the they can try their skills on these bikes and don't be afraid to do something wrong.
>
> 17:36 – one of the volunteers asks for help because he doesn't know how to fix the breaks, Lindsay comes to help, he fixed many breaks before."

6.2.3 Sense of belonging

Most of the interviewed emphasized that people are the important part of ReStore. It is people who make the interviewed feel connection to the place. Several respondent note that they made new friends and broaden social connections, the others shared that they had deeper connection to the ReStore community as a whole. Therefore, this subcategory includes such codes as 'friendship', 'connections', 'belonging', 'ReStore people'. Findings show that the interviewees value people who participate in the ReStore functioning, belonging to this community makes them feel empowered. For example, Board member talks about the way he met new people:

> "At ReStore I have people working around me and with me, and it lets me…I can say it helps me to increase my social connections."

Later during the interview, he also mentions that the sense of belonging made him deepen his involvement with ReStore and become a volunteer:

"A friend of mine introduced me to it [ReSykkel] and then I started going there because it's a nice community for international students, also, it was nice to work there. It helped me to be a part of something bigger, belong to something."

Volunteer 2 notes that he made close friends at ReStore, the feeling of long lasting friendship is empowering for him:

"And, also, you get to know people a lot, you get friendship, which is really long lasting, I think."

Leader shares her perception of the ReStore members, she believes that these people make ReStore the way it is:

"And also the people that I know through the ReStore that I would not know if I hadn't been a part of it."

Volunteer 1 also mentions that people give him sense of belonging to ReStore:

"And also the people at ReSykkel and ReBuild."

6.2.4 Everything is possible

This subcategory includes experiences of the interviewees when they felt like it was possible for their voice to be heard, for their ideas to be implemented, and for their actions to make a change. For instance, Founder shares her feelings after the ReStore project was launched:

"Knowing that it's [ReStore creation] possible is a really nice feeling, knowing that if you make a first step, all these people [volunteers] will follow. … I would like people to know that it's possible. Like if you really believe in something and if you wanna make it, do it, you just need to make small steps. And as long as you're moving, as long as you're doing something it's gonna happen eventually."

Board member emphasizes that the understanding that it is possible to implement his ideas empowered him and made him apply for the board-member position.

"That's why I applied or still stood up for the position of a board member. So I can make any ideas come true. … Yeah, being a board member gave me more opportunities to bring out my voice and my ideas."

Section Summary

According to the analyzed data, respondents named numerous things that they gained from interaction with ReStore, which somehow empowered them. Therefore, there are different sources of empowerment. As well as motivation, types of empowerment varied over interviews and usually the interviewed had multiple experiences that empowered them.

Furthermore, the relation between the extant of the youth involvement in ReStore and them feeling empowered is identified. The youth, that has less interactions with ReStore, does not feel like they gain any empowerment from it, and vice versa. The youth, that is deeper engaged in the ReStore activities, shows more awareness of the empowerment they gain. All the findings on the youth empowerment at ReStore are fully illustrated in Results Matrix, which can be found in Appendix 3.

6.3 Youth contribution

The category of youth contribution includes such subcategories as helping students, contributing to environment, raising awareness, building active community, making change. This category represents the contributions that the youth is making through its participation in the ReStore organization.

6.3.1 Helping Students

This subcategory consists of the codes like 'helping students', 'good for students', 'students' comfort', 'service for students". It includes the respondents' and the researcher's experience od encountering the situations when the youth via ReStore services supported and helped the students and members of ReStore. For example, User 1 sees that ReStore helps the students to have less worries about the furniture to get and to get rid of:

> "There are a lot of international students that are living in these student villages. And they often are, well, sometimes they're not staying for long. Staying here for two years, but sometimes they're staying for one semester or one year, and they don't want to buy everything new, because then you get the problem of having all the things. What are you going to do after you're done studying, where are you

going to leave it? You can't take everything back to your country. I think it's like students helping students."

The other users find that ReStore offers a good deal for students, and students do not have to spend money on the household goods. For example, User 2 states:

"I think it's a very good deal for students"

And User 3 describes in more detail how it is good for students:

"ReStore give us a good offer actually, we don't need to pay for new things and, you know, there's so many students from abroad in Moholt and we are not really…we really need some stuff in the beginning of the semester to fill our rooms and to buy the new things require a lot of money actually. So I think that there are really helpful offers for students."

Some volunteers mention that free furniture is a good opportunity for students to furnish their rooms and not to get broke. For instance, Volunteer 1 says:

"It [ReStore] helps the students because, as you know, many students have a restricted budget. So for us, it's quite difficult to buy everything new. So it's a good option. ReStore offers things that are maybe not possible to buy for us, students. So it's possible to find a coach, desk, chairs there in ReStore, which may be expensive for us to buy. So we are taking things for free."

Notably, Volunteer 3 adds that it is not only a good opportunity but also a useful give-and-take system, that allows students not to worry about selling furniture when they move out:

"ReStore provides students the opportunity to come and get, you know, just to come and be able to furnish their apartments because a lot of students are not getting furnished apartments. So, especially if you are an international student, who is coming to Norway, it's a good opportunity where you just can pick up the stuff that you like and take it without having the hassle of making a payment or, um, without thinking what I am going to do with these things after I've left Norway, it's like a give and take system."

Leader notes that the importance of students having comfortable and quality life. She believes that ReStore contributes to that aspect by providing an opportunity for students to take things from ReStore and make their rooms cozy. She also mentions her own experience of

borrowing skis, which helped her have some outdoor activities:

> "Um, I think ReStore gives us, like students, an opportunity to have a little bit nicer life kind of, because you can get the things for free and you can have maybe a sofa, even though you couldn't afford it. Going to Ikea means spending a lot of money, even second hand markets are also expensive in Norway. So it just makes students' life more comfortable, um, like higher quality. And, for example, I borrowed skis from ReStore, and then I could ski. Otherwise, I wouldn't have bought skis."

Volunteer 2 thinks that ReStore helps to meet students' needs:

> "Maybe someone doesn't want some household goods, but someone needs them. So ReStore makes it possible to meet students' needs, if they want some things like furniture. ReStore helps students and they really don't want to give bad things [broken] to ReStore, which are really going to be wasted without any help to students."

The researcher's observations also illustrate similar experiences. One of the observations mention how ReSykkel is helpful for the volunteers and students. They have an opportunity to fix their bicycles for free and with the volunteers' assistance. For example, there are notes from the observations made in ReSykkel on the 16th of November:

> "The bike owner says that the problem is gear shifter, which he cannot fix with the tools he has at the dorm or that Sit can provide if requested. So, he thinks that it's a good opportunity for people who like biking to have access to the space like a workshop which is equipped with all the necessary tools."

The way the volunteers organize the work in ReStore also contains a lot of indicators of trying to make their service customer-friendly and be helpful for students. They try to think about all the challenges students can have to pick up larger furniture, for example, during the observations of the opening day at ReStore on the 2nd of April, the researcher made the following note:

> "Tables and Sofas – people can book the item and come back later before closing to pick up heavy furniture."

This note illustrates a solution that volunteers came up with. During the opening day students could book the larger furniture that they liked, so they could come later during the day

with some help to pick it up.

For this opening days, students had to register for the different time slots, however, if students came without any registration they still could check out ReStore, they just had to register at the registration desk as walk-ins. Observation note reads:

> "If people come to the ReStore without number registered online they can go to the registration desk and register as a walk-in, it is not a problem."

Therefore, the ReStore volunteers try to help students in all aspects they can.

6.3.2 Contributing to Environment

This subcategory includes the observations that the respondents mentioned as the youth contribution to the environmental situation in Trondheim by means of ReStore activities and services. The codes of this subcategory are 'helping environment', 'good for environment', 'second life of things', 'reduced waste', 'reusing', 'prolonging', 'fixing', 'environmental sustainability'. Two of the Users note that ReStore helps to reuse things. User 1 emphasizes that it especially reduces the plastic waste:

> "I think that ReStore represents a very good student organization that wants to do something good for the environment and wants to give to stuff that are still in a good shape a second opportunity. I think at some point ReStore helps to diminish the plastic that we use. Because, for example, taking plastic containers from ReStore, you gave it a second chance and when you are leaving Trondheim, you can give it back to ReStore."

User 3 notes that it also reduces carbon emission:

> "ReStore really contributes to the increasing rate of reusability. In my perspective as architects and Sustainable Architecture students, every process for manufacturing, even the small stuff, it creates emissions a lot. Running the manufacturer factories, it creates a lot of emissions and also transportation is one of the biggest factors to create emissions as well. But, due to high rate of reusing, ReStore allows so many people contribute to lower the emissions. Even if people don't know how it works, but they actually practically involved in that process. So I think it's really good factor for involving all the people into the circular economy

even without their intentions. So I really like this idea [ReStore concept]."

Volunteers mention that ReStore contributes to the CE and environmental sustainability. Volunteer 2 notes that ReStore does not really provides the closed loop model but still contributes to the environment and the CE:

"Reducing the waste. For example, let's say there is no ReStore. So, I would go to Ikea and buy the things and I would never think of getting used stuff. But there is ReStore, and all the students who go to ReStore somehow contribute to the environment by reducing the waste, actually. What ReStore does, I cannot say it completes the cycle, but I would say it contributes to the CE."

Volunteer 3 emphasizes that ReStore helps the city of Trondheim to produce less waste:

"I think ReStore represents environmental sustainability, because it's an organization that is trying to contribute towards environment, like, to the environment that we're living in today, the climate change that's happening today. ReStore plays a very important role to make sure that as students, we do not add more to this climate change. ReStore is kind of helping Trondheim too, you know, minimizes city waste as well. Also, I think ReStore is like another way of recycling things, because you are not just putting things to waste. For example, we have programs like ReBuild, where volunteers put their time and effort into making sure that, if some donations are broken, it's usable for the other students."

Observation notes documented what exactly the youth did to contribute to the environment. For instance, during the observation in ReBuild on the 5th of April, 2022, the researcher made the following notes:

"Another volunteer comes and continues working on the project she started before (fixing a nightstand). … She finishes her work. The nightstand is fixed and now can be moved to ReStore for further usage."

"Two volunteers look for another project to work on. They decided to make a shelf out of some wooden pillars and two wooden boards. They found all the necessary part for the future shelf and now they are trying to build it. … The work is not finished yet. They decided to continue working on it next dugnad day."

Another example, the ReSykkel volunteers went to Sit to collect the neglected and

abandoned bikes. The observation notes from the 27th of January, 2022 read:

> "ReSykkel Leader texted in the group chat about the opportunity to get neglected bikes from Sit. He asks available volunteers to come to Sit office at Moholt for this task at 18:00. 4 volunteers text back that they are available and will come.

> 18:00 – volunteers and the leader gather nearby Sit office at Moholt. They see that there are dozens of bikes in different conditions. Volunteers had to go forth and back several times to deliver all the bikes to ReSykkel.

> After finishing the bike collection volunteers realized that there is not enough space for the new coming bikes, so they have to find another room to keep the broken bikes until they are fixed and sold. They arrange another room for the bikes."

6.3.3 Raising Awareness

The subcategory of raising awareness includes codes like 'promoting sustainability', 'spreading the idea of change', 'raising environmental awareness', 'sharing information'. This subcategory consists of experiences of respondents who see that raising awareness is a contribution, which is made by the youth via ReStore. Volunteer 1 says that spreading this awareness is important for attracting new volunteers:

> "ReStore is spreading the voice [to raise environmental awareness], I mean, by what we're doing. Yeah, it's like the only way for an idea of ReStore to grow is to have more volunteers, because there is no way to pay someone for doing this job. This idea just to do that for the community. So the more volunteers we have, the more things we can do and the better we're spreading the voice."

Volunteer 3 believes that promoting ReStore and its goals has many different benefits, spreading the word about ReStore expand ReStore concept to other cities:

> "My work toward ReStore [volunteering] helps me to promote ReStore to the outside community as well. It's like telling the community that we have this organization and then, you know, motivating them to come and be a part of this organization.

> I think as a volunteer at ReStore, you don't just motivate yourself, but you're also motivating the others that are around you to become a part of this organization and

to see like the way it benefits, not just oneself, but everything that's connected towards you like be it Sit or be it NTNU or the city itself. It also has an effect globally. Yeah. So I think just, I mean, the being one person, you know, you can spread the word around, you can make other people aware, bring more people to be a part of this. Yeah. Because like, just yesterday I found out that ReStore has now expanded to Ålesund as well. Mm. So I feel that was because, you know, people talked about it."

User 3 notes the importance of ReStore promotion on the social media:

"And the second one [contribution], it [ReStore] creates relationship between people and organization. So, people can keep track of ReStore activities and events on Facebook, for example, especially using the social network, it allows people to be more involved in the circular economy. I think, the most important thing is to make a basic [CE] awareness among people, so they could contribute to it, too."

Board member talks about practical part of ReStore promotion:

"Sharing information that people can donate to the ReStore is very important, like at least three or four friends of mine donated things to ReStore because they didn't know where to give it away when they will go back home [home countries]."

Founder believes that ReStore's activities like workshops are useful for raising awareness, she also noted that it is important to make ReStore visible:

"For example, if people are doing workshops, it's raising awareness."

"We wanted our idea to be visible. I think this idea of putting things out there, making statement, being visible is very important in making something happen, because if you believe in it and you show it to others, they're going to believe in it too. Just don't sit on it."

Leader notes that ReStore is able to raise awareness among people unintentionally, even if people do not think about the environment, they start doing it after some time being part of the ReStore:

"It's just like, ReStore contributes to the environmental thinking and awareness. I think, because ReStore offers free stuff, it attracts people that are not thinking about the environment. So it's like, in the core, it's an environmental organization, but all

these people come to ReStore in the first place because of the free stuff. And they're kind of forced into this space where you think about the environment."

Volunteer 2 admits that ReStore educated him on environmental issues and promoted to him the second-hand culture:

"So if there is a ReStore, all the students who go to ReStore are somehow contributing to the environment by reducing the waste actually. Uh, if there is no ReStore, to be very frankly, there is no motivation and time for me to find ways to contribute to waste reduction. If there are such places [like ReStore], I will be very happy to go there and use the things which are already used. If there are no such things, I will never have any opportunity. So I will start using new things. So, I feel like indirectly ReStore is educating me or people like me to use used stuff."

6.3.4 Building active community

This subcategory includes such codes as 'student community', 'active students', 'motivated students', 'engaged youth'. It consists of situations when the youth is proactive within the ReStore:

Board member remembers him experiencing the first ReStore opening, he emphasizes that thanks to ReStore the students get engaged into student community:

"Taking part in the first few openings in ReStore and seeing that we've had around 500 to 600 people coming in, I realized that it has a very big impact in the student community, and, especially, in the international and exchange student communities. Those people got something [household items] out of coming there and being there. And that impacted their livelihood. And later out of those people at least 20% would come back to ReStore to volunteer for the projects. And that's I think, that affects how your community works and it shows how each person is dependent on each person."

User 2 also notes that ReStore volunteers are the active youth community:

"ReStore is a good example of active student community. From my sense, Trondheim has a big student community. Yeah, it's good to have representation

inside this student community of this kind of exchange of goods organized by ReStore."

Moreover, the observations support the facts of ReStore's help in building active community of students. The researcher mentions in her notes the atmosphere of ReSykkel. The note that was made on 16th of November, 2021 mentions the following:

> "The overall atmosphere is friendly, volunteers have the music on (they even have their own playlist, where all the ReSykkel volunteers can add their favorite songs), they talk about their personal plans and their studies, they joke a lot. They plan to have activities and go together to camp."

Another note from the ReStore opening day made on the 2nd of April reads:

> "Dorsa thanks volunteers for their work and says that everything went well and volunteers felt the same, they say that time passed fast and it was fun. The opening day finishes with the pizza for volunteers, and volunteers together with Dorsa sit together and discussing the day."

6.3.5 Making Change

The subcategory of making change implies the experiences of respondents when they intend to make change, or felt like they were making change, or when they see the need for a change. The codes of this subcategory are "making change', change is needed', 'rethinking', 'different perspective'. User 2 believes that ReStore changes people perception of things:

> "ReStore makes us rethink about what we actually discard. It makes us think about waste. And when you go there [to ReStore], you actually see how much stuff we have and how much stuff people donate to ReStore instead of throwing it away. So that makes us think about the stuff we have at home if we actually need them, in some sense. So I think it's [ReStore] a good example that should be followed."

Two of the volunteers talk about the need to change people attitude to the used goods and brand new things. Volunteer 1 emphasizes that the capitalistic idea is the source of the issue:

> "There is still that capitalistic point of view of getting new things even if the previous ones were okay just because now they are not fancy anymore. That's not

really sustainable. ReStore tries to change that, it shows that there are many things that are still useful. … I cannot say that I'm thinking in a sustainable way 100%, but I try. I try just to buy the things when I need them, also I try to ask first: Okay, do I need this? Is it really needed?"

Volunteer 2 shares his own experience and illustrates it with traditions of his culture, where the used goods are mostly not acceptable:

"This concept [ReStore concept] is very good. It should be in the people's mind that it's okay to start using the second hand things. Yeah, that should be there in their heart. But some people do not want to use used things, especially the kitchen stuff. There are some mindsets like that. Maybe we have not seen because we are in Europe. But back in my country, Asia, I'll not use furniture, which was used by my neighbor. And even if it is 90% good, it's just like that. I'm telling about mindset. So, it would be pointless to implement in my country, unless mindset is changed."

Founder believes that ReStore helps people to understand and get used to the idea of used goods:

"But I feel like once you have these things [from ReStore] and you live with them, your perspective on the reused things also can change, hopefully. So tomorrow you can just understand that reused goods would be even better. We hope that these little steps towards circularity are very important for the change. It's very important for me to see how we change the ways we think, or like, how we think more in connection to nature and surrounding that we have, and how we actually can live in symbiosis with nature rather than against it."

Leader sees ReStore as a new way of thinking:

"ReStore represents a new way of working, a new way of thinking. Really. I really think it a bit revolutionize how we think, because everything [in ReStore] is for free and you can see how much we throw, and we throw so fast."

Section Summary

The youth contribution to the CE in Trondheim is made though the ReStore organization. According to the findings, the youth is aware of their contribution. According to the interviewed, the youth contribute to the environment by reducing waste, raising

environmental awareness, and changing people mindset. Moreover, the youth is contributing to the student community by helping students and by providing a platform for their engagement to build an active student community.

6.4 Institutional support

The theme of institutional support came up as an additional emerging theme, the need of the institutional support was addressed by many of the interviewees. During analysis, this theme was also noticed in the observation notes. Therefore, institutional support category presented below. It consists of such subcategories as allocating funds, providing infrastructure, offering cooperation, being a platform for promotion.

6.4.1 Financial Sponsorship

This subcategory includes topics on financial support from institutions and organization that support the youth initiatives. Some interviewees shared that this type of support was important not only for launching the project but also for maintaining and developing the student organization. Such codes like 'funding need', 'paid positions', 'supplying', 'financial support'. For example, Founder notes that the financial support was essential for implementing their initiative and establishing ReStore:

> "We knew that we couldn't have it [ReStore] just on our own, that we would have to have an organization and some kind of funding that would support this idea. So, we decided to make a little proposal of what our project would look like and we sent them [Sit] a message and said that we were interested in making something like this and asked them if they were interested in being the supporting organization to ours. … It was very important that Sit was there for us from the beginning."

Leader mentioned that the fact that Sit made the paid positions in ReStore possible helped the ReStore to grow and have a stable structure:

> "We were hired as project developers. So our role was to develop ReStore into a more professional structure. And we created a structure where, there would be three

[currently four] leaders and eight board members. Leaders have to write reports to Sit and make sure that everything is going forward and works well."

Observations illustrate the need of the financial support in ReStore form the supporting organization. For example, the researcher's observations conducted on the 29th of March, 2022 in ReBuild note:

"Volunteers need to make a list for Sit, where they specify what is necessary for ReBuild Studio in terms of fasteners (screws, bolts, nails) so they could keep on fixing the broken furniture."

Another situation that was observed by the researcher took place at AGM of ReStore. The leaders of ReStore while presenting the report on ReStore for the previous year mentioned the amount of money that the organization got from different sources, and they emphasized that Sit would like part of their funding being spent on the well-being of the ReStore members. On the 7th of April, 2022 the researcher noted:

"Participants discuss future events and social activities and the board member reminds that Sit insists that students should have more socials to make students happy, this is important for Sit."

6.4.2 Infrastructure

Some interviewed mentioned the need of infrastructure to either implement the ideas that the youth has or to make these ideas visible. Founder notes that there was no infrastructure or platform to show their idea, even though it did not impede their initiative, she believes that the favorable infrastructure can bring up more ideas like theirs:

"They [Sit] did not have an open call for anything. But we knew that there are some organizations that are supported by Sit partially. … In today's world, it really helps that these organizations [like Sit] also understand the value of initiatives like ours [ReStore]. And Sit was understanding it from the beginning. Uh, they of course took it [cooperation] slowly, but, at the same time, we did not expect them to sponsor our idea right away. … For me, it would be great if Sit encouraged students to work on their ideas besides the university. I also know that it can be a problem to have that so often, but they were really great with us, so I believe that something like this could easily happen to other students."

During the AGM the researcher encountered the situation when the volunteers were informed that Sit gave to ReStore another building in Moholt. On the 7th of April, 2022 the following note was made by the researcher:

"Volunteers are gathered at the old kindergarten building [ReStore facility], the leader announces that Sit gave to ReStore another building and it is a surprise for everyone, so this meeting will be at the new place. … The volunteers discuss that it is a right time for a new building because last summer the amount of donations was huge and the expansion of ReStore is essential."

6.4.3 Cooperation

This subcategory consists of the situations that were described by the respondents as nudging. Such codes like 'supportive organization', 'accepting organization', 'appreciating organization', 'easy in communication' belong to this subcategory. For example, the Founder of ReStore says the following to describe the need for cooperation:

"We just needed a bit of push to make it happen."

She also emphasizes the good attitude of supporting organization towards ReStore:

"And they [Sit] were never too critical of solutions. They were very supportive. I think they saw that we were ready to do what we say we were going to do. The fact that we actually did things was important for Sit. We were not there just to try."

Furthermore, she believes that such support should be provided to other initiatives:

"For me, it would be great if Sit encouraged students to work on their ideas besides the university. I also know that it can be a problem to have that so often, but they were really great with us, so I believe that something like this could easily happen to other students."

The observation notes show that the support of Sit is also highly appreciated by regular volunteers. For instance, during the observations conducted at ReSykkel on the 16th of November the researcher noted:

"The leader says that there is an opportunity that Sit will give away some abandoned bikes and he will need some volunteers next semester to collect bikes from Sit. The volunteers are quite happy that Sit is cooperating with ReSykkel and help to reuse the bikes which could be thrown away. They also say that it feels like their volunteering is perceived as more important when Sit taking volunteers' work into consideration and tries to help."

As a follow up of the observed situation, the researcher went to the ReSykkel bike collection that was mentioned before. Thus, on the 21st of January, the researched made a following note, where the cooperation between Sit and ReStore resulted in dozens of saved bicycles:

"18:00 – volunteers and the leader gather at Sit office in Moholt. They see that there are dozens of bikes, they are in all different conditions. Volunteers had to go forth and back several times to deliver all the bikes to ReSykkel."

6.4.4 Promotion

The promotion subcategory includes the idea of the promotion of the student organization via the supporting organization in order to attract more people and to inform people about the services the organization provides. For example, Leader shares that she got to know about the ReStore at NTNU during her class:

"She [ReStore representative] had a presentation about it [ReStore] in our class and I was already really interested in the circular economy."

Founder notes that the Sit was important to have cooperation with because they have an access to a lot of students, which gives an opportunity to inform about ReStore's activities:

"We believed that the best partner was Sit and that working with Sit would make the most sense. We would be really happy to cooperate with them. Also, Sit was very important for us because of the access to students. But we were not dependent on Sit, our plan was not based on Sit. But if we would have no answer from Sit, we would contact other organizations, which we already started to do not waiting for the Sit response."

Section Summary

Therefore, the naturally emerged theme of institutional support showed that the youth is aware of their capabilities and admits that different support like funding, infrastructure and cooperation are necessary to implement their initiatives. Furthermore, findings suggest that the cooperation helps the youth initiatives to be promoted to the wider audience and grow faster.

6.5 Youth as an Actor

This category describes the youth traits that help them to be successful in the case of ReStore. The category includes such traits and qualities of the youth as ambitious, experienced and mindful.

6.5.1 Ambitious

Ambitious is a subcategory that includes the situations where the respondents showed themselves as goal achievers and problem solvers. For example, Founder shares that the most important aspect of ReStore establishing was the fact that they wanted to make ReStore happen no matter what. She describes her experience of launching ReStore:

> "We were really stubborn. We were driven by the idea we had and we believed in it a lot. Another thing is that all three of us [founders] were this way, I guess. So every time Sit had some additional questions, we would go and solve them and then come back to Sit with the solution we had. … We're there to try and do it, make it happen. We weren't going to stop after the first obstacle."

She also emphasizes that it would not matter if the supporting organizations rejected their proposals, they would apply to as many organizations as necessary:

> "We believed that the best partner was Sit and that working with Sit would make the most sense. … But we were not dependent on Sit, our plan was not based on Sit. But if we would have no answer from Sit, we would contact other organizations, which we already started to do not waiting for the Sit response."

6.5.2 Experienced

This subcategory implies the experience that the youth gains and is able to implement. The Leader has a feeling that ReStore members have enough experience to share their knowledge and experience if the same projects are implemented somewhere else.

> "We think ReStore can benefit Trondheim a lot. Cause we have a lot of volunteers and we know how to attract and motivate them and we know how our organization work. So, a lot can be done if we share our experience and resources."

Founder shows preparedness of her and her colleagues to establish the organization:

> "We already went to Sit with a registered organization and bank account and a team of, I think like 30 people, our friends were up for helping ReStore happen. So when we presented the idea to Sit, we wanted to back it up with the fact that we are serious about this project and that we want to do this and that we have people who are ready to volunteer for this cause. And these 30 people were mostly just our friends who were same amount involved in the same questions."

6.5.3 Mindful

This subcategory represents the situations when the youth acknowledges the challenges of the today's world and ready to act accordingly. For instance, User 1 is aware that she contributes to the environment, which is good. She also understands that even she is not volunteering at ReStore, there is still some difference that she causes:

> "I think I'm doing something good by going to ReStore and looking for the things that I can get from there instead of going to a store and get it all new and then throw it in the trash after I'm done using it."

Founder notes that the beliefs of the ReStore founders made the ReStore concept exist. She also acknowledges that people speak a lot about sustainability, but it needs actions not words:

> "It happened because we really believed in it and we just pushed forward. That was the most important aspect, I think the action is the biggest thing sustainability needs right now. We all need to make small steps towards it, I think."

Section Summary

The youth as an actor in the CE transitioning shows such qualities as ambitions, unique experience and mindfulness. The findings suggest that the youth who initiated the studied organization is very goal-oriented and quite self-sufficing, at the same time their goals and actions are mindful.

7 Conclusion

7.1 Research Questions

The objective of this study was to investigate how the youth in Trondheim is engaged in the CE practices by analyzing the experiences and activities of the young people who belong to the ReStore, the organization that was selected as a case study. The organization is analyzed and placed within CE system based on C2C model by McDonough and Braungart (2002). The three spheres of transformation by O'Brien and Sygna (2013) and structuration theory by Giddens (1986) were used to analyze the youth engagement.

7.1.1 Research Question 1

Three research questions were posed. The first question sought to understand youth motivation. The research asked: What are the drivers of youth initiatives for circular economy in Trondheim?

The results of the study suggest that the main driver of youth initiatives are personal/academic interest and activism. Together with that is was found out that economic motives often bring the youth to the CE activities and, later, may make them more involved in those initiatives.

Notably, relation between the degree of involvement and amount of motives was identified. The more the interviewed were involved into the organization, the more motives they had to maintain their engagement or deepen this engagement. Whereas the less interactions the interviewed had with organization, the less motives they had (See Appendix 3).

7.1.2 Research Question 2

The second research question aimed to explore the CE activities that the youth participated in. The study asked: How is the youth involved in the circular economy in Trondheim?

According to the study, the youth in Trondheim is involved in the practices related the CE through the studied organization. Particularly, the studied youth adopted the CE practices like sharing, maintaining, prolonging, reusing, redistributing, which covers the first 2 loops in technoshere of the CE system. (McDonough & Braungart, 2002) Moreover, the youth organized and provided the infrastructure for other students to easily participate in the CE activities.

Notably, the findings show that participation in the CE activities is not always conducted in pursuit of contribution to the CE. The degree of CE awareness among the interviewed had no correlation with the degree of their involvement in CE practices (see Appendix 3). The interviewed, who never heard about the CE, were a board member and a volunteer, while the interviewed who were aware of CE and even had an academic background in sustainability were not the members of the organization. Furthermore, this phenomenon was acknowledged by one of the interviewed. Evidently, individuals can contribute to the CE unintentionally and it is still the source of agency that benefits to the CE transitioning. The findings support Giddens' argument that actions conducted unintentionally can still influence or/and change the system.

Another finding suggests that the interviewed realize the importance of mindset change. Many of the respondents acknowledge that they promote the idea of reusing, they also noted that it is not accepted by everyone to have the used goods. The used or second-hand goods are seen as poverty. Stahel's (1982) argument that the psychological obstacle is a challenge on the way towards sustainable society is still relevant. The research shows that despite that it has been 40 years since these obstacles were articulated, the problem still remains.

7.1.3 Research question 3

The last research question sought to find out if the CE and youth engagement could be mutually beneficial and how. The research asked: How can the circular economy utilize youth engagement and how does this engagement empower the youth?

First of all, the results of the study offer that the youth that engaged in the CE practices in Trondheim show the following traits: motivated, goal-oriented, mindful, experienced and stubborn. All these features can characterize the youth as an active and rational actor that capable of actions toward CE transitioning.

The findings show that the studied youth employed skills (like repairing) and behavior (like reusing, sharing) that are favorable for the CE transition. Second, the youth was able to found the organization and expand it. Third, some of the interviewed experienced a change in their mindset and all of them emphasized that the main to more sustainable living is a change in people's minds. The gained practical skills of the youth together with their personal beliefs and motivation to act and create structures can be utilized to fill the gap in the social dimension of CE development. However, it is not effective unless the political sphere is involved. According to the theoretical framework of three spheres of transformation (O´Brien & Sygna, 2013), change must happen in all three spheres for the system to transform. Notably, the interview findings show high concern of the youth related to institutional support, which was naturally emerged category for the study. That justifies the framework and also shows that the actors who exert their agency is usually aware of the obstacles they have on the way to transformation.

Moreover, as the framework of the three spheres of transformation suggests, the personal sphere has the bigger leverage on the transitions, which is also supported by the results of the study. The interviewed shared that in the beginning they only had personal ideas and beliefs to reduce waste in a student village, and they had to put a lot of effort in this idea (like making a project plan, creating a team of volunteers, solving all the questions and not stopping before the obstacles), then, they managed to get support like facility from supporting institution, and later they started to act within practical sphere by reusing, sharing and so on. This also justifies Giddens' argument that institutions that are favorable for actors increase the power of their agency, and vice versa.

According to the conducted research, the youth that was involved in the studied organization was empowered by gaining knowledge and new skills, and by getting a sense that everything is possible and a sense of belonging. Notably, the respondents, who had fewer interactions with the studied organizations, had no feeling of empowerment at all (see Appendix 3).

7.2 Research Contributions

The results of the study contribute to the literature gap on the social dimension of the CE. The empirical findings contribute to the case study literature of the organizations related to the CE, volunteerism and youth engagement. Moreover, the organizational model that was presented in this thesis was never studied before.

The findings provide a better understanding of how the youth is involved in the CE activities and how the extent of their involvement influences their motives for further engagement. Moreover, the relation between CE awareness and degree of engagement in CE activities was investigated.

Furthermore, the results show that the CE institutions and the youth can benefit from each other by relying on cooperation. This study addresses the need for the institutional support of the youth initiatives within the CE.

7.3 Limitation and Further Research

First of all, this study is limited in the ability to replicate the findings of the youth engagement in CE in other contexts like other countries and cultures. The Norwegian context is quite specific, nevertheless, it can be assumed that similar findings could be observed in the student cities of Nordic countries. Further research should investigate the wider scope of the youth initiatives that relate to circularity.

Second, the approach of a single case study does not allow to have a broader look at the youth initiatives and activities within the CE system. Therefore, the generalization of findings may be affected by the fact that not enough cases were analyzed. For further research, multiple case study approach should be applied to get an overview of youth engagement in the CE. As for analysis, the research is limited to the used frameworks and investigated concepts. Further research should focus on the different aspects of youth engagement.

Third, the results of the study may be influenced by the researcher's personal attitude to the studied organization. The researcher has acknowledged such a possibility and chose the research methods and approaches that do not contradict the relations between the researcher and the organization.

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Appendices

Appendix 1: Interview Guide

Background, personal involvement
1. Could you please introduce yourself? Student - What do you study? Where are you from? International?
2. How do you relate to Restore? Board, volunteer, user
3. How did you start to interact with restore?
What is ReStore
4. What is ReStore for you? What values/concepts does ReStore represents in your opinion, if it does?
5. Does Restore gives something to you personally?
6. What do you think ReStore gives to the student community?
7. What do you think ReStore gives to the local community/ Trondheim?
8. What do you think ReStore gives globally, in case it does?
Circular Economy and Youth Engagement
9. Being member/volunteer/user of the restore, what is it that you give to community? Does your participation influence anything else? Locally, globally, economically?
10. Concept of circular economy. Did you know about this concept before?
11. How do you define and view sustainability, why is it important for you?

Appendix 2.A: Consent Form for the Interviews

Are you interested in taking part in the research project: *"Exploring the role of youth engagement in the Circular Economy. The case of Restore, Trondheim"*?

This is an inquiry about participation in a research project where the main purpose is to study the role of youth engagement in the circular economy and to understand how the youth agency and the circular economy interconnected. In this letter we will give you information about the purpose of the project and what your participation will involve.

Purpose of the project
For my master's thesis I would like to analyze the youth agency in circular economy and look into what motivates young people to participate in different types of projects and organizations. I will be interviewing a variety of people who are in different ways relate to Restore (the student organization founded in Trondheim to solve the problem of unnecessary waste of all kinds of furniture and appliances) to try to understand what motivates the youth to be a part of the circular economy. The following are my research questions:
1. What are the drivers of youth initiatives for circular economy in Trondheim?
2. How is the youth involved in the circular economy in Trondheim?
3. How can circular economy utilize youth engagement and how does this engagement empower the youth?

Who is responsible for the research project?
NTNU is the institution responsible for the project.

Why are you being asked to participate?
I am interviewing a variety of people who are involved with ReStore organization directly and others who are on the outside. My sample will consist of board members of ReStore, persons involved in occasional or temporary volunteering at ReStore and persons who had an experience of interaction with ReStore.
I will be asking at least 8 people to participate in an interview and would appreciate your participation. You were picked because I believe that you will contribute greatly to the qualitative data I am collecting for my master's thesis.

What does participation involve for you?
Participation in my research involves an online interview on Zoom. I will be asking for your verbal consent to use your name, background and your answers to the questions within my thesis. You can choose if you would like your name to be used. The questions I ask will be related to ReStore, circular economy and personal motivation, that will help me answer the research questions posted above. You have the right to withdrawal consent at any time.
If you choose to take part in the project, it will involve an online interview on Zoom, which will take approx. 30 minutes. The interview will be recorded and I will take notes. The recording will be stored in the cloud with a key code to access the recording.

Participation is voluntary
Participation in the project is voluntary. If you chose to participate, you can withdraw your consent at any time without giving a reason. All information about you will then be made anonymous. There will be no negative consequences for you if you chose not to participate or later decide to withdraw.

Your personal privacy – how we will store and use your personal data

We will only use your personal data for the purpose(s) specified in this information letter. We will process your personal data confidentially and in accordance with data protection legislation (the General Data Protection Regulation and Personal Data Act).
My supervisor, supervisor's assistant and I will be the only ones with access to your personal data. There will be an access code put on the recordings in order to prevent outside access. Your data will only be stored while I am writing my thesis and will be delated once finished on May 18th 2022.
It will be your choice if you would like me to use your name or background in connection with your answers. It is not a requirement and will only be used with your consent.

What will happen to your personal data at the end of the research project?
The project is scheduled to end on the 18th of May, 2022. After the conclusion of my project the data and digital recording will be delated.

Your rights
So long as you can be identified in the collected data, you have the right to:
- access the personal data that is being processed about you
- request that your personal data is deleted
- request that incorrect personal data about you is corrected/rectified
- receive a copy of your personal data (data portability), and
- send a complaint to the Data Protection Officer or The Norwegian Data Protection Authority regarding the processing of your personal data

What gives us the right to process your personal data?
We will process your personal data based on your consent.
Based on an agreement with NTNU, Data Protection Services has assessed that the processing of personal data in this project is in accordance with data protection legislation.

Where can I find out more?
If you have questions about the project, or want to exercise your rights, contact:
- NTNU via Ståle Angen Rye, Amalie Østhassel and Iuliia Volchkova.
- Our Data Protection Officer: Thomas Helgesen
- Data Protection Services, by email: (personverntjenester@sikt.no) or by telephone: +47 53 21 15 00.

Yours sincerely,
Project Supervisors: Amalie Østhassel   Ståle Angen Rye   Student: Iuliia Volchkova

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Consent form
I have received and understood information about the project "Exploring the role of youth agency in the Circular Economy. The case of Restore (Trondheim)" and have been given the opportunity to ask questions. I give consent:
- ☐ to participate in an interview
- ☐ for information about me/myself to be published in a way that I can be recognised (my name, age, position, background)

I give consent for my personal data to be processed until the end date of the project, approx. May 18th 2022

(Signed by participant, date)

Are you interested in taking part in the research project:

"Exploring the role of youth engagement in the Circular Economy.

The case of Restore, Trondheim"?

This is an inquiry about participation in a research project where the main purpose is to study the role of youth engagement in the circular economy and to understand how the youth agency and the circular economy interconnected. In this letter we will give you information about the purpose of the project and what your participation will involve.

Purpose of the project
For my master's thesis I would like to analyze the youth agency in circular economy and look into what motivates young people to participate in different types of projects and organizations. I will be observing people who are involved in Restore activity (the student organization founded in Trondheim to solve the problem of unnecessary waste of all kinds of furniture and appliances) to try to understand what motivates the youth to be a part of the circular economy. The following are my research questions:
1. What are the drivers of youth initiatives for circular economy in Trondheim?
2. How is the youth involved in the circular economy in Trondheim?
3. How can circular economy utilize youth engagement and how does this engagement empower the youth?

Who is responsible for the research project?
NTNU is the institution responsible for the project.

Why are you being asked to participate?
I am interviewing a variety of people who are involved with ReStore organization directly and others who are on the outside. My samples will consist of board members of ReStore, persons involved in occasional or temporary volunteering at ReStore and persons who had an experience of interaction with ReStore.
I will be observing the activity of ReStore organization. Since you are a member of ReStore it means that I will observe you and your interactions with other members. I would appreciate your participation because I believe that you will contribute greatly to the qualitative data I am collecting for my master's thesis.

What does participation involve for you?
Participation in my research involves an observation, which will be conducted for two weeks. I will take notes. I will be asking for your verbal consent to use your name, background and your answers to the questions within my thesis. You can choose if you would like your name to be used.
You have the right to withdrawal consent at any time.

Participation is voluntary
Participation in the project is voluntary. If you chose to participate, you can withdraw your consent at any time without giving a reason. All information about you will then be made anonymous. There will be no negative consequences for you if you chose not to participate or later decide to withdraw.

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(Signed by participant, date)

Appendix 3: Results Matrix

Source: Researcher's own table based on findings from the data analysis

Pseudo nym	Academic background	CE aware ness	Motivation				Empowerment			
			Economic	Scoial	Personal	Activist	Leadership	Knowledge and Skills	Everything is Possible	Sense of Belonging
User 1	Sustainable Energy	Yes	✓							
User 2	Natural Gas Technology	A little	✓							
User 3	Sustainable Architecture	A little	✓							
Volun teer 1	Reliability, Availability, Maintainabili ty and Safety	A little	✓	✓	✓			✓		✓
Volun teer 2	Sustainable Energy	Yes	✓		✓	✓	✓	✓		✓
Volunt eer 3	Childhood Education	No	✓	✓		✓	✓			
Board member	Music Communicati on Technology	No	✓	✓		✓		✓	✓	✓
Leader	Sustainable Architecture	Yes		✓	✓	✓	✓	✓		✓