UNIVERSITY OF GOTHENBURG
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# How can a trash bag fee be implemented in Gothenburg?

Investigating the innovation of implementing a fee based trash bag system in Gothenburg.

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# Contents

# Abstract

This study aims to find the answer on how the innovation of implementing a trash bag fee in Gothenburg is possible. Background information was used to review effects that can be observed in municipalities of Switzerland where this concept is used. In addition an understanding of the goals and conditions available in Gothenburg were investigated. Seven professionals were questioned in a semi-structured qualitative interview, to gain valuable insight and understanding of the situations. This list included politicians and employee from Vatten och Kretslopp. Renters such as Poseidon (largest one in Gothenburg) and HSB. Consultants in the field of sustainability and an environment focus were interviewed (Melica) and a project leader at Älvstranden Utveckling, working with the infrastructure and development of the growing city Gothenburg and its goals. An interview by Renova, the waste management of the city, was conducted to better understand the conditions true to Gothenburg. Residents living in apartments were also questioned through a structured interview by reaching out to the public within the geographical area of Vallgraven (city center), a total of forty people shared their answers. The pros and cons of the innovation could therefore be found out, how could be implemented, as well of it was perceived by the public. Gothenburg has high set goals in terms of sustainability and is prepared to use political instruments. Residents were a bit hesitant to the novel idea they had to answer on the spot but agreed that the county would have to be in charge of it and that it would help people reflect upon their waste management, such as increasing recycling. Professionals thought the idea was interesting, some supposed that a change must be made through changing habits and people would get used to it. Yet the idea is fair compared to weight tariff used in many municipalities in Sweden and its positive effects. The innovation could be implemented per municipality, if lobbied by a politician to change the Renhållningsförordning who has the authority to implement the change, which the trash facility management who wins the contract of Gothenburg would have to enforce according to the principles stated by the municipality.

**Thanks:**

Special Thanks to the participants in the structured interview and the professionals who were kind enough to partake in the interviews and share their views and opinions as well as their precious time. In addition, I would like to thank my supervisor, for valuable advice and being available for questions and discussions.

**The introductory section includes an introduction to the topic, a background which contains a summarization of prior observation of the innovation and examination of current standings concerning goals and mission for sustainability in Gothenburg. In addition this section entails the purpose, research question as well as the structure in which the report is created by.**

# 1. Introduction

The paper seeks to explore how the innovation of the rule to charge a fee for trash bag can be implemented in Gothenburg. Today there are ca 216 000 apartments in this city (Bostadsbrstånd, 2013). In average each person produces 466 kilograms waste a year, a steadily increasing number (Avfall-Sverige, 2016). This totals to a vast amount of waste in Gothenburg. An investigation os made to find whether the social innovation is valuable and possible in the conditions true to Gothenburg. Sustainability is a topic which concerns all, citizens, the town, city, municipality and nation. The cause for environmental issues is human behavior. The cause of the problem also provides the basis for the solution, as Togersen and Ölander state (2003):

*"Environmental and resource problems are the result of, and can only be solved by, collective action"* Page 226

The idea is that an implementation of the innovation leads to change in people's consumer behavior concerning recycling and consumption and thereby aid environmental incentives. The designated bag is to be used to dispose trash, which is acquired at about twenty kroner each. If people fail to comply by the rule, they suffer a fine. The system has been employed in many municipalities in Switzerland (BUWAL, 2001). The idea is designated towards apartment residents who do not suffer the weighted-tariff of trash. It is especially targeting urban settings, due to their comprised space and larger number of apartment residents in Gothenburg.

## 1.2 Problematization of Trash and Sustainability

As people buy goods they may not be considering where and how to dispose it. The society wants consumers to reduce, reuse, and recycle but contradictory also to consume to suit businesses and produce taxes and jobs. (Szmigin and Piactini, 2015). The desire is to bring attention to the complete cycle of the product that is purchased. Several forces hinder this mindset, for example inexpensive products or planned obsolescence. The waste produced because of consumption

continues to be a concern. (Szmigin and Piactini, 2015). Can this innovation bring about this consideration of the entire cycle and thus have an effect.

Is this possible in Gothenburg? The country of Sweden which is globally known for its environmental efforts and wants to continue to grow this brand (Korosec, 2013). It is a practical idea that has been enforced in Switzerland and appreciated among citizens (BUWAL, 2003). It is seen as just and good in its aim, such as the reflection on trash disposal it enables and thereby also the consumer behavior that produces the trash in the attempt to redirect material from solid waste streams and recycle and compost more. (Szmigin and Piactini, 2015 and Ebero et al, 1999)

Will the Gothenburg apartment resident respond to the innovation and how will the individual react? What is known is that it has worked in another European nation that has been recognized for its sustainability (Gummow, 2014) (BUWAL, 2003). Sweden and Gothenburg pride themselves in being a sustainable nation, but there are more steps possible to strengthen this aspect. The simple low technology solution of charging for trash bags is one option. A goal by Göteborg Stad is to use political measurement instruments to achieve this. Could this be an opportunity for change and the possibility to come closer to a sustainable city? (Göteborg Stad, 2016). The study seeks to look how the innovation can be implemented by its potential effects such as supporting the goal to be sustainable. This is conducted by looking at users and community members in charge of such questions and their perception of this innovation. Consumer behavior, for instance, concerns the totality of a consumer's decisions, all the components affecting it, including trash and the management thereof (Hoyer et al., 2012). Recycling is a major technology solution to decrease the amount of solid waste and aid the circular economy, the trash bag fee is a low technology solution that has motivated Swiss people to recycle more and consume less (BUWAL, 2002, Ebero et al, 1999).

## 1.3 Background

Gothenburg possesses plans to form measures to minimize waste, increase recycling and thrive for a clean and sustainable township (sopor.nu, no date). During 2012 to 2013 the amount of trash has grown 1.1 percent in one year (Avfall Sverige, 2013), a steady increase can be observed. The development has also been tracked during a longer period of time, since 1975 until 2013 trash has increased by sixty-nine percent per household (Avfallsverige, 2013). The sanction follows the cause principal, whoever created the trash suffers the cost of disposing it. Today an individual in

St. Gallen, where the innovation was first integrated, creates 214 kilograms of trash every year, about as much as was produced forty years ago. (SRF, 2015). A study has been conducted to review the impact the system has had in the municipalities, the statistics and the public opinions reveals that people reflect and consider the trash amount produced by their consumption and people recycle thirty percent more as well as solid waste decreased with thirty percent after its implementation (BUWAL, 2003). In addition, the idea has saved the municipality twenty percent in costs of their waste management (BUWAL, 2003). Göteborg Stad highlights consumption to be a large contributor to climate impact, an estimated eight ton of carbon dioxide is generated by each resident a year, a figure that has increased steadily during the past two decades. In a model they propose that nearly half the emission is caused by consumption, which also causes trash (Göteborgs Stad, 2015). It is argued that they need political measures and instruments to break the current pattern, which ones are not clearly stated and perhaps not determined (Miljön I Göteborg 2015). Göteborg Stad claims that they wish to act as a forerunner in sustainability but today Switzerland scores higher as a sustainable nation (det gör Göteborgs Stad, 2016 and Gummow, 2014). Waste management can be depicted in the "trash stairs" (Recycling, 2016), where steps are depicted to symbolize an order where each step is an opportunity to handle trash in the process of being disposed. The first one is minimizing, hence refrain from or decrease consumption and buy products with less trash, for example packaging. The second step is reusing, by donating it or fixing the item instead of getting rid of it. The third step is recycling or compost, if that is not possible at the next step the waste is burned and transformed to energy. The last step is if no other options are available or the ability to reuse the resource is not there, resulting in being deposited in caverns. (Recycling, 2016).

FIGURE 1 TRASH STAIRS BY RECYCLING (2016)

| |
|---|
| **Minimize** |
| **Reuse** |
| **Recycle and Compost** |
| **Burn (for energy)** |
| **Landfill (no other options)** |

The innovation targets the first and second step and the report aims to see if the idea has an effect on consumption and consumer behavior as well as the political incentive to support it.

It is the municipality who is responsible of education of an environmentally friendly and sufficient behavior, this includes informing residents on how and where to recycle (sopor.nu, vem gör vad, online, 2016). In addition the municipality possesses plans to form measures to minimize waste, increase recycling and thrive for a clean and sustainable township (sopor.nu, vem gör vad, online, 2016).

**The following part covers the purpose of the paper and the research question to be answered, as well as the aim of the study.**

# 2. Purpose

The purpose is to find how the system of imposing the policy of using only designated bags to dispose trash, which are acquired at a cost, is possible in Gothenburg. The aim is to support sustainability and encourage people to reflect on their trash management. It is addressed towards people living in apartments, as their disposed trash does not suffer any cost consequences as house inhabitants do who by payments based on the weight of the trash. The aim is to answer the research question by employing the theoretical framework and follow the method of qualitative interview questions and quantitative structured interview questions to produce empirical data to analyze the potential in this context.

It is enabled through conducting semi-structured qualitative interviews with professionals in this context at different departments who are engaged in the purpose of trash management. In addition apartment residents in Gothenburg are questioned in a structured quantitative approach, to find their opinions and reactions to the idea. The gap which can be observed to why this innovation is not implemented in Gothenburg, yet the nation thrives to be sustainable and decrease the amount of trash.

## 2.1 Aim

The aim of the empirical study is to gather the experience and behavior of the individual in response to the idea as well as the insight professionals share in order to answer the research question. This is used as the basis of the analysis.

## 2.2 Research Question

The research question poses:

*How can the innovation of a trash bag fee be implemented in Gothenburg?*

## 2.3 Structure

The structure of the paper starts with the introduction, which presents the background and introduces the topic, and problematizes the field. The purpose, research question and an aim is stated and the theory is reviewed. Thereafter the method is presented, which describes how the research questions intends to be answered. It states delimitations and strategies. The empirical material is shown. The data with use of the theory generates the discussion. The discussion also states the positive and negative aspects of the innovation. It reveals further research that can be made and other considerations. The discussion is organized according to the structure present in the theoretical framework. The conclusion concludes the report and restates and answers the research question. Personal reflections are made at the end of the report.

# 3. Theory

**The next section covers the theoretical framework chosen for the purpose and aim of this report. It covers the five steps to look at Social Innovation: Perspectives and Considerations, Related Business Concepts, Instruments and Application, Best Practices and Implementation and Looking Ahead. In these steps the topic is reviewed and theories of financial incentive, consumer behavior, waste management, and motivational theory are included.**

## 3.1 Social Innovation

Social innovation can be a useful concept for a sustainable future (Osburg & Schmidpeter, 2013). Many environmental challenges are posed upon society and are costly to address. Therefore there is a motivation to choose goals to balance cost and benefits (Alänge & Lundqvist, 2013). Policies are implemented to manage market failures (Alänge & Lundqvist, 2013). Sustainable business development thus can be perceived as a try to make the world a better place, not purely by a top-down intervention but through government agencies and programs (Alänge & Lundqvist, 2013). Social innovation can take place within the government, addressing societal challenges to promote common welfare (Osburg & Schmidpeter, 2013).

The tragedy of the commons is a present threat in the society, the simple definition is that the whole benefit of using the common is personal while the consequence is suffered by all. Common is shared resources such as land, seas, materials and so on. It explains why consumers, despite increasing knowledge in the subject of sustainability, continue to follow an unsustainable lifestyle and path. People seem reluctant to use new technologies and solutions due to this concept. The result and tragedy is that each person in the collective pursues his or her interest. When everyone does so, it causes devastating effects in resource depletion, resulting in a disservice to everyone. The tragedy of the commons is a theory useful to explain why awareness may be present but not translate into changes in behavior. (Alänge & Lundqvist, 2013)

Hardin (1968) states: *"The rational man finds that his share of the cost of the wastes he discharges into the commons is less than the cost of purifying his wastes before releasing them." Page 1250*

This is a description of where a rational consumer has things he does not need, so they become waste. He chooses to discard this waste on the behalf of the commons, which means the cost is externalized. The state can decide to legislate the cost and force the man to purify his waste at his

own expense, which internalizes the cost of the consumer. The responsibility is moved as the associated cost transfers to the consumer from society. (Alänge & Lundqvist, 2013)

Some argue governmental intervention is needed to maneuver it, other suggest entrepreneurs should be introduced to rethink and achieve transformative change (Alänge & Lundqvist, 2013). Until such a change can be realized, the production of the bad continues, habits are formed and researchers call this a "lock in effect" as people get used to behaving badly and the effects spiral. Everyone makes pursuits in their own interest, if a cost is associated with the negative effects of the commons no one is theorized to voluntary to pay it. People commonly do not voluntarily make personal sacrifices for the collective, the motivation to do so does not seem immediate enough to themselves. (Alänge & Lundqvist, 2013)

A perfect market entails that only the consumer and the seller are affected by the transaction, the third party is not involved. The government is supposed to provide such an unbiased market. If bias does occur, the government is supposed to offset this imbalance by policies or legislation-covering indirect and direct costs not appearing in the transaction between the seller and buyer. Consumer perceive a loss greater than a gain. (Alänge & Lundqvist, 2013) Leaders in society see that innovations are needed to react to current challenges. Proactive engagement is called for. (Osburg & Schmidpeter, 2013)

### 3.1.2 Overview and Structure

The structure of which the theoretical framework is based on consists of five parts, starting with perspectives and considerations on social innovations. Related Business concepts is linked to social innovation such as social entrepreneurship. In the third stage, instruments and applications are outlined. In the fourth part best practices and implementation are described. At last, a look ahead is part of the overview, seeing and evaluating future implications. (Osburg & Schmidpeter, 2013)

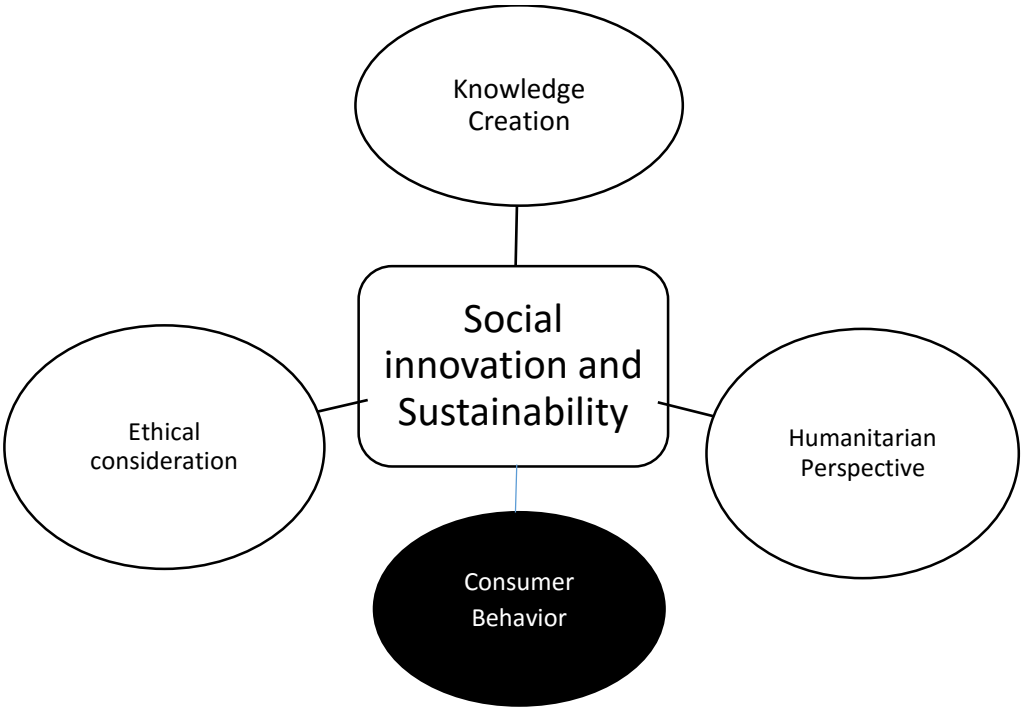
**TABLE 1 OVERVIEW: SOCIAL INNOVATION SCHMIDPETER (2013) PAGE 2**

1. **Perspectives and Considerations**
2. **Related Business Concepts**
3. **Instruments and Applications**
4. **Best Practice and Implementation**
5. **Looking Ahead**

## 3.2 Perspectives and Consideration

Perspectives and Consideration is divided into the following categories (Figure 4) and their connection to social innovation and sustainability:

**FIGURE 2 ADAPTED VERSION OF PERSPECTIVES AND CONSIDERATIONS BY OSBURG AND SCHMIDPETER(2013) PAGE 2**




Innovation is an important driver in the society. It can be defined as:

*"…the creation and adoption of somethings that creates value…include the process of transforming the idea into a solution that creates value for… society"* (Osburg & Schmidpeter, 2013), page 14

It is a constant transformation, developing different aspect and concepts of innovation (Osburg & Schmidpeter, 2013). No serious issue can be solved singlehanded. The social element makes it a social innovation according to Osburg (2013), it gives the direction and focus of producing a positive effect for society (the common). They meet social needs and create collaborations:

*"Social Innovation needs to be a process that is driven by innovation and adds a goal and value system to create sustainability" page 17* (Fontrodona, 2013)

Sustainability is defined as the ability to endure from an environmental, economic and social aspect (Osburg & Schmidpeter, 2013). Yet it is also argued that the concepts has many interpretations and meanings and thus has hindered its development to become more common and widely adopted, it can occur in many spaces such as innovation in the public sector (Osburg & Schmidpeter, 2013).

### 3.2.1 The Relation between Ethics and Innovation

Ethics can be described as a moral compass, what can or cannot be done, it is a field of knowledge concerned with the behavior of humans and how to improve it. The way procedures are done, develops who people are (their actions change them). In addition, actions form the world, this concept introduces the role of ethics into the equation, prompting people to evaluate the impact of their actions. The actions makes a person better or worse, and inspiring others at the same time. Ethics tries to pass judgment upon good and bad, it observes and guides. It is a constant debate on rules of conduct on how to move in the right direction. Fontrodona (2013) states that the first step towards doing good is avoiding bad. (Fontrodona, 2013)

Humans have the capability to transform and affect the environment we live in, problems can occur from careless behavior. The economic development ensures more opportunities but also give rise to new problems, such as increasing rates of consumption causing more trash. Development without ethical implications do not ensure improvement for the environment and the society. More progress inclines an increased need and debate for ethics because new prospects are introduced which do not consider all effects on stakeholders. It may cause efficiency in some areas but bruises in other. Some argue therefore that solution lies in a legal framework to limit certain actions and habits. Yet legal interference also produce ways to avoid following the law. (Fontrodona, 2013)

Extrinsic reason has to do with externally obtained results, following the interaction with the environment. Intrinsic reason originates from within, creating personal satisfaction. The third reason is social, concerned with actions and reactions of other people. Commonly a mix of these reasons come into play. People generally like to feel rewarded in all forms of reason. Yet external feedback may cause personal satisfaction, which allow them to intervene. (Fontrodona, 2013)

A good comprehension of ethics in the connection to innovations commonly result in a positive view. It changes how ideas are conceptualized, which includes the humanitarian perspectives. It is argued that ethics inspires and encourages social innovation. (Fontrodona, 2013)

### 3.2.2 Humanitarian Perspective on Social Innovation

Development concerns improving conditions. The nations have the power through taxation to allocate resources (Hopkins, 2013). Corporate social responsibility is on the rise, to conceptualize and realize aspects in business decisions and generate value (Hopkins, 2013). It is defined as:

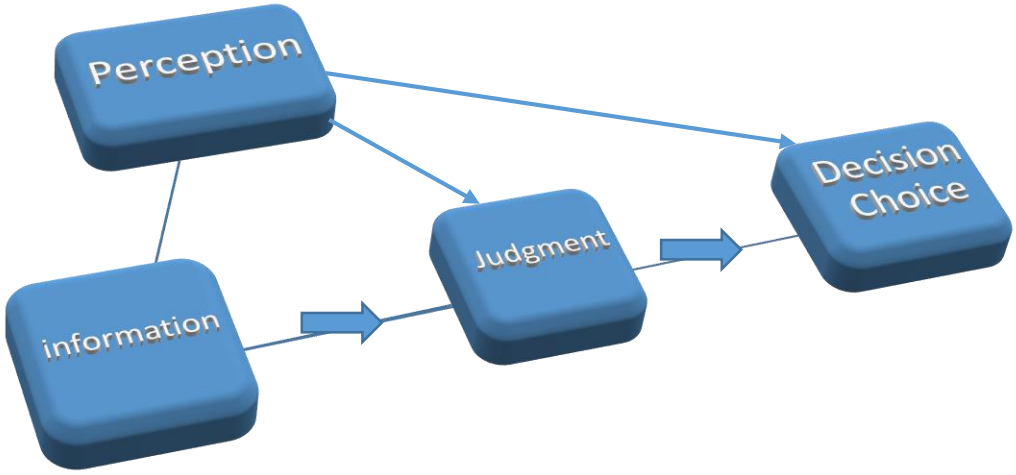
*"CSR is concerned with treating the stakeholders of the firm ethically or in a socially responsible manner. Stakeholders exist both within a firm and outside. The aim of social responsibility is to create higher and higher standards of living and sustainable development, while preserving the profitability of the corporation, for its stakeholders both within and outside the corporation"* (Hopkins, 2012)

The concept needs to be applied across the board to support the brand, intangible assets and be credible while serving the society and environment in sustainably growing. Corporate social responsibility is concerned with how profit is made. Outside the company, corporations can collaborate with the government, promote education in subjects and facilitating good behavior and assisting government in aiding efficiency. Companies who involve themselves outside the company in pursuing better opportunities for people, such as facilitating processes and educating people. Or helping people help themselves and assist the government in efficiency. (Hopkins, 2013)

### 3.2.3 Knowledge Creation and Transfer Effects on Decision Making

The economy consists in many respects of information, relying on intangible assets and its utilization. Governments have recognized that knowledge and innovation colors economic development. The trend has come to affect the public and economic policy. Social innovation is essential in determining how to transfer knowledge. Some knowledge is more easily transferred than others. Knowledge is tacit or measurable (explicit). (Rodgers & Söderbron, 2013)

FIGURE 3 KNOWLEDGE-TRANSFER PROCESS MODEL RODGERS AND SÖDERBRON (2013) PAGE 62




The knowledge transfer decision-making model discussed as depicted above has a broad conceptual framework for examining interrelated processes that impact social innovation decisions. It incorporates the constructs of perceptual processing (framing of a problem), information (both traditional financial and knowledge-based), judgmental processing (analysis of framing/information), and decision choice. It displays the steps of forming a choice, these factors and their relation to one another are important when evaluating a social innovation (Rodgers & Söderbron, 2013)

### 3.2.4 Consumer behavior

Consumer behavior concerns and includes the totality of consumer's decisions, each component affects it (Hoyer et al., 2012).

Different types of consumers can be found, a classification reflects the totality of a person's consumption pattern. The table below lists all the types of consumers as described by Smigin and Piacentini (2015):

TABLE 2 TYPOLOGY OF CONSUMERS BY SMIGIN AND PIACENTINI(2015) PAGE 23

| Consumer type | Description |
|---|---|
| Chooser | Is a rational problem solving consumer, demand genuine options, information and finance options |
| Communicator | Use products to communicate |
| Explorer | Consumers seek places to explore |
| Identity Seeker | Creating, forming and maintaining personal and social identity through consumption pattern |
| Hedonist-artist | Consumption as a tool for pleasure: consumption can fulfill needs and for emotional aesthetic pleasure |
| Victim | An exploited consumer: the consumer is uneducated and unaware of choices, or may have limited choices because of certain conditions |
| Rebel | Using products in a new way to form a conscious rebellion: this may mean consuming differently, less or boycotting, may be considered a rebellion |
| Activist | Desires to fight against corporate greed and seek more ethical consumption |
| Citizen | Possess have rights and responsibilities, awareness of consumerism encroaches in several areas in society |

Another type which is mentioned is the flawed consumer, defined as on whether the consumer thinks about the process and the management of the products he or she consumes ( (Piacentini & Szmigin, 2015).

Consumers have also been attempted to be listed in the description by Dagevos (2005), presenting four types: Page 25

- *Calculating* : is rational, mainstream, efficient and effective, concerned with convenience
- *Traditiona*l: conformist, cost conscious, self-disciplined, fearful of new things and community oriented

- *Unique*: described as fun and impulsive, seeks variety and status, as well as distinction and new things.
- *Responsible*: captured by involvement, altruistic, informed and environmentally aware.

Consumers can choose a reflective mode in their thinking, where they think and put energy into mental process of committing actions. On the other hand, the automatic mode is where the individual operates on routine with no reflections being made, instead happening per automatic. (Szmigin and Piactini, 2015).

The environment where the consumption takes place has an influence on people and their behavior, making it a complex phenome. Governments seek form incentives, such as rewards, to change habits among people. It is argued this method is not as effective and meaningful if the gain is perceived as less important than the loss which is suffered. Schemes have been developed to charge the person for not acting in unfavorable ways. This is called the endowment effect; loss aversion. It displays how people attribute specific values to items in their life depending on the value they perceive it possesses. (Szmigin and Piactini, 2015).

Norms is a meaningful factor for people, known as a set of formal or informal rules that impact behavior. There is a default option in society, which are accepted per default because that is the set up true to the environment a person lives in. (Piacentini & Szmigin, 2015)

The difference between a high involvement decision compared to low involvement decisions is that the first version is followed by an evaluation process (Szmigin and Piactini, 2015). Consumer behavior is influenced by motivation, ability and opportunity. Exposure, attention, perception and comprehension are factors included in this process. The consumer uses the memory and knowledge to behave and consume and attitudes are constantly formed and changed. (Hoyer et al., 2012)

Solid waste disposal is a major environmental subject and has economic agendas, the trash produced can be connected to the economic system that fosters consumer behavior to consume. This causes raw material depletion and lack of recycling which contribute higher usage of virgin materials. Large quantity of packaging are produced to aid sales as well as short life cycles, consumer behavior to decide to want and need more. (Ekvall, 2008)

## 3.3 Related Business Concepts to Social Innovation

### 3.3.1 Social entrepreneurs as Main drivers of social innovation

Social entrepreneurs are the actors driving social change through innovation. Governments are discovering the potential to create social change through innovative approaches. Governments are eager to formulate strategies to create social innovation to handle challenges such as those in the environmental sector. (Schöning, 2013)

Social entrepreneurs share many traits with regular entrepreneurs, they see solution where there are problems. Yet after many years, academics and practitioners have not agreed on a common definition, instead they describe it as a "case definition", where social entrepreneurship takes the action to shift paradigms in a societal way to meet needs depending on the situation. All definitions touch the concept of innovation and social change. Technically speaking entrepreneurship does not have to be innovative. The author proposes:

*"The time has come to equally celebrate and support entrepreneurs who "merely" replicate and adapt innovations with a proven impact" page 113 M. Schöning (2013)*

-Instead of reinventing the wheel. (Schöning, 2013)

Yet the definition has been framed that social entrepreneurship is the process where through social innovation opportunities are exploited to create social and environmental benefits. (Hockerts, 2007)

Scholars argue that social entrepreneurship and social innovation is change created by employing entrepreneurial mechanism to sustain social value with or without the public support. (Agrawal & Hockerts, 20113) (Bhattacharya, 2013)

### 3.3.2 Waste handling

Many people do not know the actual cost of waste. Reports state that the weighed based billing system in Swedish households has had a significant waste reducing effect, as a result of the change in consumer behavior that caused. External motivations may enhance internal motivations because they provide feedback to the consumer through saving cost and being able to review the effect of their consumer behavior (keeping track). Acceptance and legitimacy is important so it has the power to affect consumer behavior. A survey on the weighed based fee reported less waste

generation and increased interest and understanding of waste management. (Dahlen & Lagerkvist, 2010)

In a study of the implementation the weighted tariff of waste, respondent pointed out that massive information campaigns were necessary. Information actually changed consumer behavior. This questionnaire was directed at users, so their answers also depended on their perception. Many reported changing their behavior, but statistically this change was not observed as strongly as the people claimed. (Dahlen & Lagerkvist, 2010)

*"On average 20% less household waste per capita was collected in bins and bags in municipalities with pay-by-weight schemes "*page 29 (Dahlen & Lagerkvist, 2010)

It stated in the study, this was not explained with more recycling, which indicates a change in consumer behavior to form this outcome (Dahlen & Lagerkvist, 2010). Waste production is assumed to be proportional to personal consumer expenditures. It is more meaningful to invest in waste prevention than recycling when minimizing effects on the environment. People can change their consumer behavior by identifying the environmental issue in the decision making, such as choosing material lean products, products with long life spans or second hand items, repairmen, co-ownership and so on. These are some reactions in the aim for waste reduction rooted in consumer behavior. Another example is buying services rather than products or buying a few expensive things rather than buying numerous poor-quality inexpensive products. (Dahlen & Lagerkvist, 2010)

*"Changing the focus of consumption is primarily the responsibility of the consumers"* page 6 (Ekvall, 2008)

## 3.4 Instruments and applications

Marketing is a valuable tool in implementing and realizing social innovation. Users knowledge and feedback can have an impact on the innovation and in collaborations with other actors, developing long-term solutions and communities in being sustainable and economic. In short, there are four steps: finding unmet social needs, generating ideas to address these, distilling them and selecting and pursuing chosen ideas where stakeholders can contribute to the steps. This starts with choosing the relevant goals. (Bhattacharya, 2013)

Trust is an important component, community members may feel that people come to exploit and hence ascribe extrinsic rather than intrinsic motives to the innovation. This factor makes the bridge of trust harder to build and hampering innovation's purpose. Leaders can act as this bridge. Communication is important when implementing a social innovation and information from an independent source is perceived as more credible. Understanding, usefulness and unity play a meaningful role in this context. The values align with that of the user, generated knowledge can aid the relationship and enable this. (Bhattacharya, 2013)

Another tool is measurement, to convince stakeholders of the benefit and effect, there are several ways social innovation can be accounted for in monetary terms and nonmonetary terms depending on what the innovation targets (Bhattacharya, 2013). Edeltraud and Guenther (2013) say education plays a key role. Knowledge can create the conditions to form change, such as the tools to induce behavioral change. The change can create future markets. (Edeltraud & Guenther, 2013)

The cycle of a social innovation arrives at the final stage where the innovation is mainstreamed by being part of society; a systematic change. In the example using technology to reduce carbon, the result has served as an enabler. Often it is more meaningful to develop new ways of organization and paths to allow citizens to consider and think about their own roles and responsibility in the context. (Edeltraud & Guenther, 2013)

### 3.4.1 Financial incentive

Prices have the role of allocating resources, and thus consumer behavior involves abstaining or engaging in activities of trash aversion and recycling as an effect of price (Anderson, et al., 1977). Many resources have no (immediate) price to a consumer, such as the value of recycling or many resources and emissions needed in production of goods such as packaging (Anderson, et al., 1977). Legislatures should impose costs on activities deemed unfavorable for the environment and thereby affect consumer behavior. Such a charge can boil down to a sociological level, to capture the motive of consumer behavior and then transform it. It can be based on the premises to modify behavior on a sociological level. (Anderson, et al., 1977) When the system of returning bottles was established, up to twenty million gallons of oil was saved from producing new bottles (Anderson, et al., 1977) Authorities can use financial tools to affect this behavior and mindset, it regards the change of the focus on consumption. Earnings are used for spending or saving, yet saving is created for future spending. If the fee takes from the earnings, less money is spend on material intensive products,

re-directing consumption. Otherwise less spending indicates reduction of economic growth. (Ekvall, 2008)

Economic incentives can cause so called crowding out effects, undermining the individual's intrinsic morals, non-monetary motivations to change consumer behavior and be conscious of how much their behavior affects trash production. Internalized motivation is much more important than small economic incentive yet monetary incentives, especially associated with convenience, have meaningful effect on trash amount and thus consumer behavior in how consumption looks of products that cause trash. (Dahlen & Lagerkvist, 2010) In the Netherlands the fee on trash volume and weight-tariff reduced collected waste by 38 percent compared to the district who did not use this system (Ekvall, 2008).

## 3.5 Best Practices in Social Innovation

To consume less is not just a goal but an ethical and cultural decision (Oltean, et al., 2013). The stakeholder must be identified in this context (Oltean, et al., 2013). One example is a project, developed by Cambridge University, where students through a plan and toolkit are able to measure, plan and understand what causes carbon footprint and how much. This knowledge enabled them to change their behavior based on this understanding. (Dixson-Devleve & Spence-Jackson, 2013)

### 3.5.1 Environmental Motivational theory

Ebero et al.,(1999) state

*"(the) environmentally responsible consumer behavior as the purchase of products that benefit or cause less harm to the environment than do more conventional consumer goods*" pg 108

Environmentally responsible consumers have high tolerance for new ideas and also locus of control. Other characteristics are related to consumer behavior, such as the personal views on whether pollution and sustainability is a topic which concerns them. Smaller cities seemed to be less concerned with this than larger cities. (Ebero et al., 1999).

Environmental concern is correlates with conservation measures, the aim of using less. A variable which was found to be related to this, was education. (Ebero et al., 1999). Intrinsic incentive (more

self-esteem, pride and connection to community and environment) are more valuable than financial incentive according to Ebero et al., (1999)

People also act environmentally conscious if they feel that they are expected to by the community and owe it. Morals have the ability to affect this. A study revealed that the concern for environmental responsibility was higher among young educated, high socioeconomic status and lived in urban settings. (Ebero et al., 1999).

Self-perception theory dictates that if a person starts behaving environmentally friendly on one way, it may start affecting other areas in the same way as well. People tend to act on behaviors that are easy to perform. It is also stated that if a perceived unfair environmental action is enforced, people oppose it by acting in the opposite manner instead. (Thogersen and Ölander, 2003).

The usage of trash bag charges has made an impact, it has encouraged consumers to be directly involved with the issue of waste, such as efforts in reducing packaging and manufactures responding to this change (Joos, et al., 1999). The awareness the public has of the environment is having only a medium-strong effect on the amount of rubbish being produced (Joos, et al., 1999). The second most important factor to the production of waste is growing costs and fees of waste disposal, following the location of a disposal facility and it's near vicinity. Thereafter the factor health and environmental damage is listed, and at last personal time and effort to collect waste separately. (Joos, et al., 1999) The authors of a study state in their concluding marks:

*"The environmentally responsible behaviour of people must be promoted above all by means of financial incentive and educational systems"* (Joos, et al., 1999) pg 424

## 3.6 Looking Ahead on Social Innovation

Value must be reconsidered and non-monetary forms of value introduced as credible when evaluating worth and reassess what society treasure. A method is needed to sustain and shape behavior that produces and protects value. Social innovation allows for a more systematic understanding between the link of social and environmental problems and thus finding solutions to it. (Painter-Morland, 2013)

Social innovation attracts policy makers. It has the potential to create change in society. Sustainable development raises questions on how life is lived and what factors that contribute to the current state. A principle that is termed 'anthropocene'; described as the time in global history where

humans and their activities dominate the character of the planet (Crutzen & Stroemer, 2000). The ones who crafted the agenda for sustainability are pushed to embark on this development. An evolution where the aim is to satisfy current needs and not endanger future potential or the access of resources available on earth. A paradigm is known as an intellectual perception by a society, agent or individual. (Kuhn, 1970) The development of a new paradigm involves innovation to create a shift and thereby change. The hope is to shape a wider range of considerations and environmental aspects. People become motivated to look at how choices contribute to economic and social development. . Conferences such as Stockholm Environment Conference drew attention to a need for more and new public policies and structures creating greater account to environmental issues. (Osburg & Schmidpeter, 2013)

**The method is stated and discussed as well as contextualized and the forms of the delimitations it includes.**

# 4. Method

Business research is conducted in context of several factors, such as theories, existing knowledge, and assumptions and more (Bryman & Bell, 2013). Theories are reviewed to find what is previously known about the area, what methods are used in their research (Bryman & Bell, 2013). Data is collected to build knowledge (Bryman & Bell, 2013). The research questions forces the most basic issue to come forth in the study, stating what is sought after in the report and guides the entire process (Bryman & Bell, 2013).

## 4.1 Research Design

In the purpose of scientific research, it is ruled that the theoretical literature included must be critically reviewed on its content. These are secondary sources and the interviews serve as primary sources (Bryman & Bell, 2013). Grand theories are used through textbooks, journals and websites on the topic (Bryman & Bell, 2013). A theory is defined as a set of interrelated proposition (Bryman & Bell, 2013). It is to insure validity and reliability and make the result of the study valuable and useful considering the delimitations. The approach is created through a qualitative procedure, where the quality is meaningful rather than singularly focus on the quantity which quantitative studies aim to do (Mayer, 2008). A qualitative approach has the ability to capture the nuances of behavior and attitude in regarding the unknown answer of the research question, quantitative does not through the semi-structured interviews. It is common in the path to reach and capture person's opinions and thoughts (Creswell, 1998). A quantitative approach is also included through the structured interviews. A quantitative method is deemed as useful for the structured interview as the summary of it can be presented in rather numerical concepts (Hair et al., 2013).

The chosen location for the study was Gothenburg. The choice is based on the proximity to the researcher and thereof the ability to reach out to the professionals who concern the topic. In addition, this innovation is implemented within the authority of a municipality in Switzerland, therefore it appeared appropriate to approach the study on the same level and investigate one municipality and its conditions of the idea.

### 3.2.1 Structured Interviews

There are many research methods to conduct an interview, one approach is structured interviews, also known as standardized interviews (Bryman and Bell, 2013). The aim is for all participants (interviewees) to be given the exact same context of questions. Questions are specific and consists of mainly closed questions. (Bryman and Bell, 2013) The questions can be found in the appendix 6.

The standardization to the method is to ensure as little variation due to error as possible, the variation that does occur is described as follows:

*"Variation= true variation plus variation due to error*"

**EQUATION 1 BYRMAN AND BELL (2013) VARIATION PAGE 202**

The intent is that the variation which does occur is true, or else the error can adverse the findings and deem results less valuable. This threat is managed by basing the questionnaire on a previously conducted survey, where the same purpose was investigated in Switzerland. It is adapted to the circumstances true to the chosen geographical area as well as translated from German to Swedish. The adaption include the explanation of the innovation in the procedure as well as choosing questions relevant to the study and respecting a shorter time frame. The path ensures validity as these questions have been reviewed already to be designed to answer the subject at hand (BUWAL, 2003). The survey was conducted "face to face", telephone interviews were not conducted due to the lack of access to a list of telephone numbers of residents in Gothenburg. In addition the concern that people are resistant or hesitant to answer unknown numbers based on caller-id, also played a role in the decision. Telephone conversations cannot engage in observations, research suggests that the quality of data retrieved through telephone interviews is deemed inferior compared to "face to face" interaction (Bryman & Bell, 2013).

The questions were structured and short as the structured method entails. It was meaningful to know the questions well, so the execution of the interview would not differ from each other. The purpose was introduced and explained to the interviewee, as well as clear instructions stated and its time frame. (Bryman & Bell, 2013) Previously, these questions were tested on two people to review them in terms of perception and the duration it required (pilot study) (Bryman & Bell, 2013). Pencil and paper were used to record the answers, in order to code and collect the data for further analysis.

#### 3.2.1.1 Segment

The chosen population was that of central Gothenburg. The sample, known as the segment of the population, were individuals at central spots in the chosen geographical area. The probability of the sample can be discussed, as the researcher does not know who will be at the spots at the given time, providing a level of randomness. (Bryman & Bell, 2013) The time for the collection of data is in the afternoon around rush hour, so the sample is more random due to the assumed larger quantity of people at the chosen places. Another factor, is the personal bias that surfaces as the researcher choses people to approach in the setting (Bryman & Bell, 2013). The chosen places are Grönsakstorget, Kungportsplatsen, Järntorget, Domkyrkan and the proximity of these tram-stops. The spots lie within Vallgraven, an area of central Gothenburg. Vallgraven was more specifically chosen to limit the area of focus and enable a motive for the chosen spots. It was conducted on four different days, one day at each spot, starting at around 16.00. Only days with good weather were picked (no rain), so people were more inclined to stop and answer as the interview was conducted outside. In addition the urban setting possesses limited space and has more apartments than other parts of the city, thus increasing the incentive to limit waste in these areas in terms of transport and amount. Only people who were walking alone were approached, as the potential companion thereby did not have to wait during the interview. People were approached and first of all asked if they had five to seven minutes time to answer the question and whether they lived in an apartment. Many people declined, saying they had no time. At each spot, enough people were asked until ten people agreed to answer the whole structured interview, totaling an amount of forty participants. The answers where reviewed to consider the variety and whether it was worthwhile to continue the interviews due to the wide range of differences, or if the sample had a sense of coherence and more interviews would not deem any more value to the study. Forty appeared to be a sufficient number of participants after such a review.

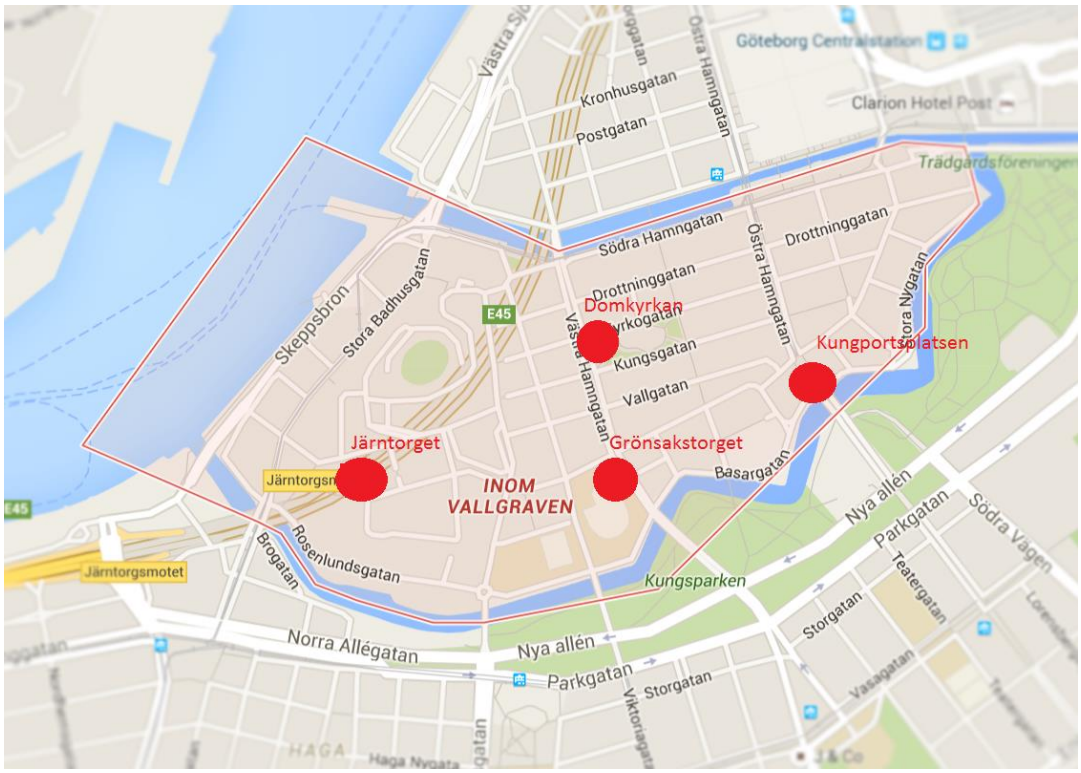



FIGURE 4 MAP OF SITES WITHIN VALLGRAVEN; CENTRAL GOTHENBURG (GOOGLE.MAPS, 2016) ADAPTED VERSION

### 3.2.2 Open Interviews

In addition relevant professionals were interviewed to gain a fuller understanding of how the idea can be used and implemented. It was pursued in a qualitative manner, more concerned with words than numbers as Byrman and Bell (2013) describe. The individuals were contacted by phone and a time for a personal interview was set, all were conducted face to face at the office of the company or the economic library of Gothenburg. The researcher reached out to these people to understand the abstract aspects of the answer to the research question and their opinions regarding the idea;

"*Qualitative interviewing has a much greater interest in the interviewees point of view"* page 466 (Bryman & Bell, 2013).

As the second step suggests in the figure 16.1 page 390 of Bryman and Bell (2013), the sites and subjects are selected, relevant to the research question. The sites were situated in Gothenburg. The specific interviewees were:

- Lia Detterfelt, engineer at Renova, responsible for the trash management of Gothenburg.
- Hilda Kraamer, chief for trash management in Gothenburg, Vatten och Kretslopp
- Jöran Fagerlund, head of board and politician in Vatten och Kretslopp
- Peter Gippart, Environmental Manager (Miljöchef) at HSB
- Gisela Weber, Environmental Manager (Miljöchef) at Poseidon
- Melica, environmental consultant: Stefan Byden
- Erika Svantesson, Project leader at Älvstranden Utveckling

The interview question, serving as a guide, were prepared beforehand in a semi structured manner. The interview could involve into a discussion and conversation about the topic. The interviewee was asked if the interview could be recorded. Here, the opinions of the professionals were sought after and whether they considered the innovation valuable or not. The structure allows the researcher keep an open-mind (Bryman and Bell, 2015). The questions on "how" such an innovation can be implemented were inquired and answers whether it is possible by reviewing the obstacles, opportunities and factors hinder or aid the purpose and realization of the idea. The interviews with professionals were longer and ranged from thirty to sixty minutes. Notes were taken during the course of the interview. The recordings was transcribed and coded.

#### 3.2.2.1 Motive for sites and subjects

The interviewees were carefully selected. The view of the Poseidon, the biggest owner of apartment buildings in Gothenburg, was deemed valuable for the study. The researcher called the head of the organization and explained the purpose, he in turn redirected the assignment to Gisela Weber, who was the appropriate person to speak to this contact. She agreed to a meeting. In addition, HSB was conducted, who also own apartment buildings which are rented. The answers gathered through these meetings were very similar and the contact with a third owner did not appear to add more value to the study. The environmental manager, Petter Gipperth, advised the opportunity to speak with Erika Svantesson at Älvstranden Utveckling. She works the development of the infrastructure of housing and execution of goals posed by the city of Gothenburg.

The reason for speaking to Hilda Kraamer was the redirection to Vatten och Kretslopp when inquiring at Göteborg Stad who would be best equipped to discuss the idea. A different department

concerned with city development answered that Vatten och Kretslopp is occupied with the task of promoting a circular economy and managing existing trash. As the innovation requires the participation of the public sector, a politician was sought after to discuss the topic. No members of the council in Gothenburg were able to partake as they did not participate in unconditional conversations about an innovation that had not passed any of the official criteria to reach the council. If a member was to speak to the researcher, his or her opinions could not be connected to their party and thus he or she could not represent the political views. Instead the board of Vatten och Kretslopp was deemed applicable. The head of the board agreed to a meeting to discuss the innovation.

Environmental consultants were contacted to collect their opinions and views as they are occupied with the concept of sustainability as a profession and field. Melica was contacted after reviewing the purpose and assignments of the company online. Stefan Byden was available to answer the questions and explained from his experience aspects and concerns to the idea.

#### 3.2.2.2 Motive for Theoretical Framework

The chosen theory was picked to enable the formulation of analysis in combination with the data. The structure of social innovation by the editors Osburg and Schmidpeter (2013) was chosen, where five steps were taken into consideration in creating the outline for the theory. The format present in this section served as the format for the discussion. In these five steps additional theories were inserted which appeared appropriate to the topic. It started with a review of the meaning of social innovation, because the innovation which is investigated in this report is labeled as such. Thereafter the perspectives and considerations were looked upon, the ethical implication and knowledge creation in the process. Based on the study from Switzerland, knowledge creation was an important factor to gain approval and adaptation from residents, as well as following the rule. In addition the ethical implication revealed the tool for consideration for sustainability the innovation entails. Consumer behavior was included because the concept concerns the totality of actions by the consumer, including trash disposal and the circular economy products play a role in. This aspect was meaningful to consider whether the innovation posed a change and could thereby be deemed valuable for the society of Gothenburg.

Related Business concepts discussed the meaning of social entrepreneurship and the implementation of weight-tariff for trash produced by houses. The change it compelled because the

concept was similar to the trash bag fee (using the cause-principle), and what lessons could be extracted from this system. In instruments and applications, theory in financial incentives were investigated as the innovation concerns a fee. Best practices and in Social innovation reviewed the topic of motivational theory relating to the subject as it pushes consumers to consider their habits. At last, a look ahead looked into the future of the innovation, consider the longer term aspect of the innovation.

## 4.2 Delimitation

The goal is to answer the research question whether it can be possible in Gothenburg. The answers consists of personal views and are connected with the interpretation of the question, which might divert from the intent of the researcher. Research is about producing new knowledge so its production must be critically reviewed and thus the limitations. (Zackariasson, 2016)

A psychological social discourse is present in this context, meaning that the person in an interaction reacts performative or persuasive, the people may wish to answer the question in a way that they think suits the researcher and also seem more environmentally friendly than what they actually are because this trait is positive and people want to be associated with it even if many participants choose convenience and passiveness in the spare of the moment. As the questions are asked they can be seen to have already started the analysis, as the researcher picks the question, which makes the data subjective from the very start (Zackariasson, 2016). The personal bias in picking subjects for the structured interview was also reviewed in the method.

The answers were included in the appendix 6 and analyzed to form the analysis used to form the conclusion of the public opinion. The insight the professionals were able to offer can also be critically reviewed. It is difficult to phantom how each question is interpreted and understood by the interviewee. This may form a bias as the researcher is so familiar with the question themselves and assumes the interviewee shares the same perspective in understanding them. In addition the interviewee was asked to form an opinion with no previous inquiry and research of the specific topic which was requested. They were unfamiliar with the idea and still asked to take a stand. The answer could perhaps be affected if the proposition had a sense of previous framework and respond more accurately and confident in the interview.

## 4.3 Reliability and Validity

### 3.3.1 Reliability

Reliability is concerned with the question whether the results of a study to be repeatable, a measure of consistency (Bryman & Bell, 2013). Replication is aided by including the questions in the appendix and describing the process in detail, such as the locations where interviewees were questioned, the time and motive for the chosen questions. Yet not the same people would be questioned if the study was repeated due to the random segment which was reached during the conduction of the structured interviews. Yet the structured interview were conducted until the researcher could find a nuance of similarity in the answers in order to form conclusion based on them. This result produced a sense of generalizability to the study and deemed the sample as representative. Thus, the likelihood of retrieving the same answers through another try therefore higher.

Concerning the semi-structured interviews, the task differs. Here the interview developed into a discussion and conversation about the topic. The prepared question served as a guide. Sometimes the interviewee was more prompt to talk about the innovation instead of discussing the existing tools and measures to aid sustainability, which affected the order and most interviews relied on the same time span.

### 3.3.2 Validity

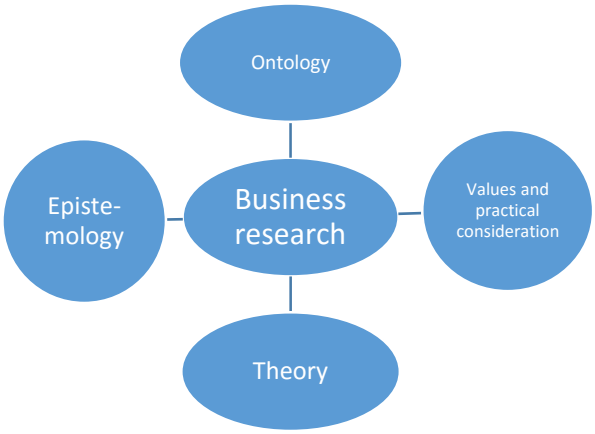
Validity is concerned with generalizability of the study and research, tested and used questions were implemented in the structured interview to strengthen validity as described above. The Swiss study of which was referred to (in forming the questions), had large resources by the state to conduct a reliable and validate results and was therefore deemed sufficient as a reference in this aspect for the study. This perspective aided the validity of the study (Bryman & Bell, 2013). The structured interview was used and adapted from a previous research. In addition some nuances and interpretation may have been lost in the translation (German to Swedish) and again when translating the result into English.

In addition, the semi-structured questions were open and based on theory of social innovation. The research questions concerns Gothenburg.. The professionals who were asked were competent in their subject and shared valuable judgment. The sample of the structured interview was questioned in the center of Gothenburg and lived in apartments but they were not necessarily living in the targeted area.

## 4.4 Personal values

Personal values have an effect on the research, as briefly stated in the research design (Bryman & Bell, 2013). It entails the choice of research area. It affects the formulation of the research question, choice of method and overall research design (Bryman & Bell, 2013). In addition the implementation of the data collection and analysis of data collection, where the data is interpreted and at last the drawn conclusions (Bryman & Bell, 2013). It affects which people were chosen in the structured interview as discussed in the method. Factors which play a role in the context of the study. Ontology entails a belief system on someone's interpretation what is a fact, such as views of the idea. Epistemology is based on how people think about a fact. These are very abstract concepts which makes them in this case platforms for subjectivity and for personal values to influence the process and result. (Bryman & Bell, 2013).

FIGURE 5 INFLUENCE ON BUSINESS RESEARCH: BRYMAN AND BELL (2013) PAGE 29




## 4.5 Summary

In short, structured interviews were conducted on forty apartment residents contacted in central Gothenburg (Vallgraven). In addition seven interviews with professionals in the context of trash management, development, sustainability and circular economy were conducted in a semi-

structured approach. Theories of social innovation, financal incentives, consumer behavior were reviewed to use it in combination with the emprical findings to produce the discussion and answer the research question. Personal values played a role in the process of the study.

**In the following part the empirical findings are presented. Reflections follow the presentation of the semi-structured and structured interview.**

# 5. Empirical Findings

## 5.1 Gothenburg

Gothenburg is the second largest city of Sweden, situated on the west coast. It has 547 005 residents on an area of 450 square kilometers (Göteborg Stad, 2016). Each year more people move into the city, amounting to 34 757 incoming people compared a lesser number, 30 351 people, moving out. The city is growing and so is the trash generated by the town due to the growing population (SCB, 2014). Today there are ca 216 000 apartments in this city (Bostadsbrstånd, 2013). A total of 169 150 ton of trash is produced in Gothenburg a year, one person throws out and average of 4.6 kilos a week, a substantial proportion of this waste is degradable and recyclable, which if correctly disposed can minimize the impact waste has heavily (Avfallstatestik, 2016).Göteborg Stad has established in growing to become sustainable, according to "Miljön i Göteborg 2015" (Environment in Gothenburg 2015).

In order to understand if and how the innovation is applicable, it is important to understand the current circumstances true to the city of Gothenburg. This is enabled by gaining an overview of who possesses areas of responsibility within the community. The district or municipality assigning a company to be in charge of transporting the waste to a treatment facility where it is recycled, disposed or handled (sopor.nu, 2016). The municipality possesses a plan of sanitation concerning the city called "Renhållningsordning", which states measures to minimize waste, increase recycling and thrive for a clean and sustainable township (sopor.nu, 2016).

All households are all obliged to sort and dispose of trash as prescribed, such as recycling or harmful waste to its designated places. Producers are obligated in providing designated areas where waste can be properly disposed and recycled, known as "Producentansvar", they are expected to collaborate with suppliers to use the minimum amount of resources in generating their work. Property owners (landlords) have similar responsibilities, such as enabling this behavior by supplying areas close to the tenants to dispose trash and also empty bins regularly and enforce a working process in handling debris. (sopor.nu, 2016)

Renova is assigned by the city to manage the waste the city of Gothenburg produces, they are owned by the municipality; Göteborg Stad (Renova 2016). They own a facility in Sävenäs, east of the city center, where trash is burned and renewed as energy such as electricity or heating (Göteborg Stad, no date).

## 5.2 Structured interviews

**The answers of the structured interviews of the forty participants are listed below:**

1a) All but one person returns PET bottles to the store, the person who does not brings them to recycling

1b) All but one person recycles cans, one didn't use them and three threw them in solid waste

1c) All but seven people took electronics to the recovery and disposal centers, five answered they did not have it and one person recycling. This question could depend on the interpretation.

1d) Five people out of forty threw paper away in solid waste instead of recycling it

1e) Nine people did not recycle packages, instead they threw it in solid waste and

1f) Thirty people donated clothes, while three people said they kept or did not know them and seven people recycled them.

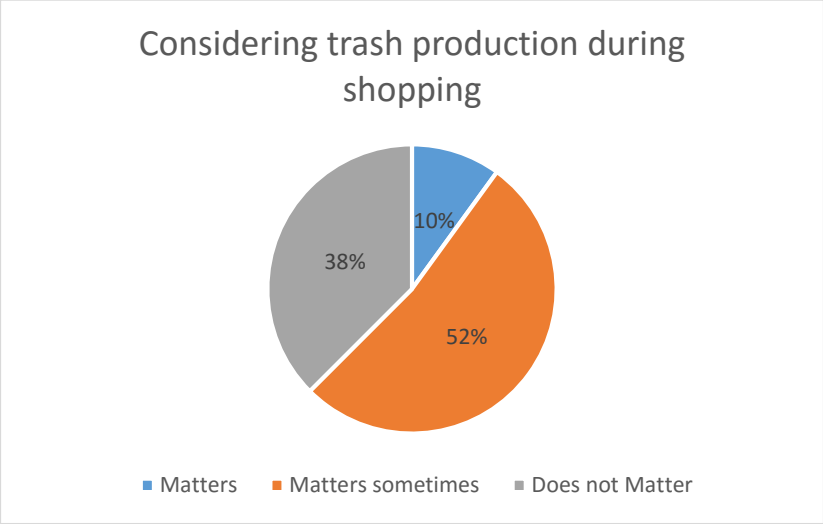
1g) All but one person recycled glass, except one who answered they didn't have it or didn't know

1i) Fifteen people did not put perishables in the compost but either answered recycled (three people) or throwing it in solid waste

1j) All but two people sorted batteries, the rest argued they threw it in solid waste or did not know.

1h) Lightbulbs were taken to the trash facility in thirty-one cases out of forty, instead nine cases were taken to recycling bins.

2)

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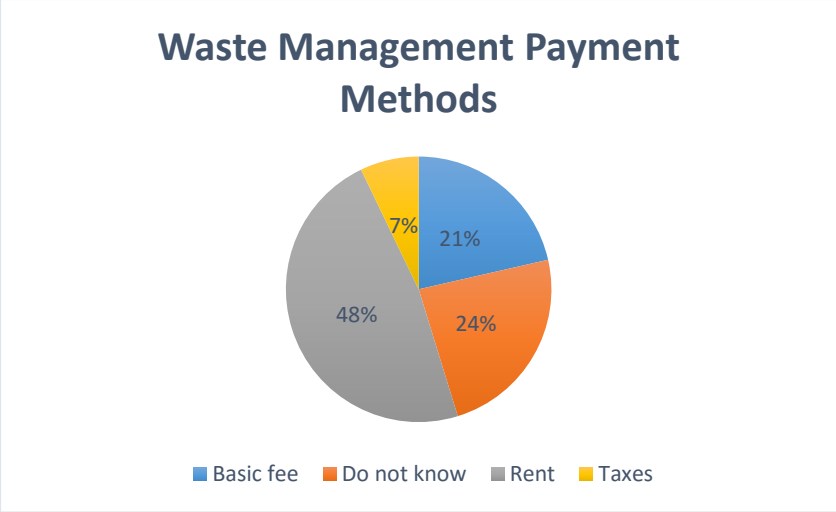
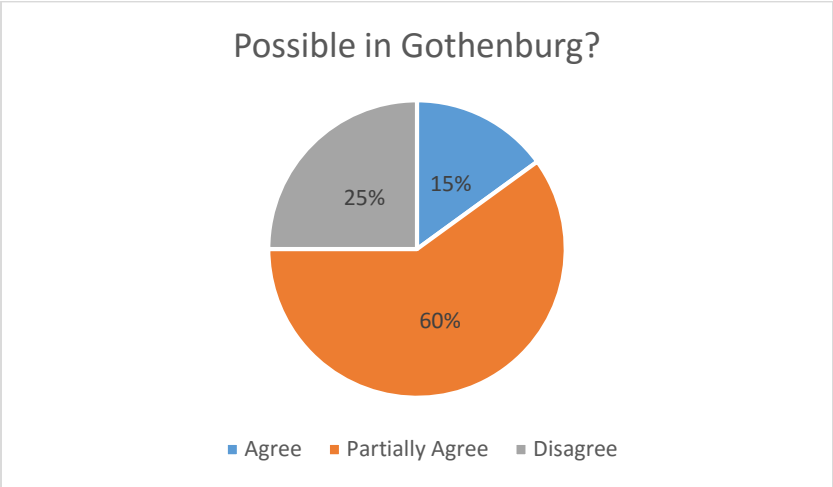


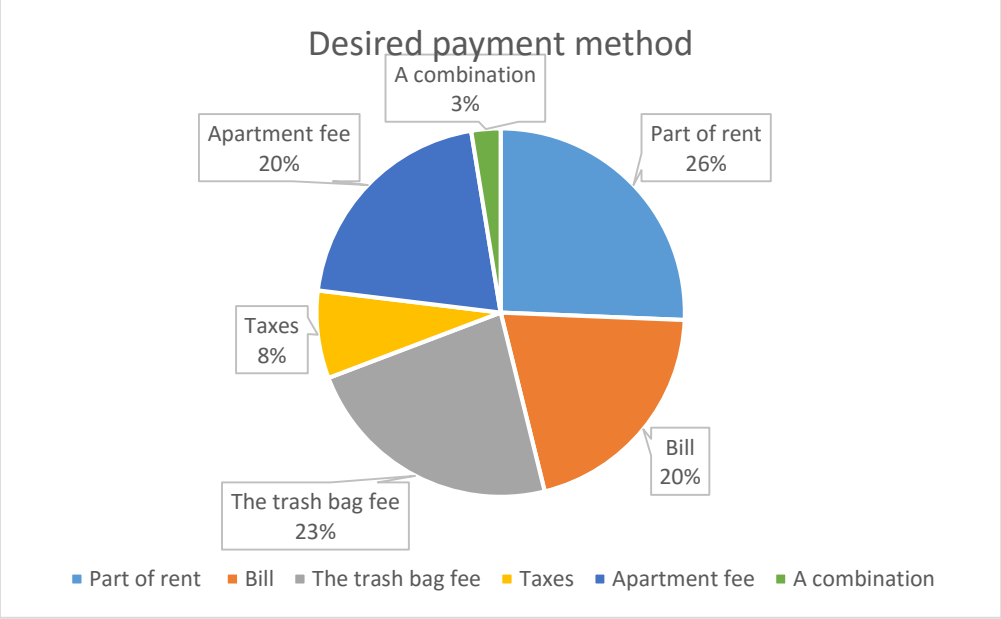

4) All people questioned answered that it was a fair principle to pay individually for what amount of trash is caused.

5)

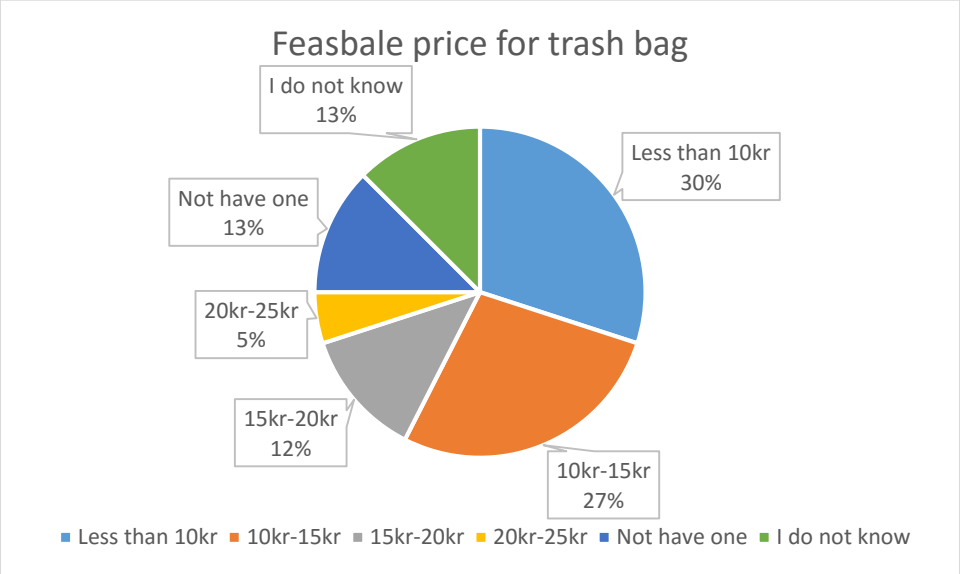



Here the majority agreed that it must be handled by the authority of the municipality and that it made people reflect more on their waste management. Most people were hesitant in whether it was a good idea.

6)

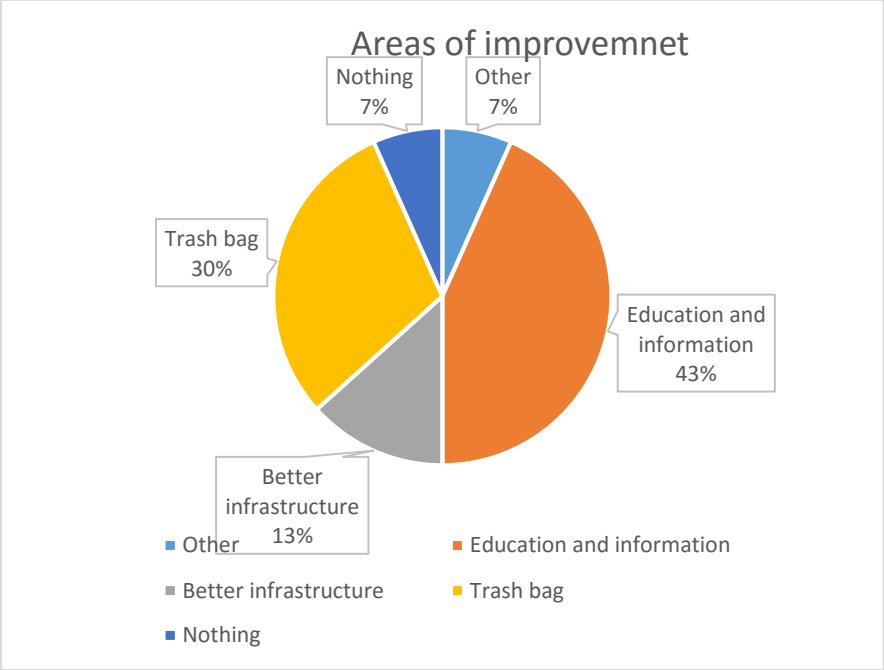


7)




8) Whether they knew how waste management works, all questioned answered that they knew the rules and how it works.

9)



10)


11)


## 5.3 Semi-structured interviews

**The following text contains a comprised version of the data that was collected through the semi-structured interviews. These are reviewed in the combination with the theory in the discussion which follows.**

All professionals agreed that the amount of trash and solid waste should be decreased and the factor is on the agenda. HSB and Poseidon and Renova answered that they try to do this by sending put

information, reports and campaigns such as Poseidon knocking at people's door to explain and convince people to use compost more often. Gothenburg city does this by introducing weight based schemes and pick-ups only every other week for houses. Fagerlund (2016) at the council of Vatten och Kretslopp said that the enforcement of the weight-based scheme was possible without significant protest and became accepted. Fagerlund (2016) states that there is an ongoing trend to care about the environment and adapt behavior to protect it.

Poseidon says that they are happy to see the amount of packages being recycled, yet Kraamer (2016) revealed that the average trash bag contains two-thirds recyclables and compost (perishables). Compost is picked up for free by the city (Kraamer, 2016). At Renova, it was explained that almost anything can be recycled, it is a question or resources and effort to do so. Many items are not recycled or sorted properly because the package, for instance, is dirty. Byden (2016) at Melica shared that the amount of take-out food packages has increased a lot in the past years. It also concerns the development of people's habits. Consumption acts in direct correlation to people's income, the more they earn the more they consume and as a result larger amounts of trash is produced (Litterfelt, 2016).

Weber (2016) was the most concerned with the amount of compost being retrieved, so was Gipperth (2016) at HSB. According to her it depended heavily the format it was available, the bags are made out of paper instead of plastic in this municipality, which makes it messier to handle.

The trash bag fee idea seemed smart but the concern was soon uttered of the problem to how the system would be enforced. People could easily dispose it however they want to. For someone to go through the trash was a tricky question, who would take on that task and few people would step up to this assignment (to find clues to who disposed it improperly). In addition, Kraamer (2016) explained that a clause would have to be signed off in order to allow this action to take place. If not, the perceived integrity of tenants could be threatened. The trash can be seen as something private that no one should look through. Yet Kraamer (2016) states they possess the power within the municipality to change the Renhållningsförordningen to enforce this system. Miljöbalken, the law in this area, entails this power to the municipality. A brave politician would have to advocate for the change and implement the proposal which is drafted by employees at Vatten och Kretslopp. Landlords usually hold the responsibility in the building and would also possess the authority to

use this method. The price is interesting in the context, municipalities are not allowed to make profit but the money could go to other parts in the municipality (Kraamer, 2016). Economically weak people can suffer through this, single-parents or elderly, yet this group may also be prompted to sort their trash more. HSB also mentioned that they would be willing to adapt the rent if the cost of trash management is transferred directly to the tenant.

The majority of the stakeholders agreed that the municipality should be in charge of enforcing such a system. At first it would be appropriate to have a test group to review and observe the potential benefit, yet Kraamer (2016) state that it may be difficult to convince this group of people to partake. The enforcement could look like a lot of work and need for information and campaigns necessary to spread. The landlords were not desiring to enforce it, rather they wish to follow the rules that the municipality sets out.

Renova follows the rules set out by the city of Gothenburg and fees to handle the trash, or what instruments are used to reach goals. Although they are in place to follow order, they also intend to serve the community by providing information and services to aid society, hoping that communication can minimize trash and influence consumption. One example is inviting students every year to educate and show the purpose and function of the waste management facility (Litterfelt, 2016). Litterfelt (2016) adds that the bag would have to be made out of something smart.

Gothenburg, through its own facility of Renova, has many tools and systems to handle the topic of sustainability. Their trucks are fossil free and landfills are forbidden. Yet it is a business that is supposed to be able to support itself. The average trash production by a single person in Sweden is 466 kilograms, compared to the average in Europe of 481 kilograms. Gothenburg has the infrastructure to burn solid waste and produce energy in form of heating or electricity. Five ton of trash can provide heating for a household for nine months. The technology is so advanced that the emissions are also taken care of and that the final product is salt water which goes into the ocean according to Litterfelt (2016). The ashes that remain can also be recycled to an extent. Gothenburg has invested fifty billion kroner in the past decades and produced 1000 kilometer of piping to enable this system. Even of what is recycled, not the complete product can be reused, for example perhaps forty percent of plastic cup. This is something to keep in mind. Ninety percent of households in Gothenburg receive heating in this way. Yet if the item is not recycled the municipality is paying for its disposal instead of the manufactures (Producenrtansvar). (Litterfelt, 2016)

Many goals from the EU have been accomplished in Sweden already, according to Letterfelt (2016). Yet preventing trash to appear in the first place is the most efficient way. The gap in resource and value between recycling and generating energy through trash management is not very large (Letterfelt, 2016). Although Kraamer (2016) at Vatten och Kretslopp points out the loss of material, once it is burned it can never be used again. Virgin resources must instead be used.

At Älvstranden Utveckling they work with city development and incorporating sustainability in the process. They act on the goals that the city has envisioned. The mantra states that it is supposed to be easy to do the right thing or make it hard to do the wrong thing. An example is in Netherland that the sites to dispose solid waste are much further away than recycling bins. Another factor to encourage correct behavior is to have a neat recycling site that people feel compelled to use, tidy and clean and accessible, says Gipperth (2016). Landlords try to put the sites close by to the building (Weber, 2016). They wish to create a structure to enable this, to make it accepted and used. The circular economy is a focus. They want to integrate sustainability in the daily lives of residents through different strategies and tools, for example not being dependable on a car to carry out errands. Byden (2016) agreed with the concept of Älvtsranden Utveckling, that it should become a habit and is easy to be sustainable. They argue this goes the furthest. Although the concept can be seen as fair, there is a community spirit that may be deep rotted, in the sense that people share the burden of costs (Svantesson, 2016). There are several factors to keep in mind of what can be considered fair. Svantensson (2016) says that it may be possible to test, but needs to know more before such a judgment can be made.

Byden (2016) at Melica, explains that there are several points that have to be improved in this context. Here the strategy was not make sustainability easy, but anything other hard. It is also essential to create habits form a young age and incorporate it naturally into the daily lives of citizens. He was concerned with the threat of having trash end up in the wrong places, where the suburbs would be less appropriate for the idea than the urban setting, due to less space.

*"A financial incentive is something people get used to easily, like the road toll."*

People are driving as much as before in Gothenburg says Byden (2016). Physical incentives are more powerful, others are easier to break. Even if the majority does not break rules, the few procent who does can become a problem. People may forget about the cost in the long run, inconveniences are not. He argues that once the bag is bought, it does not cost to use them (Byden, 2016)

**The following section will discuss and analyze the empirical data in relation to the theoretical framework. The discussion is structured according to the overview of Social Innovation formed by the editors Osburg and Schmidpeter (2013), starting with Social Innovation before embarking on the five steps, to create order, structure and different views to consider. Listed again, below.**

# 6. Discussion

TABLE 3 OVERVIEW: SOCIAL INNOVATION OSBURG AND SCHMIDPETER (2013) PAGE 2

1. Perspectives and Considerations
2. Related Business Concepts
3. Instruments and Applications
4. Best Practice and Implementation
5. Looking Ahead

The research question posed investigates how the innovation of a fee based garbage bag for solid waste for apartment residents is possible in Gothenburg.

## Social Innovation

In order to be sustainable, by meeting the needs of today without jeopardizing the future, a circular flow has to exist in the waste and production process and is something Vatten och Kretslopp is occupied with according to Kraamer (2016) (Alänge & Lundqvist, 2013). Yet to reach this mindset and goal, many costs have to be considered and balanced (Osburg & Schmidpeter, 2013). The idea of transferring the cost of waste management directly onto the resident of apartment equals in many respect the enforced concept of the weight-tariff system among many municipality for stand-alone households (Dahlen & Lagerkvist, 2010). Government agencies and programs can act upon implementing social innovations to answer problems concerning the environment and thereby promote common welfare (Alänge & Lundqvist, 2013).

All the professional participant's agreed that their goal is to increase recycling and decrease solid waste, as do the explicit goals by Göteborg Stad state (Göteborgs Stad, 2015). According to the

structured survey among residents in central Gothenburg twenty-four percent did not know how they pay for waste management. The people who answered rent or base fee, probably did not know what the cost looked like (the amount) though the fee is included in a larger sum. Due to the face to face interview, the researcher could observed the impression that most people who did answer guessed rather than knowing confidently to the question of how the cost is financed today. This lack of knowledge and insight relates to the tragedy of the common, where the benefit of using the common is personal while the consequence is suffered by all (Alänge & Lundqvist, 2013). Though all questioned residents say they do know what to do when it concerns waste management, the knowledge does not translate into action according to statistics Kraamer from Vatten och Kretslopp (2016) shared, two thirds of an average garbage bag (solid waste stream) is either food perishables (compost), or packages (recycling). The tragedy of the common explains why knowledge often times does not translate into action, because the consequences are suffered by the all and not personally so the effects are not perceived as immediate and an unsustainable path is continuously pursued (Alänge & Lundqvist, 2013). Awareness appears to be present but is not converted into behavior to the same extent, like Fagerlund (2016) says that there is an increasing trend to care about the environmental agenda. Renters, Renova and the city spread information and education through newsletters, magazines and campaigns regularly. Upon the questions how different items were disposed of, the majority answered they separated the items in a correct manner (Question 1). Yet these answers must be considered with caution, as the person may show that he or she knows how to, and does it sometimes, but not necessarily always. Thus only demonstrating knowledge rather than practice. The individual may think of the times she or he does, rather than the times he or she refrains from it and wishes to appear as a responsible and conscious citizen.

The average apartment resident in Gothenburg can be considered rational, though rather on a personal instead of collective, according to Hardin (1968). He or she knows that the shared cost of waste is less than the time and energy it costs to purify waste before disposing it. The cost due to the behavior can be considered externalized, when the cost becomes internalized the burden is moved. Although the terms and conditions by the district dictate that the consumer is responsible today, the relationship between the behavior and cost is too far apart. Some propose governmental action is needed, yet Byden at Melica Consulting (2016) proposed that a financial incentive such as the garbage fee does not add up in long-term change. Instead facilitating the process to do the right thing is essential in this context. Kraamer (2016) and Svantesson (2016) agree by stating that

this dominates the current efforts to reach the city's goals. Byden (2016) uses the example of the city toll as an example in his argument, at the beginning it changed the behavior but eventually people got used to the cost and continued with their driving habits as before. (Byden, 2016)

People commonly do not voluntarily make sacrifices, yet Svantesson (2016) at Älvstranden Utveckling, shed light upon the philosophical aspect of sharing the cost of waste. The concept that people help each other to carry this cost, for example the single mother having a household produce more trash due to her children. Yet, on the other hand the aim to sort trash accordingly also adds a welfare aspect to the whole community. But since in a perfect market only consumers and sellers are affected by the transaction (including the resulting trash), the third party, being the common, should not suffer the effects (Alänge & Lundqvist, 2013). Yet today, an imperfect market exists in Gothenburg. The state usually maneuvers biases with policies and regulations, the innovation could serve as a tool in forming a policy to manage the imbalance (Alänge & Lundqvist, 2013). In addition, the manufacture-responsibility (Producentansvar) entails that the producer of a product is also liable for the cost of recycling the package the product came in, this responsibility is included in the price (Detterfelt and Kraamer, 2016). Yet imbalance occurs when users do not dispose of the items at a recycling station and throw it in the regular trash, where the municipality pays for the management. In addition, the distribution of the cost for trash is divided equally upon all residents in a building, which means that some pay more or less than what they actually use.

## 5.1 Perspectives and Considerations

Innovation has the ability to implement change in the society the goals of Gothenburg imply change is needed to reach desired results of becoming a sustainable city (Göteborgs Stad, no date). The figure (Figure 4) of perspectives and considerations links humanitarian perspectives, knowledge creations, social capital perspective and ethical considerations and consumer behavior to social innovation and sustainability (Osburg & Schmidpeter, 2013). The social innovation needs have a positive effect on the society, as well as collaboration to be successful. (Osburg & Schmidpeter, 2013).

### 5.1.1 The Relation between Ethics and Innovation

Ethical considerations concern the people who are more affected than others, the elders or people who are financially restrained. Yet Gipperth at HSB (2016) proposed that the option to adjust rent by removing the included cost of waste management would be possible. This act could make the innovation be perceived as more fair. Some groups would be more exposed to the cost than others, if it is not shared. Many people were discontent with the proposal of the idea, perceiving it as a punishment as they consider themselves to already follow the rules in the structured interview in the structured interview, as could be observed. Sixty percent partially agreed to it being possible in Gothenburg, twenty-five percent disagreed while fifteen percent thought it was doable. The answers may be influenced by the fact that people had to take a stand on such short notice to an unfamiliar idea, making people more hesitant to its acceptance. Yet a change is called for in this context to transform the current standings. The actions taken shape the world. The trash bag fee can prompt people to evaluate the ethics that are involved in the process of waste management, starting at the consumer stage. (Osburg & Schmidpeter, 2013)

The fee could have the ability to strength the role of ethics, what is right or wrong, in the decision to recycle. The majority of the questioned residents agreed that the fee would increase recycling, bringing attention to the subject and evoking the role of ethics. Today careless behavior can be attributed to laziness, as the structured interview revealed, yet if the actions have a cost the careless behavior and therefore actions would transform (Appendix 3). Actions have the ability affect the environment. (Fontrodona, 2013). The legal framework can provoke habits, but also ways to avoid the laws. Byden at Melica (2016), argued that the innovation would only be possible in urban settings and not in the suburbs. The reason being that it is easier to rid trash illegally out of town than within the city where there is less room dispose of garbage improperly.

Extrinsic and intrinsic motivation play a role in this concept, like the weighted tariff, recycling improved but this may also stem from an intrinsic motive to be able to track the waste amount produced by the household, as was previously unknown. Extrinsic may occur in the sense that users save money based on the behavior, when the role of ethics is involved and communicated it usually sets of a positive view. (Fontrodona, 2013)

### 5.1.2 Humanitarian Perspective

Today seldom the packages of items that will become trash are considered, and when they do they do not usually affect the purchase decision according to the structured interview. The survey conducted in Switzerland, stated that people became more aware of consumption in the buyer decision stage, the first step of the trash stairs (BUWAL, 2003). It would also account more of the manufacture-responsibility and thereby increase motivation to respond to such a change. The corporate social responsibility would become more credible, as the producer responsibility is not widely known among consumers (Poducentansvar).

### 5.1.3 Knowledge Creation and Transfer Effects on Decision Making

Information plays a vital role in the development of society and economy. Information connects to innovation since knowledge can create change. Most people for example disposed of lightbulbs incorrectly according to the structured interview. Social innovation has the ability to transfer knowledge (Rodgers & Söderbron, 2013). The way knowledge of waste management is tacit, Byden (2016) argues that this is the most meaningful way as it must be something that a person grows up with and it makes a habit out of. By implementing the innovation, knowledge would be acquired and handed out in how to dispose of garbage to minimize the trash towards solid waste streams, as described in the Swiss study (BUWAL, 2003). It is how BUWAL (2003) introduced the innovation in Switzerland and increased recycling, by teaching residents to maneuver the garbage bag fee and explaining how to handle waste as well as its purpose.

The Figure 5 of the "Knowledge-transfer Model Process" by Rodgers and Söderbron (2013), depicts the journey information has. The innovation would affect perception, as it affects the finances of a resident and thus impose on the judgment leading to the decision. All questioned participants of the structured survey agreed that it is fair that the person who causes the trash, pays for it (cause-principle). The decision would show up on people's agenda, as a direct correlation emerges through the fee. The framing of the disposal would transform as it becomes it less of a passive decision but an active one, as finances have an effect on judgment, where a loss is considered greater than an equal amount being gained (Alänge & Lundqvist, 2013).

Today Poseidon, Vatten och Kretslopp, Renova and HSB work with information campaigns to spread knowledge. They do this by sending free information newsletters via mail. They also have

magazines which address the topic. Weber (2016) at Poseidon shared that they also go door to door to answer questions and explain what to do with food perishables, in an effort to increase the amount of compost being collected. The district motivates this trend by picking up compost for free (Kraamer, 2016). A change has been observed but there is more that could be sorted in terms of waste management by the user (two thirds more) (Kraamer, 2016). Many answered that more information was needed to create improvement (educating people), yet today many efforts are already invested in educating people through these strategies. Perhaps a lot of the information bypasses the consumer as they are bombarded with ads, newsletters and more in their mailbox.

### 5.1.4 Consumer behavior

Consumer behavior concerns all aspects of consumer decision (Hoyer, et al., 2012). There is a classification of the types of consumers, and the goal for the sake of society and the government is to transform as many as possible to the citizens type and described as responsible by Dagevos (2005). This type knows his or her rights and responsibilities and possesses awareness of consumerism. Today the type "chooser" (Piacentini & Szmigin, 2015) or known as "calculating" by Dagevos (2005) is common choosing the option that makes the most sense to the individual and being able to refrain from being a "Victim" or "Flawed"; uneducated and unaware (not considering the process). This has users reflect more, as was agreed upon in the structured interview (Szmigin & Piactini, 2015). A flawed consumer abstains from reflecting (Piacentini & Szmigin, 2015). The consumer has the choice to be reflective, causing consideration and conscious choices. The idea makes the process less passive, forming high involvement consumers. High involved means that a state of evaluation follows, where the result of the consumption is considered because it becomes a cost, such as the question asking if people become more reflective. (Piacentini & Szmigin, 2015)

Previously low involvement was present since based on the question whether people consider the trash result of the purchases, most people said they did not or seldom and if they did consider it sometimes it does not mean it affected their buying decision in reality. Norms can be formed through formal rules, the innovation can act as such and enact the endowment effect (Piacentini & Szmigin, 2015).

## 5.2 Related Business Concepts to Social Innovation

### 5.2.1 Social Entrepreneurs as Main drivers of Social Innovation

Entrepreneurship is a desired concept for the government, and that an entrepreneur can also replicate and adapt innovations, which would be the case in this report. The innovation already exists in many municipality in Switzerland. Weber (2016) and Svantesson (2016) both talked about the ambition to make it easy to do the right thing- ("det ska vara lätt att göra rätt"), a mantra running through many of their projects. This means that recycling stations should be close by, clearly marked and easily accessible. Gipperth (2016) said they make an effort to keep these areas sorted and clean so people are more motivated to make it a practice. In the conversation with Kraamer (2016) another innovation was discussed, where in the Netherlands the place to dispose of solid waste was further away than the recycling station; making it "harder to do the wrong thing".

Renova spreads knowledge by inviting students to the facility every year, there it is proposed that the cost of waste management could be reduced by half, the students how, and the answer is that this is enabled by consuming half as much (Detterfelt, 2016).

The weight based tariff has been introduced and as discussed with politician Fagerlund (2016) and scientific studies, the system was implemented and perceived as fair. A brave politician would have to take a stand in bringing this to consideration in the council, the sense of change associates with the concept of social entrepreneurship. The innovation entails not reinventing the wheel, as the weight tariff and trash bag fee have worked (Schöning, 2013).

### 5.2.2 Waste handling

Financial incentives can undermine intrinsic motivation, yet the system can prompt this type of motivation as it facilitates the process of being able to keep track of the amount of trash being disposed, by knowing the number of trash bags being used (Dahlen & Lagerkvist, 2010). This observation can be seen in the weighted tariff effect found through the study of Dahlen and Lagerkvist (2010). When introducing this, information campaigns were used to explain it, answering the demand by the structured interview saying that this is the tool the municipality should use to improve the system. If it was volume based, charged per trash can, the consumer may

feel like they lose money by not taking advantage of the whole can when it is picked up (instead of the weight based tariff) (Byden, 2016).

Most people answered that the trash bag fee should lie at about fifteen Swedish kroner, as it was stated in the example of Switzerland, unless they disagreed with the concept completely and said it should be the same price as before (two Swedish kroner, the cost of a shopping bag at a grocery store). The questioned residents did usually not reflect on the package, hence eventual trash, when they were shopping. Dahlen and Lagerkvist (2010) found in their study that a shift could be observed in less trash, not resulting in more recycling, indicating a change in consumption. Perhaps consuming more services or sharing items and still support the economy.

## 5.3 Instruments and application

Goals are an instrument to recognize needs. Weber (2016) at Poseidon and Gipperth (2016) at HSB agree that a trial would be useful in order to understand the perception and effect of the idea. This according to them should occur on the premise of the municipality officials to test as an experiment. Kraamer (2016) at Vatten och Kretslopp, states that it could difficult to convince a test group of using this method. The impression was that organizations were hesitant in incorporating this on their premise and be responsible for such a system, Kraamer stated that the Renhållningsförordning (Bill dictating the management of waste, as this responsibility lies within the power the municipality), which each municipality authors and has the authority and ability to change and thereby implement this innovation. Renova, owned by Göteborg Stad, is in charge of following the instructions of the municipality (Detterfelt, 2016). Only one fourth of the questioned residents were willing to pay more for better waste management.

An introduction of such a system would automatically need marketing as a tool to enforce the concept (Bhattacharya, 2013). If marketing is not executed in a meaningful way, the trust between the officials and innovation can be hurt. Communication is key, as Kraamer (2016) expressed. Yet as mentioned the weight based tariff was accepted (Fagerlund, 2016). But only the information convincing people of the role and purpose of the idea can form acceptance (Bhattacharya, 2013). The aim is to use it at the fifth stage of the cycle formulated by Elkington et al. (2010): mainstreaming the idea towards a more sustainable state. It can also be considered a systematic

change, prompting people to consider their responsibility and influence in the context (Edeltraud & Guenther, 2013). The other stages do not apply in the same manner as this concerns a social innovation to be implemented within the public sector as a rule rather than a business concept.

### 5.3.1 Financial incentive

Prices have the role of allocating resources and motivate the consumer to act upon this, according to the structured interview, almost all agreed that the idea would make people adapt their behavior and recycle more (Anderson, et al., 1977). The resource of the material found in the process of recycling has no price that the consumer sees, the innovation introduces a price to this context. The majority agreed, as mentioned, that the concept has a positive effect on sorting trash accordingly and also makes people reflect. It can make the value of recycling immediate to consumers as they thereby avert the cost of solid waste. On a sociological level, it must be socially and ethically accepted by communicating the purpose. Practically a high fine must be enforced if people fail to follow the policy.

Yet, many answered that it was not possible in Gothenburg while the majority (63%) said they partially agreed, yet that if it was enforced the municipality would hold the responsibility said. As loss aversion is a stronger drive than reward, a similar concept to the material saved can be applied to the garbage bag fee. (Anderson, et al., 1977)

## 5.4 Best Practices in Social Innovation

Through the garbage fee bag, the cost of trash would be included in the budget of an apartment resident. The stakeholders in this concept are the residents, the city, Renova, the environment, businesses and the common welfare of prompting a circular community and society. It would allow residents to keep track of how much they dispose, consuming less is an ethical and cultural choice, but until made conscious of it, little can occur if no measurement exists to track it.

Solid waste is produces heat and electricity in the city of Gothenburg. Large investments for more than fifty years have provided the infrastructure to provide heating to households in Gothenburg. Five ton of trash can provide nine months of heat for a house. Switzerland does not have district heating or the 1000 kilometer of piping to enable this. Today Sweden has a below average trash

production per capita at 466 kilogram instead of 481 kilogram in the EU. Basically anything can be recycled but it concerns the question of how much something is allowed to cost in order to be recycled, as this process, too, requires resources. It requires almost as much as burning waste to produce heat, yet Kraamer (2016) states that recycling allows the material to be reused, and that being a value. Detterfelt (2016) explains that usually not the whole item can be recycled.

Today much of the responsibility lies upon the building owners (Weber, 2016), in education and paying fines for incorrect behavior. It has been hard to motivate people to use the compost more, which Poseidon has tried to change by offering free holders for the paper bag and thereby eliminate the messiness of handling and using this bag. During the interview, a prominent concern was the ability to cheat the system as a user and use a regular bag. This was handled in Switzerland by going through the bag and finding clues to whom it belongs. Kraamer (2016), explains that people may feel that this imposes on someone's integrity. Yet this can be eliminated by a clause to allow this procedure. Weber at Poseidon (2016) was hesitant to the act of going through someone's trash and that few people would desire to partake in such an activity in their work.

### 5.4.1 Motivational Theory

Ebero et al. states that intrinsic motivation is more important than financial incentives. This is based on their values and what they consider important or not. Studies revealed that people in urban settings are more concerned about the environment where this innovation could be implemented. Joos et al., (1999) says, contrary to Byden (2016) that the proximity of recycling station is second to awareness among consumers to aid environmental motives. The bag fee could make the people more aware by monitoring the trash volume. Today behavior depends on the personal view, for example on whether the user perceives sustainability to be an issue. Concern for the environment connects to conversation measures, produced through education. The innovation would put a sense of "owing" it to the community and thereby promote sorting trash correctly. (Ebero A., 1999)

## 5.5 Looking Ahead

New projects incorporate the concept of sustainability and new ideas are tested and discussed to thrive for sustainability in Gothenburg (Svantesson, 2016). Today human activity dominates the welfare of the globe. As mentioned before, it must be easy to do the right thing or uncomfortable

to do the wrong thing in the thrive for sustainability (Byden 2016 & Kraamer 2016). A loss is perceived greater compared to an equal amount being gained. The innovation could have the potential to create a paradigm shift, where users consider their role and responsibility in the context, while also serving their own interest in saving cost by planning their waste management further. Yet there are many groups who are exposed to such a cost change, lower class or households with more than average trash (for example diapers). The risk of trash being inappropriately disposed makes professionals hesitant. A change in the bill of waste management in the municipality would need to be changed according to the authority Miljöbalken prescribes (Miljöbalken, 2015).

This innovation has the ability to create change, which attracts the role of policy making. Tools to become reflective of disposal may cause a paradigm shift and the role of trash amounts disposed becomes part of a consumer's consciousness.

## 5.6 Further thoughts and reflections

**The section states the pros and cons of the innovation in Gothenburg. It discusses potential flaws in the structured interviews and provides more areas of research**.

The idea to charge for a garbage bag in Gothenburg has been reviewed in this study. The concept seems fair, considering the implementation of weight-tariff for houses. This system, allows users to keep track of their waste production and stay conscious of it, catering to extrinsic and intrinsic motives. Today the owners (renters) of the building pay directly for that weight and the actual producers (residents) of the trash stay unconscious to the cost or even how it is paid for or the actual costs of it. In addition, the concept has been utilized in Switzerland, where results and changes have been able to be tracked. The city of Gothenburg has high set goals to become more sustainable and needs specific tools to do so. In their statement, they announce they are prepared to use political instruments to bring about this shift. The fee of the garbage bag should be high enough to make consumers aware of it. Yet, many households may have the financial resources to not be bothered by the amount, though the amount needs to be the same for all garbage bags across the municipality where it is implemented. Other groups who are financially and socially vulnerable may suffer a much larger impact and the imbalance may be perceived as unfair. The philosophical concept of sharing the burden of the cost would removed. The risk is that people fail to follow the rule and

continue disposing trash as before or dispose it illegally. This can be handled by looking for hints to whom the trash belongs to by going through the trash and looking for receipts, addresses on envelopes and more. Yet employees may be reluctant to do this and who would take on this task. The people who fail to follow the rule must suffer a fine large enough to refrain from such incorrect behavior. Going through trash can also be considered an integrity issue, as it may be perceived as something private, but this aspect can be freed by signing this proposition off.

People may become used to the fee and after its initial implementation and eventually continue the same behavior as before, thus the innovation not serving its value. The innovation would serve a better potential in urban settings, in the suburbs it is easier to dispose of the trash inappropriately (for example the forest etc.). The city also has a higher concentration of residents. Many other tactics are today looked into, such as the concept of it being easy to do the right thing. Recycling should become a habit at an early age. Byden (2016) also reveals that trends are pointing to a change in behavior as people become more aware and encouraged to care for the environment. In addition, Gothenburg is unique in comparison to many other European municipalities, where the solid waste is burned and produces heating and electricity for households. This means that the solid waste does provide a value through this channel as well.

Positive aspects are that the innovation prompts people to reflect upon their trash production and therefore also consumption, as the structured interview revealed. Proven effects can be observed form the weighted tariffs and the statistics retrieved from Switzerland. The city is looking for tools to become more sustainable and there is no use of "reinventing the wheel" when trying to increase recycling and decrease solid waste. Today two-thirds of the trash found in the solid waste stream do not belong, which constitutes a huge loss for renewing materials and holding Producentansvar accountable (Producer responsibility). Information newsletter and more are constantly sent out, but many times not reviewed or considered, as many answered in the structured interview they were desiring more education, which caused the question of whether they do see these magazines and this information coming to them. In the moment of disposing the trash, this information may not occur to the consumer anyway due to passiveness.

The structured interview may be questioned on the terms of whether the interviewee answered honestly, they may think they did, as when they described how they handle items in the first questions. They recall the items which they dispose of correctly and not the ones they are too lazy

to clean in order to recycle for example. They may also answer in a sense of what is the right answer, as they do know it, and not necessarily how they themselves handle it, wanting to appear as a good citizen. The people usually gave the impression to be a good example and that bad behavior was attributed to anyone but them (in the majority of cases). This may hint at a bias from the interviewee's side, only recalling the correct behavior and neglecting the occurrences of passive decisions. Many did not reflect about the package of items either, and the ones who did, could not be revealed if that had an effect on their buying decision or not.

More research can be conducted by creating a focus group, or conducting the innovation as an experiment in on an apartment building and observing the changes and whether value can be retrieved through this system. Further research can be made by analyzing the risks more closely that the innovation can pose on society. A structured survey can be conducted including larger geographical areas instead of merely focusing on the city center where people may appear more similar (jobs, income, values, etc.) to one another than in other parts of the city.

# 6. Conclusion

The questions poses how the innovation of enforcing a trash bag fee for apartment residents in Gothenburg is possible. This would be possible by the municipality changing their Renhållningsförordning according to Miljöbalken. The officials of Vatten och Kretslopp were to form a bill that must be approved by brave politicians, willing to stand behind such a change. Renova, which handles the waste management, would have the role of enforcing it. This would be accepted when they win the contract by the municipality, which states the principles they have to follow. By renting an apartment, the contract would have to include the permission to go through trash so the integrity of residents would not be compromised. Big information campaigns for the purpose and the necessary behavior must be launched to spread awareness and enforce the innovation. The city has big goals to become more sustainable including the concern regarding the amount of trash being produced and recycled. Tools are needed to reach these goals, and may cause changes in the context of consumption. Consumption is a vital factor in economy, but services or shared platforms may emerge as a result, which can be consumed instead. The innovation has worked in a different setting and is fair, as all people questioned agreed that it is appropriate to pay according to the cause- principle. The professionals shared a lot of critical points to the system and tools which are currently used. The innovation would be able to complement the existing strategies and most agreed that a trial would be called for since the idea is interesting enough in the pursuit it contains. Theory and answers in the structured interview revealed that the social innovation can be deemed valuable in the sense of being capable of change through consumer behavior, affecting the totality of consumer decision.

## 6.1 Personal Reflection

The experience of writing the master thesis this semester was unique. Writing it alone made the process very flexible but also required discipline which was acquired during the time period. It was a positive experience to get a hold of participants for the semi-structured interviews, people were open minded and willing to help out by sharing their thoughts and opinions. I was honored that they took me and my assignment seriously. It was a difficult experience collecting data from residents in central Gothenburg in the structured interview, it took a lot of patience and courage to

walk up to strangers and continue long enough until enough people had been spoken to. The background information was a very interesting topic, seeing the goals of Gothenburg and the effects Switzerland had experienced. The interviews revealed interesting facts such as how much is left to do to utilize the full effect of sorting trash and redirecting solid waste today. Sustainability is a very keen subject to me and I believe that innovation and social innovation are the keys to manage this, which is why this topic and purpose was meaningful to me and chosen for the project.

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# 8. Appendix

## Appendix 6 Structured Interview Questions, Swedish then English

(jag studerar master på handelshögskolan och gör nu en undersökning för min uppsats som handlar om avfall, har du  minuter tid att svara på några frågor? Uppsatsen handlar om en idee som finns i schweiz, där man måste betala 15kr för en soppåsen som man slänger brännbart avfall i,  för att påverka beteende)

**BOR DU I LÄGENHET**

**Prata långsam**

**Fråga 1**

Jag läser nu upp ett antal saker. Berätta vad du normalt gör med detta när du slänger den eller inte vill ha den längre.

Läses:

- A- PET plastflaskor
- B- Conserburkar
- C- Elektronik
- D- Paper
- E- Matförpackning
- F- Kläder
- G- Glas
- I- Matavfall
- J- Batterier
- H- Glödlampor

Använding:

- 1- Vanliga sopor
- 2- Insamling
- 3- Speciella anläggningar(tippen)
- 4- Ger tillbaka till affären
- 5- Bränna upp
- 6- Har jag inte, vet ej
- 7- Panta
- 8-Donation
- 9-kompost

*Eller hur mycket källsortera du?*

- *Allt*
- *Häften*
- *Inget*

**Fråga 2**

När du handlar, tänker du på hur mycket sopor produkter orsakar? (Ex, förpackningen)

- 1- Spela ingen roll
- 2- Ibland
- 3- Spela roll

**Fråga 3**

Vet du på vilket sätt du betalar för din sophantering

- 1- Grundavgift
- 2- Hyra
- 3- Skatter
- 4- Annat
- 5- Vet ej
- 6- Faktura

**Fråga 4**

Är det rättvisst att den som skapar soporna får betala för hanteringen. Så som vid villor betalar per vikttaxa.

- Ja
- Nej

**Fråga 5**

Jag läser nu upp några påstående, kan du säga om du håller med, håller delvis med, eller inte alls håller med gällande ideen som finns och funkar i Schweiz, där man bara får slänga i en slags påse för brännbart avfall som man köper för ca 15 kr styck.

- A- Det en bra idee
- B- Har en positiv verkan på källsortering
- C- Är finansellt acceptabelt
- D- Måste regleras kommunalt
- E-Får en att reflektera över ens sop beteende och källsortering
- F- Är möjligt i göteborg
- 1- Håller med
- 2- Håller delvis med
- 3- Håller inte med

**Fråga 6**

Vilket finanseringsätt föredra du för att betala sophantering

- 1- Skatter
- 2- Påsavgift
- 3- En kombination
- 4- Vet ej
- 5- Faktura
- 6- Skatter och faktura
- 7 Ingår i hyra

**Fråga 7**

I Schweiz betalar man 15 kronor per 35 liter sopåse. Om göteborg skulle införa denna avgift, hur mycket tycker du skulle vara rymligt som avgift. Läs ej

- 1- Mindre än 10 kr
- 2- Mellan 10 och 15 kr
- 3- Mellan 15 och 20 kr
- 4- Mellan 20 och 25 kr
- 5- Mellan 25 till 30 kr
- 6- Mer än 30 kr
- 7- Vet ej

**Fråga 8**

När det gäller sopsortering och återvinning, känner du att du vet vad som gäller?

- 1- Jag vet
- 2- Jag är osäker
- 3- Jag har ingen aning

**Fråga 9**

Vad, enligt din åsikt, bör kommunen förbättra gällande sophantering

(inte läsa)

- A- Hämta oftare
- B- Bättre infrastruktur
- C- Bättre information och utbilding
- D- Sopåse-avgift
- E- Annat:
- F- Inget

**Fråga 10**

Vore du beredd at betala mer för en bättre sophantering i Göteborg

- Ja
- Nej

**Fråga 11**

Om folk bränner eller slänger skräp på felaktigt sätt, vad tror du det beror på

(inte läsa)

- 1- Latthet
- 2- Inte nog med sopsorteringsställen
- 3- Ovetskap om påverkan på miljön
- 4- Protest
- 5- Spara pengar
- 6- Annat:

Tack för din medverkan

English:

Hi, my name is ----------, I study at the School of Business, Economics and Law and am in the process of writing a master thesis concerning the topic of trash and sustainability. Do you have five to seven minutes time to answer a few questions?

I now read a number of things. Tell us what you would normally do with it when you throw it or not want it anymore.

Reading:

o A PET plastic bottles

o B Cans

o C Electronics

o Paper D

o E Food packaging

o F Clothing

o G Glass

o I Compost

o J Batteries

o H bulbs

Application:

o 1 Common garbage

o 2- Collection

o 3 Special facilities

o 4 Brings back to the store

o 5- Burning Up

o 6 I have not, do not know

o 7- Panta

o 8-Donation

o 9 compost

Question 2

When you shop, you think about how much waste products cause? (For example, packaging)

o 1 Does not matter

o 2- Sometimes

o 3- Matters

Question 3

Do you know how you pay for your garbage disposal

o 1- Basic fee

o 2- Rental

o 3- Taxes

o 4- Other

o 5- Do not know

o 6- Bill

Question 4

Is it right given that the creator of garbage have to pay for management. As houses are paying per weight tariff.

o Yes

o No

Question 5

I now read some claims, can you say if you agree, partly agree, or not at all agree with the current idea available and working in Switzerland, where you can only throw in a kind of bag for burnable waste to buy for about 15 SEK each.

o A a good idea

B o Have a positive effect on recycling

C o Is finance partly acceptable

o D must be regulated municipal

o E-makes one reflect on one's waste behavior and sorting

o F is possible in Gothenburg

o 1- Agree

o 2 partly agree

o 3- Disagree

Question 6

Which financing way do you prefer to pay for garbage collection

o 1- Taxes

o 2-Trash bag fee

o 3- A combination

o 4 Do not know

o 5- Bill

o 6- Taxes and invoice

o 7 Included in the rent

Question 7

In Switzerland you pay SEK 15 per 35 liters trash bag. If the municipality would impose this charge, how much do you think would be acceptable as a fee. (Do not read)

o 1- Less than 10 SEK

o 2- Between 10 and 15 kr

o 3- Between 15 and 20 SEK

o 4 Between 20 and 25 kr

o 5- Between 25 to 30 kr

o 6 More than 30 kr

o 7 Do not know

Question 8

As for waste separation and recycling, do you feel that you know the rules?

o 1- I know

o 2 I am unsure

o 3 I have no idea

Question 9

What, in your opinion, the municipality should improve the current waste management

(Not read)

A o Get more often

o B Better infrastructure

C o Better information and educating

o D Trash bag fee

o E Other

o F None

Question 10

Would you be prepared at paying more for a better waste management in Gothenburg

o Yes

o no

Question 11

If people burn or throw garbage incorrectly, why do you think that is?

(Not read)

o 1- ease

o 2- Not enough waste separation sites

o 3- ignorance of environmental impact

o 4- Protest

o 5 Save money

o 6 Other:

Thank you for your participation

## Appendix 7 Interview Questions

1. Vill du (Företag) öka återvinning och minska brännbart avfall?
2. Hur gör ni för att få folk att öka-minska detta?
3. Är ni nöjda med nivån-mängden återvinning eller är det nåt ni vill ändra på?
4. Har ni initativ för att ändra eller påverka detta?
5. Vilka krafter-makt har ni för att ändra och påverka detta?
6. Innovation förklaring
7. Vad tycker du?
8. Skulle detta kunna funka för (företag) ? Vaför, varför inte?
9. Hur skulle det kunna anpassas eller införars?

English:

1. Are you (Company) increase recycling and reduce solid-waste?
2. What do you do to get people to increase-decrease this?
3. Are you satisfied with the level - the amount of recovery or is it something you want to change?
4. Do you have initiative designed to change or influence this?
5. What forces or power do you have to change and influence this?
6. Innovation explanation- What do you think?
8. Could this work for (business) ? Why not?
9. How would it be possible to adapt or implement this?

## Appendix 8 Answers to Structured Interview

| | 1a | 1b | 1c | 1d | 1e | 1f | 1g | 1h | 1i | 1j | 2 | 3 | 4 | 5a | 5b | 5c | 5d | 5e | 5f | 6 | 7 | 8 | 9 | 10 | 11 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 2 | 3 | 2 | 2 | 8 | 2 | 9 | 2 | 2 | 1 | 5 | Ja | 3 | 1 | 3 | 1 | 3 | 3 | 7 | 1 | 1 | 5 | Nej | 1 |
| 2 | 7 | 2 | 2 | 2 | 1 | 8 | 2 | 9 | 2 | 2 | 2 | 2 | Ja | 2 | 1 | 1 | 1 | 2 | 2 | 4 | 1 | 1 | 3 | Nej | 1 |
| 3 | 7 | 2 | 3 | 2 | 2 | 8 | 2 | 9 | 9 | 2 | 2 | 3 | Ja | 2 | 1 | 2 | 1 | 1 | 2 | 7 | 1 | 1 | 3 | Nej | 1 |
| 4 | 7 | 2 | 3 | 2 | 2 | 8 | 2 | 9 | 2 | 3 | 1 | 2 | Ja | 1 | 2 | 2 | 1 | 1 | 3 | 7 | 1 | 1 | 2 | Nej | 1 |
| 5 | 7 | 2 | 3 | 2 | 2 | 8 | 2 | 9 | 2 | 2 | 3 | 5 | Ja | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 1 | 4 | Nej | 5 |
| 6 | 7 | 2 | 3 | 2 | 2 | 8 | 2 | 9 | 2 | 3 | 2 | 5 | Ja | 2 | 2 | 2 | 1 | 1 | 2 | 2 | 3 | 1 | 4 | Nej | 5 |
| 7 | 7 | 2 | 3 | 2 | 2 | 8 | 2 | 9 | 2 | 3 | 1 | 2 | Ja | 1 | 1 | 2 | 1 | 1 | 1 | 4 | 2 | 1 | 6 | Nej | 1 |
| 8 | 7 | 2 | 3 | 1 | 1 | 8 | 2 | 1 | 2 | 2 | 1 | 5 | Ja | 2 | 1 | 2 | 1 | 1 | 3 | 1 | 8 | 1 | 6 | Nej | 6vetej |
| 9 | 7 | 2 | 3 | 1 | 1 | 8 | 2 | 1 | 2 | 2 | 1 | 2 | Ja | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 3 | 1 | 4 | j | 3 |
| 10 | 7 | 2 | 3 | 1 | 1 | 8 | 2 | 1 | 2 | 2 | 1 | 2 | Ja | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 3 | 1 | 4 | j | 3 |
| 11 | 7 | 2 | 3 | 2 | 2 | 8 | 2 | 9 | 2 | 2 | 2 | 2 | Ja | 2 | 2 | 2 | 1 | 1 | 2 | 1 | 2 | 1 | 3 | Nej | 1 |
| 12 | 7 | 2 | 3 | 2 | 2 | 8 | 2 | 1 | 2 | 3 | 2 | 2 | Ja | 2 | 1 | 2 | 1 | 1 | 2 | 7 | 7 | 1 | 6 | Nej | 1 |
| 13 | 7 | 2 | 3 | 2 | 2 | 8 | 2 | 1 | 2 | 2 | 1 | 2 | Ja | 1 | 1 | 2 | 1 | 1 | 2 | 2 | 2 | 1 | 4 | ja | 1 |
| 14 | 7 | 2 | 3 | 2 | 2 | 8 | 2 | 9 | 2 | 3 | 2 | 5 | Ja | 3 | 2 | 2 | 1 | 1 | 3 | 4 | 8 | 1 | 6 | Nej | 6vetej |
| 15 | 7 | 2 | 3 | 2 | 2 | 8 | 2 | 9 | 2 | 2 | 2 | 2 | Ja | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 7 | 1 | 2 | Nej | 1 |
| 16 | 7 | 2 | 3 | 2 | 2 | 8 | 2 | 9 | 2 | 2 | 3 | 5 | Ja | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 1 | 4 | ja | 5 |
| 17 | 7 | 2 | 3 | 2 | 2 | 2 | 6 | 2 | 1 | 2 | 1 | 2 | Ja | 1 | 1 | 1 | 1 | 1 | 2 | 7 | 2 | 1 | 6 | Nej | 1 |
| 18 | 7 | 2 | 6 | 2 | 2 | 8 | 2 | 9 | 2 | 2 | 1 | 2 | Ja | 1 | 1 | 2 | 1 | 1 | 2 | 1 | 2 | 1 | 6 | Nej | 1 |
| 19 | 7 | 1 | 6 | 1 | 1 | 6 | 2 | 1 | 2 | 2 | 1 | 5 | Ja | 3 | 3 | 3 | 3 | 3 | 3 | 7 | 8 | 1 | 6 | Nej | 1 |
| 20 | 7 | 2 | 6 | 1 | 1 | 6 | 2 | 1 | 2 | 2 | 1 | 5 | Ja | 3 | 3 | 3 | 3 | 3 | 3 | 7 | 8 | 1 | 6 | Nej | 1 |
| 21 | 7 | 2 | 6 | 2 | 8 | 2 | 2 | 9 | 2 | 3 | 2 | 5 | Ja | 2 | 1 | 3 | 1 | 1 | 3 | 7 | 7 | 1 | 5 | Nej | 5 |
| 22 | 7 | 2 | 3 | 2 | 2 | 8 | 2 | 2 | 2 | 2 | 3 | 2 | Ja | 1 | 1 | 3 | 1 | 1 | 2 | 4 | 1 | 1 | 6 | ja | 1 |
| 23 | 7 | 6 | 3 | 2 | 2 | 8 | 2 | 1 | 2 | 2 | 2 | 2 | Ja | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 1 | 3 | Nej | 1 |
| 24 | 7 | 2 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | Ja | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 7 | 1 | 3 | Nej | 1 |
| 25 | 7 | 2 | 3 | 2 | 2 | 8 | 2 | 9 | 2 | 2 | 2 | 2 | Ja | 1 | 1 | 2 | 1 | 1 | 2 | 4 | 1 | 1 | 2 | Nej | 1 |
| 26 | 7 | 1 | 2 | 1 | 1 | 2 | 2 | 1 | 2 | 2 | 2 | 1 | Ja | 2 | 1 | 2 | 1 | 1 | 3 | 8 | 3 | 1 | 2 | ja | 1 |
| 27 | 7 | 2 | 3 | 2 | 2 | 8 | 2 | 9 | 2 | 3 | 2 | 1 | Ja | 1 | 1 | 1 | 1 | 1 | 2 | 8 | 4 | 1 | 4 | Nej | 1 |
| 28 | 7 | 2 | 3 | 2 | 2 | 8 | 2 | 1 | 2 | 2 | 3 | 1 | Ja | 2 | 1 | 2 | 1 | 1 | 2 | 8 | 1 | 1 | 3 | Nej | 3 |
| 29 | 7 | 2 | 3 | 2 | 2 | 6 | 2 | 1 | 2 | 2 | 2 | 1 | Ja | 3 | 2 | 3 | 1 | 1 | 3 | 8 | 7 | 1 | 3 | Nej | 1 |

| | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 30 | 7 | 2 | 3 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 1 | 1 | Ja | 1 | 1 | 1 | 1 | 1 | 2 | 3 | 1 | 1 | 4 | ja | 3 |
| 31 | 7 | 2 | 3 | 2 | 2 | 2 | 2 | 9 | 2 | 2 | 1 | 1 | Ja | 1 | 1 | 2 | 1 | 1 | 2 | 8 | 3 | 1 | 3 | Nej | 1 |
| 32 | 7 | 2 | 3 | 2 | 2 | 8 | 2 | 9 | 2 | 2 | 2 | 1 | Ja | 2 | 1 | 1 | 1 | 1 | 2 | 8 | 2 | 1 | 3 | Nej | 1 |
| 33 | 7 | 2 | 3 | 2 | 2 | 8 | 2 | 9 | 2 | 2 | 2 | 2 | Ja | 2 | 1 | 1 | 1 | 2 | 7 | 2 | 1 | 1 | 3 | Nej | 1 |
| 34 | 7 | 2 | 3 | 2 | 2 | 2 | 2 | 9 | 2 | 3 | 2 | 2 | Ja | 2 | 1 | 2 | 1 | 1 | 2 | 7 | 2 | 1 | 3 | ja | 1 |
| 35 | 7 | 1 | 3 | 2 | 2 | 8 | 2 | 9 | 2 | 2 | 2 | 2 | Ja | 2 | 1 | 2 | 1 | 1 | 2 | 7 | 2 | 1 | 3 | Nej | 1 |
| 36 | 7 | 2 | 3 | 2 | 2 | 8 | 2 | 9 | 2 | 2 | 2 | 5 | Ja | 2 | 1 | 2 | 1 | 1 | 2 | 8 | 8 | 2 | 3 | Nej | 1 |
| 37 | 7 | 2 | 3 | 2 | 2 | 8 | 2 | 9 | 2 | 2 | 2 | 1 | Ja | 2 | 1 | 1 | 1 | 1 | 2 | 4 | 2 | 1 | 3 | Nej | 1 |
| 38 | 7 | 2 | 3 | 2 | 2 | 8 | 2 | 9 | 2 | 3 | 2 | 1 | Ja | 1 | 1 | 1 | 1 | 1 | 2 | 8 | 4 | 1 | 4 | ja | 1 |
| 39 | 7 | 2 | 6 | 2 | 2 | 8 | 2 | 9 | 2 | 2 | 1 | 2 | Ja | 1 | 1 | 2 | 1 | 1 | 2 | 1 | 2 | 1 | 6 | Nej | 1 |
| 40 | 7 | 2 | 3 | 2 | 2 | 8 | 2 | 9 | 2 | 2 | 2 | 2 | Ja | 2 | 1 | 1 | 1 | 2 | 7 | 2 | 1 | 1 | 3 | ja | 1 |