The circular business model and its barriers

- *through the eyes of Swedish professionals*

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Abstract

Society and the business community are facing severe sustainability issues, such as resource scarcity leading to increasing commodity prices on resources, e.g., oil, or water scarcity which would impact both firms and society profoundly. This development is due to our current way of pursuing business with a linear business model. Nevertheless, there are ways for firms to address and work against these issues, where one way is adopting *circular business models.* However, since these models fail to be widespread in the business community due to numerous barriers and uncertainties, the advancement of circular business models is hindered. Therefore, the aim of this thesis is to create a better understanding of why Swedish firms are struggling in adopting circular business models and what measures are viewed as most effective to advance circular business models. The methodological approach for this thesis is a qualitative survey conducted on Swedish professionals. The main finding illustrates the existence of numerous barriers which complicate the adoption of circular business models for Swedish firms, where the most prominent are *lack of knowledge within the firm, regulation, lack of financial capital* and *lack of cooperation between various actors.* Concerning what measures are most effective for the advancement of circular business models, a key finding demonstrates that an overwhelming majority of Swedish professionals propose measures concerning regulation.

Keywords: *circular economy, circular business model, barriers, business model*

Key- words, definitions, and concepts

Barrier → a circumstance or obstacle that keeps people or things apart or prevents communication or progress

Circular economy (CE) → a system which aims to be regenerative, reformative and restorative while simultaneously striving to reduce the speed of waste generation (Ghisellini, Cialini, and Ulgiati, 2016; Lieder and Rashid, 2016; Oghazi and Mostaghel, 2018)

Business model (BM) → "*a model which describes an architecture for how a firm creates and delivers value to customers and the mechanisms employed to capture a share of that value*" (Teece 2018, 40)

Linear business model (LBM) → an open-loop system, meaning that the supply chain process is linear and comes to an end when reaching the customer (Johannsdottir, 2014)

Circular business model (CBM) → "*a business model in which the conceptual logic for value creation is based on utilising the economic value retained in products after use in the production of a new offerings*" (Linder and Williander 2015, 2-3)

Closed loop → controls material inputs to maximise recycling and recovery of materials, minimise waste to landfill whilst greatly reducing the environmental footprint

Product-service systems (PSS) → business models which aim to be pro-environment by enabling collaborative consumption of both products and services

"Green" (*as an adjective*) → a product or service that is not or less harmful to the environment compared to other products or services

"Greening" (*as a verb*) → make less harmful to the environment

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1. Introduction

1.1 Background

Due to our current and earlier way of dealing with resources, we find ourselves facing severe sustainability issues in many different and vast areas such as global warming, loss of natural capital and resource scarcity (Lovins, 2008; Esposito, Tse and Soufani, 2018). Sustainability issues are often described as "wicked problems" due to their immense complexity and unique nature which make these issues awfully hard to solve (Churchman, 1967; Azapagic and Perdan, 2014).

The *linear business model* and its "take, make and dispose" approach is steering the world into a massive wheel of waste generation, resource scarcity, and increasing price levels which are problematic for the manufacturing foundation of our economy (Ellen MacArthur Foundation, 2013; Oghazi and Mostaghel, 2018). The linear business model is presented as a basic linear process, that commences with the extraction of a resource and where it ends up as rubbish (Johannsdottir, 2014; Sauvé, Bernard and Sloan, 2016). In more detail, this "cradle-to-grave" process constitutes of firms extracting resources to use as input materials for manufacturing. Within the manufacturing process, firms then apply energy and labour to the extracted resources to produce a product. Afterward, firms sell the product to an end customer and obtain value in terms of monetary profit. When the product no longer fulfils its purpose or is usable for the customer it is disposed of as waste. Hence, the linear business model creates needless resource use, resulting in resource scarcity and waste generation (Ellen MacArthur Foundation, 2013). Within the linear manufacturing process resources are wasted in numerous ways, such as waste in the production chain, end-of-life waste, and energy use (ibid).

Accordingly, has the linear business model led to resource scarcity where for instance oil can be considered scarce due to, e.g., the volatility in commodity price this good has had (Ellen MacArthur Foundation, 2013). Water is another significant resource which is utilised by the majority of industries such as chemical, beverage and automotive (Chernock, 2013; Kalaitzi et al., 2018). Morrison et al. (2009) even state that water scarcity constitutes a higher business risk than oil for firms. Furthermore, this risk is anticipated to become more severe in some parts of the world as a result of climate change, population growth, and new lifestyles (Jefferies et al., 2012; Kalaitzi et al., 2018). These examples of resource scarcity will become even more problematic since the global middle class is predicted to have doubled by 2030, and the global demand will require at least two Earth's natural resources to be met and satisfied (Esposito, Tse and Soufani, 2018). Consequently, this development results in an even higher demand for already scarce resources. The anticipated resource scarcity will most likely have implications on firms since many firms are dependent on a constant supply of resources in order to operate. When resources, such as water, oil, metal, and gas, later become scarcer, firms will experience more pressure when conducting business (Kalaitzi et al., 2018).

Moreover, waste generated from the linear business model also poses a serious issue to society and firms. Within the whole production chain, unnecessary waste is created where food markets make a good example (Ellen MacArthur Foundation, 2013). It is estimated that along the whole food supply chain, the total global amount of generated waste composes one-third of the food production every year (Gustavsson et al., 2011; Ellen MacArthur Foundation, 2013).

Even though the current situation might look gloomy, there are ways to combat the above-mentioned sustainability issues. One course of action, circular economy, provides a different approach to managing resource scarcity and waste generation. According to Stahel (2016), the aim of circular economy is to redefine the logic of goods, which means that at the end of a good's lifecycle instead of disposing of it, circular economy regenerates the good and turns it into other forms of resources with new purposes. Furthermore, it advocates one to reuse, repair, recycle and regenerate a product or a service instead of dumping it, which switches focus from newness to sufficiency within the economic logic (ibid). Therefore, circular economy is considered to be an approach with high potential of better managing resources and reducing waste generation (Bocken et al., 2016)**.** An illustrative example is Sweden having high expectations on circular economy and its potential to, e.g., phase out fossil fuels and replacing them with renewable energy (Regeringskansliet, 2017a). Sweden's environmental minister, Karolina Skog, stated: "*It is important that we change the social economy to become smart, inclusive, innovative and thus long-term competitive for the future"* (Regeringskansliet, 2017b) when talking about the move towards a more circular economy. Lastly, to emphasise the potential the world sees in circular economy as an approach to achieve sustainable growth, the EU has created an action plan towards a circular economy. The plan strives to retain the value of products and resources, minimise waste and increasing recycling and reusing (The European Council, 2016).

Consequently, there are ways for firms to address, e.g., resource scarcity and fight against wicked problems in their own domain. One way is adopting a *circular business model*, which is a tool for firms when striving for a circular economy (Linder and Williander, 2015; Lewandowski, 2016; Oghazi and Mostaghel, 2018). According to Mont et al. (2017), circular business models are a shared description of a concept where business models make capital of retaining the residual value of products, materials, and resources. Furthermore, circular business models can also be described as business models that focus on how a firm creates, delivers and captures value with and within closed resource loops (Lewandowski, 2016). There are several types of circular business models, for instance, the gap-exploiter model, the performance model, the access model, the hybrid model and the classic long-life model (Bakker et al., 2014; Mont et al., 2017). Even though there are several possibilities for firms to work with circular business models, for instance, the five types just mentioned, the majority of today's firms have not adopted a circular business model.

1.2 Problem discussion

Although circular business models are not widespread in the business community, there are numerous benefits and opportunities to be gained from them. These range from financial, economic, environmental to strategic benefits and opportunities (Mont et al., 2017). Ellen MacArthur Foundation (2013) goes into further depth and states that benefits are made up of much more than only operational aspects. Needless to say, it is beneficial for firms to obtain efficiency, but also further aspects such as source of innovation and growth. Moreover, Ellen MacArthur Foundation (2013) specify what benefits and opportunities that could be gained from adopting circular business models. In a more strategic matter, circular business models aid firms to expand, mainly since these models steer firms into new business areas with high-profit potentials, such as reverse logistics and reverse value cycles (Ellen MacArthur Foundation, 2013; Mont et al., 2017). Circular business models also manage to reduce the dependency on resources as they utilise secondary materials from activities such as recycling, remanufacturing and reusing. Thus, likewise, reducing the supply risk and volatility risk in pricing (Mont et al., 2017). Additional gains from remanufacturing or reusing can be the decrease in material expenses by up to 50% (Ellen MacArthur Foundation, 2013).

Additionally, enhanced customer relationship is yet another benefit to be obtained from circular business models since within them, firms can establish a life-long relationship with their customer, offering support and upgrades to the customers' purchases, resulting in an increased customer loyalty towards the firms (Ellen MacArthur Foundation, 2013; Ellen MacArthur Foundation and McKinsey Center for Business and Environment, 2015). Furthermore, circular business models advance the overall innovation within firms by pushing them to rethink the whole business and its processes. Thus, putting firms in the foremost positions of the market and portraying them as innovative (Ellen MacArthur Foundation, 2013; Mont et al., 2017). Further examples that emphasises benefits and opportunities read as follows: improved margins (originating from the supply switch between virgin natural resources and secondary materials), minimised amount of waste (due to capturing and reusing materials and products) and a stronger brand (Ellen MacArthur Foundation and McKinsey Center for Business and Environment, 2015; Mont et al., 2017).

Based on the above-mentioned discussion, it is fair to conclude that there are *numerous* benefits and opportunities in adopting circular business models. So how come that the linear business model still dominates the market? Also, since the logic of circular business models is so alluring, then why are they not more widespread in the business community today?

Why firms have yet to successfully adopt circular business models are due to numerous barriers and uncertainties, or as Linder and Williander (2015) put it 'causes for reluctance', a subject area which is well documented in previous literature (Rizos et al., 2016; Mont et al., 2017). These barriers can range from e.g. organisational to cultural, financial, economic and technological barriers (Oghazi and Mostaghel, 2018). Moreover, can barriers be found on

both macroeconomic and microeconomic levels and can also be either internal or external (Mont et al., 2017; Pheifer, 2017). Consequently, these barriers vary greatly and hinder firms from all kinds of different angles when adopting circular business models.

Furthermore, the majority of previous research has applied a case study methodology to investigate barriers to circular business models (Govindan and Hasanagic, 2018). Therefore, the field is characterised by a gap which research that applies a broader perspective can fill. Consequently, this thesis will not solely study a single firm and aims to contribute to the field with a more holistic perspective and a wider understanding of barriers to circular business models. Additionally, the aim is to provide knowledge regarding what measures are most effective for the advancement of circular business models. This knowledge can reduce these challenging barriers and thus, enhance the possibility for circular business models to become more widespread in the business community.

According to Oghazi and Mostaghel (2018), Sweden is one of the top countries in the world in terms of research regarding circular economy. Therefore, it seems beneficial to conduct a study on Swedish professionals with experience of circular economy and circular business models. Since professionals also work hands-on with circular business models their view concerning the subject area is a valuable perspective to examine. Thus, this thesis will provide knowledge regarding what barriers are most prominent through the eyes of Swedish professionals, an interesting aspect when combined with previous research. It is our hope and belief that firms, and decision-makers can benefit from this information and get a fuller picture of what professionals with prior experience deem to be most problematic and what measures need to be prioritised for the advancement of circular business models.

1.3 Purpose

The aim of this thesis is to create a better understanding of why Swedish firms are struggling in adopting circular business models as well as create knowledge as to what measures Swedish professionals consider most effective to advance such business models.

1.4 Research questions

- What barriers are preventing Swedish firms from adopting circular business models?
- What measures are viewed as most effective, by Swedish professionals, for the advancement of circular business models?

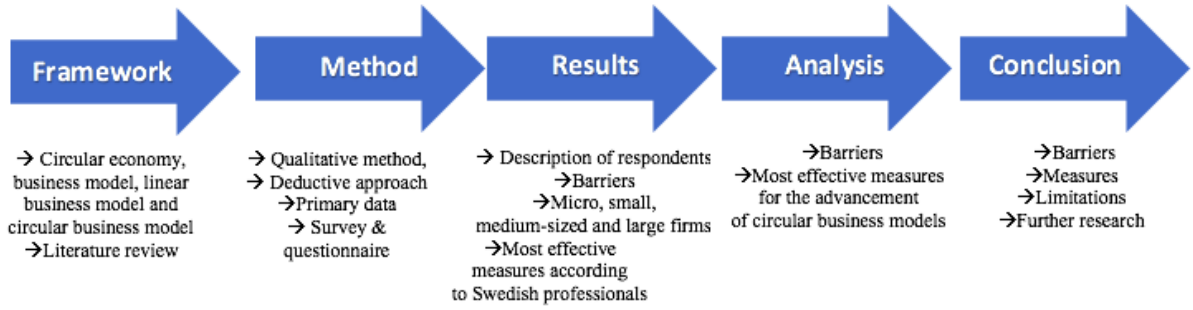
1.5 Delimitations

In the subject area of circular business models, solely barriers are examined to provide a more in-depth analysis. Technological barriers, while important, have been excluded from this thesis' focus altogether since they are considered more appropriate to be examined by people

with technical skills and know-how. Moreover, solely Sweden and Swedish professionals are included in the examination of this thesis.

1.6 Disposition

The thesis will be structured as follows: Chapter 2, *theoretical framework*, outlines the theory of this study as well as a review of previous literature. This chapter aims to provide the reader with an increased understanding of the subject area and results from earlier research which is used as a tool when analysing the gathered data. In chapter 3, *methodology*, the authors' choice of method, research design, selection of respondents, data gathering, data compilation and data analysis are presented and motivated. In chapter 4, *results*, the gathered data from the conducted survey is presented with a sectioning of the two research questions in order to facilitate for the reader. In chapter 5, *analysis*, chapter 2 and 4 are merged for the sake of interpreting gathered data based on hitherto presented theoretical foundation. In chapter 6, *discussion and conclusion*, findings from previous chapters are presented and concluded as well as the limitations of the study with suggestions for further research. The disposition is summarised using the figure below.



2. Theoretical framework

2.1 Circular economy (CE)

Oghazi and Mostaghel (2018) present circular economy (CE) as a system which aims to be regenerative, reformative and restorative while simultaneously striving to reduce the speed of waste generation (Ghisellini, Cialini, and Ulgiati, 2016; Lieder and Rashid, 2016). Furthermore, the aim of CE is to provide a framework and opportunities for economic growth to proceed but simultaneously reduce the usage of finite resources and environmental impacts (Oghazi and Mostaghel, 2018). This is made possible by enhancing quality and preserving value in materials, components, and products or reusing them over time. Hence, economic development can be fulfilled in combination with environmental sustainability (ibid).

Additionally, Nußholz (2017) portrays CE in a similar way but presents it as a concept with the purpose to improve our resource productivity and efficiency. The author defines CE as a paradigm which aims to redefine the current economic system, leaving linear resource flows behind and moving towards closed-loop resource flows. Furthermore, when using closed-loop resource flows, firms are able to maintain the rooted environmental and economic value in products over time (Stahel, 1994; Nußholz, 2017). Thus, it is possible to increase resource efficiency and generate environmental gains through minimised waste and reduced raw material extraction (Nußholz, 2017).

2.2 Business model (BM)

A business model (BM) can be described as "*an architecture for how a firm creates and delivers value to customers and the mechanisms employed to capture a share of that value*" (Teece 2018, 40) or "*the conceptual and architectural implementation of a business strategy and the foundation for the implementation of business processes.*" (Richardson 2008, 136). Or simply put, an explanation of how a firm does business (Richardson, 2008). Likewise, Johannsdottir (2014) describes a BM as the sketch of a firm's business philosophy. Moreover, the BM demonstrates how firms create, deliver and capture value (Osterwalder et al., 2010). Richardson (2008) proposes a framework, where value composes the core idea, with the aim to combine the firm's ideas about how to compete and its actual strategic actions. The business model framework constitutes of three central components, which are: value proposition, value creation and value capture (Richardson, 2008; Mont et al., 2017). Value proposition concerns consumer segmentation and the offering with a focus on what in terms of value will be delivered to the consumer (Richardson, 2008; Mont et al., 2017). The second, value creation, refers to the value chain, resources and, business processes. Within this component, the attention falls on how firms create value for their customers. The final component, value capture, involves the cost structure and the revenue model. Therefore, this part of the framework explains how firms generate profit and revenue from the value process (Richardson, 2008; Teece, 2009; Mont et al., 2017).

2.3 Linear business model (LBM)

Johannsdottir (2014) explains that business models come in numerous ways, e.g., revenue models, pricing models, and value propositions models. Additionally, if nothing further is stated they are assumed to be linear business models (LBMs) with an open-loop system, meaning that the supply chain process is linear and comes to an end when reaching the customer (ibid). Within LBMs, there is a distinct beginning and end, where it commences with an extraction of resources and finalises with these resources becoming waste, thus, a "cradle-to-grave" model (Sauvé, Bernard and Sloan, 2016). In more detail, Johannsdottir (2014) describes the flow of resources in LBMs as follows; the resources are input materials for firms, once within the firm, the resources are then utilised in production, business operations and as equipment, machinery or as other types of components. Lastly, the outputs of the LBM process and its resource flow are that a substantial amount of the resources are turned into waste and emissions (ibid).

2.4 Circular business model (CBM)

Mont et al. (2017) describe how circular business models (CBMs) differentiate themselves from other business models by obtaining the residual value of products, materials, and components in closed loops. Additionally, in contrast to traditional business models, e.g., the linear one, CBMs are perceived as more fitting to handle challenges of resource scarcity, both in term of economic and environmental aspects (Mont et al., 2017). However, to define what a CBM is can be somewhat problematic, as embodied in Nußholz's (2017) literature review of CBMs where the author finds that a clear definition of the term is rarely provided in previous literature. Nevertheless, definitions for CBMs do exist, one, for instance, reads as follows:

"*a business model in which the conceptual logic for value creation is based on utilising the economic value retained in products after use in the production of a new offerings. Thus, a circular business model implies a return flow to the producer from users, though there can be intermediaries between the two parties [. . . and] always involves recycling, remanufacturing, reuse or of their sibling activities (e.g., refurbishment, renovation, repair).*" (Linder and Williander 2015, 2-3).

Oghazi and Mostaghel (2018) state that the purpose of a business strategy traditionally has been to create value for customers and seize a greater amount of value than competitors. However, within CBMs, it is advocated that business should be conducted in a sustainable way, where not only economic value is measured and prioritised but also environmental and social value. Hence, environmental aspects, social aspects, and economic aspects can all be considered outcomes from CBMs (ibid).

According to Oghazi and Mostaghel (2018), economic aspects can be reduced costs for firms through reuse, remanufacture and reduced use of resources and components. Reusing and

sharing resources between firms (but also members of society) are activities which fall within social aspects. When firms share resources with each other, it contributes to a stronger interaction. Environmental outcomes from CBMs can be minimised usage of resources and waste production (ibid). Moreover, since CBMs acknowledge society and the environment as stakeholders, these models perceive their interests equally as important as other stakeholders' interests. Hence, the purpose of CBMs is to enhance the quality of human life (Stubbs and Cocklin, 2008; Oghazi and Mosthagel, 2018).

2.5 Literature review

A thorough assessment of existing literature concerning barriers to CBMs took place in order to identify the most prominent ones. The foundation of Table 1 constitutes of this literature review but have been created and compiled by us, the authors themselves. The first column of Table 1, *Barriers to CBMs*, are self-composed definitions of the most recurring barriers in previous literature. The second column, *Description*, explains what the barriers mean and takes its point of departure in previous literature. The third and last column, *Additional references*, presents further research which also mention these barriers to CBMs.

Table 1. Barriers to CBMs

Barriers to CBMs	Description	Additional references
Consumers' negative perceptions	Lack of willingness to pay for remanufactured goods (Michaud and Llerena, 2011), lack or uncertainty regarding acceptance and demand of circular products and offerings (Mont et al., 2017) prejudice that restored products are inferior compared to new ones (Mugge, Jockin and Bocken, 2017)	Working Group Finance (2016)
Lack of knowledge within the firm	Lack of experience within the organisation and higher demand for firm resources (Kindström and Kowalkowski, 2014; Mont et al., 2017)	
Lack of financial capital	Lack of initial capital, lack of financial possibilities to private funds and traditional bank funding (Rizos et al., 2016)	Mont et al. (2017)
Lack of commitment from manager/management/board	Change is difficult and costly for organisations and individuals, restructuring is costly and risky, opposition from managers who favour the current structure may hinder the expected advantages for the firm and the environment (Oghazi and Mostaghel, 2018)	Hoffman and Bazerman (2007); Bechtel, Bojko and Völkel (2013
Regulation	The existence of obstructive regulation (Oghazi and Mostaghel, 2018), Lack of support from relevant laws and legislation (Kuo et al., 2010; Linder and Williander, 2015) lack of incitement (e.g. financial) from government to promote resource efficiency (Mont et al., 2017)	Bechtel, Bojko and Völkel (2013); Vanner et al. (2014); Rizos et al. (2016)
Higher risk	Due to CBMs particular structure, the investment costs and evaluation methods are extremely complex, return on investment is awfully hard to calculate and higher dependency between firms (Oghazi and Mostaghel, 2018) risk for cannibalisation, higher uncertainty and therefore investment risk (Linder and Williander, 2015)	Guiltinan (2009); Working Group Finance (2016)
High initial investment cost	Required initial investment may cause reduction in short term marginal (Working Group Finance, 2016), recycled materials still often more expensive than in LBMs, expertise in human resources might be more expensive (Oghazi and Mostaghel, 2018)	Tukker (2004); Kok, Wurpel and Ten Wolde (2013)
Lack of cooperation between various actors	The more differentiated recycling of materials, the higher necessity of a network (various actors) that cooperates (Rizzi et al., 2013; Linder and Williander, 2015)	Mont et al. (2017)

As Table 1 illustrates, a large body of literature exists concerning barriers to CBMs. However, the remaining part of this literature review will be going into more depth regarding three articles. These articles were chosen with the belief that they will provide important angles when analysing the gathered data. The remaining part of the literature review will commence with Oghazi and Mostaghels' (2018) research.

2.5.1 Barriers to CBMs from an industrial perspective

Oghazi and Mostaghel (2018) have applied an industrial perspective with the methodology of multiple case studies, thus using a qualitative approach. The authors argue that since research regarding CBMs is its initial stage, an explorative nature of study is preferable as it results in capturing the occurrence in its natural context. Six firms were included in the study with the size limitation of 10 employees or more, five of which have thousands of employees and

operate on a global scale. The chosen firms, all Swedish, make for interesting cases as Sweden is among leading countries in the world regarding CE (ibid). In order to generalise their findings, an extensive literature review was realised which included not only research concerning CBMs but also sustainable BMs, closed-loop BMs and product-service systems (PSS). PSS have many features aligned with the reduction of resources but does not, however, exert the term closed loop (Oghazi and Mostaghel, 2018).

In their study, Oghazi and Mostaghel (2018) identify 16 challenges to CBMs. The authors commence with a macro perspective and portray *lack of supporting regulation* as a considerable challenge. Closely behind follow *organisational barriers, cultural barriers, financial and economic barriers* as well as *technological barriers*. Whereas the mentioned challenges can be viewed as all-embracing and general with many sub-barriers to be placed within them, further specific barriers are also declared. These read as follows; *customer type restrictions, product category restrictions, fashion vulnerability, risk of cannibalisation, return flow challenges, lack of channel control, confidentiality for individual firms, trust among partners, mutual benefits for all partners, increase of dependency to partners and higher risks for CBMs* (ibid).

However, Oghazi and Mostaghel (2018) conclude three challenges (i.e., barriers) as primary; (1) reconstruction of the revenue model; (2) relationship with partners; and (3) designing sustainable offerings. The first primary challenge refers to apprehension considering the complexity of cost structures and risks (the unexpected costs and higher risks that accompany CBMs). The second primary challenge deals with issues related to collaboration, e.g., above-mentioned trust among partners, mutual benefits for all partners and increase of dependency to partners. The last primary challenge involves difficulties in creating products and services that are both durable and coveted in terms of changes in fashion and technology.

2.5.2 Causes for reluctance hindering CBM implementation

As their methodological approach, Linder and Williander (2015) have conducted a single case study. Hence, a qualitative methodology, just like Oghazi and Mostaghels' (2018). The case study was conducted on a Swedish manufacturing firm with nine employees, thus, a firm-specific perspective. Their single case study was categorised and designed as a long-term action research, where for instance, observations, semi-structured interviews, meetings and a segment survey were methods in order to collect data. As a result of this extensive data gathering, the authors developed a great understanding of the firm and the challenges it encountered when implementing CBMs (Linder and Williander, 2015). However, as the study was a single case one, the insights and knowledge gained is, firm-specific and cannot be used to generalise. This differs compared to Oghazi and Mostaghel (2018) which are able to generalise their results.

Linder and Williander (2015) examine causes for reluctance, i.e., barriers, which hinder CBM implementation. The study's focus is on CBMs based on reuse and remanufacturing, where the incentive for firms is increased net value creation within the value chain, obtained by increasing the usage of already existing components and products (ibid).
Furthermore, the authors identify ten barriers and challenges associated with CBMs, which are: *operational risk, fashion vulnerability, capital tied up, customer type restrictions, risk of cannibalisation, lack of supporting regulation, partner restrictions, requires technological expertise, product category restrictions, return flow challenges* (Linder and Williander, 2015). Thus, this shows that these barriers vary greatly and fall within different areas of a firm, ranging from operational to marketing.

Nevertheless, Linder and Williander (2015) emphasise that some barriers are more prominent than others based on the results of their study. When examining business risk, the authors make a comparison between LBMs and CBMs. The most significant finding presented by Linder and Williander (2015) is that when testing and approving CBMs, a higher business risk and uncertainty always follow along, unlike a comparable LBM. This is due to CBMs characteristics which complicate hypothesis testing and assessment of its key business model assumptions, compared to conducting hypothesis testing on LBMs and their key assumptions. For instance, when conducting the hypothesis testing, the prediction for CBMs goes farther into the future than what LBMs do. Hence, it is difficult to design and evaluate the hypotheses for CBMs since it involves a distant uncertain future (Linder and Williander, 2015). According to the authors, CBMs also need a greater amount of invested resources than what LBMs require. Additionally, due to the fact that CBMs takes a longer time to become validated on the market compared to LBMs, the invested resources remain at risk for a longer period of time (Linder and Williander, 2015). Consequently, CBMs have a higher business risk than LBMs. Moreover, Linder and Williander (2015) also identify two barriers, capital tied up and fashion vulnerability, as connected with business risk when testing and approving business models. According to Linder and Williander (2015), fashion vulnerability concerns how CBMs manage to handle the potential challenges that arise due to trends and fashion among products and the attractiveness of the aesthetic of the product.

2.5.3 Barriers to the implementation of CBMs by small and medium-sized enterprises

Rizos et al. (2016) have conducted an analysis of barriers from an online platform called 'GreenEcoNet'. From the total of 52 case studies provided by the platform, 30 met the criteria for further analysis and were selected to be part of the study. In order for a case study to be selected, the study had to fit within the CE concept alongside with including information deemed as satisfactory concerning barriers (ibid). Compared to Oghazi and Mostaghel (2018) as well as Linder and Williander (2015), Rizos et al. (2016) deliver a far more extensive study as the research examines 30 case studies but also since the study subjects vary in the country

of origin. 21 of the case studies are from the United Kingdom, five from the Netherlands and one each from respectively Estonia, Belgium, Germany and Greece.

Moreover, Rizos et al. (2016) contribute to the field since their study concerns implementation of CBMs by small and medium-sized enterprises (SMEs). The barriers acknowledged have been categorised into: *company environmental culture, lack of capital, lack of government support / effective legislation, lack of information, administrative burden, lack of technical and technological know-how and lack of support from the supply and demand network*. Thus, like part of Oghazi and Mostaghels' (2018) termed barriers (organisational barriers, cultural barriers, financial and economic barriers, and technological barriers) each of Rizos et al.s' (2016) named barriers, i.e., categories can also enlist sub-barriers in them.

Main findings include lack of support from the supply and demand network, lack of capital and lack of government support which constitute as the most voiced barriers by SMEs in their pursuit of a CE (ibid). The first refers to, for instance, both the lack of "green" suppliers and the objects (inputs) provided not being satisfactory enough. Another problematic aspect incorporated in this particular barrier seems to be SMEs position as stuck in the bottom of the global supply chains. The second can be explained as difficulties in gaining funds, e.g., the absence of initial investments and financial opportunities. Substitutes for private funds and traditional bank funding appear to be scarce. The last barrier simply means lack of efficient legislation alongside with absence of backing from local authorities.

2.5.4 Facilitating measures for the advancement of CBMs

In order to convert the primary challenges into opportunities for CBM performance, four propositions are made by Oghazi and Mostaghel (2018). The suggestions include to reconsider customer commitment, reconstruct external linkages and the revenue model as well as improve the existing cost structure (ibid). The first is explained as to engage customers early on in the process of developing a product or service, the second as to carefully select skilful partners in existing collaborative networks and the last two as to redesign existing revenue model to fit new sustainable offerings. Linder and Williander (2015) however, propose the necessity of broadening what aspects are to be included in fashion vulnerability, i.e., to not only focus on how the consumer's preference changes due to fashion, but also how it changes due to economy, function, and technology (Linder and Williander, 2015). Furthermore, in order to advance the development of CE and support SMEs transition towards CBMs, Rizos et al. (2016) emphasise the importance of strengthened attention from European and national policymakers. Additionally, policymakers are recommended to concentrate on "greening" consumer preferences, value chains and company cultures.

3. Methodology

3.1 Research process

The research process commenced with deciding upon what practical problem to be examined further, where the chosen problem was the CBM and its barriers. The unique angle of approach for this thesis was to examine the barriers to CBMs through Swedish professionals' point of view. To be able to reach professionals who most likely are scattered geographically and whose time generally is limited, a qualitative survey as methodological approach appeared appropriate. A qualitative survey's main purpose is to define the diversity of a subject area within a particular population and aims to explore experiences as well as explain phenomena and their meaning (Fink, 2003; Jansen, 2010). The qualitative survey constituted of a web-based questionnaire. The aim of the web-based questionnaire was to reach as many professionals as possible in order to gain a more holistic view and greater understanding. Thus, numerous respondents and possible fragmented geographical locations ruled out the idea of interviews.

Before constructing the survey an extensive literature review on barriers to CBMs was carried out and a phone interview with a contact from 'Cradlenet', a platform for circular economy, took place. Cradlenet was chosen since the organisation works to advance CE and CBMs in the Swedish business community, and as such both consists of and is in contact with knowledgeable and experienced professionals. The information and knowledge gained from these activities later composed the foundation of the survey. The contact with Cradlenet was initiated by an email from us asking if there was any possibility to use the platforms network as a gateway for the survey and questionnaire to reach Swedish professionals. Cradlenet was positive to this proposition and suggested that the questionnaire should be sent out as a separate newsletter to all members. Once the questionnaire was created the authors performed a test run on three students whom all have experience from surveys and questionnaires. Feedback was received from the test run and was taken into consideration before the actual launch of the survey. The questionnaire was sent out to 982 members via Cradlenet's membership list. Due to time limits, the questionnaire was open for responses one week and a reminder was sent out during that week.

3.2 Methods of research and method design

Because the thesis' aim is to describe and portray a phenomenon, a qualitative method has been adopted. A qualitative method means that empirical data gathering occurs in the form of words rather than by numbers and measurability as is the case in the quantitative method (Bryman and Bell, 2017). Furthermore, a deductive approach has been applied since it is anticipated to strengthen the objectivity of our research (Patel and Davidson, 2011). Compared to an inductive approach, a deductive such formulates its point of departure from existing literature, whereas the inductive uses empirics as its starting point (Patel and Davidson, 2011; Bryman and Bell, 2017). An abductive approach is a combination of the two

and is well suited for further developing a theory rather than formulating an entirely new one (Patel and Davidson, 2011; Bryman and Bell, 2017). One could, therefore, argue that this thesis applies a deductive approach with an abductive element since the current theory regarding barriers and measures is developed further by this study.

As the point of departure is built from previous literature and research, the research process is less likely to be biased from individual subjective perceptions (Patel and Davidson, 2011). Nevertheless, Patel and Davidson (2011) also underline that building research on previous literature may influence the researchers towards a certain angle. This could, in turn, affect the research so that new interesting findings are not noticed, an important aspect to bear in mind (ibid).

3.3 Qualitative survey

Surveys are commonly applied as a method when conducting a quantitative study. A survey can be defined as "*a systematic method for gathering information from (a sample of) entities for the purpose of constructing quantitative descriptors of the attributes of the larger population of which the entities are members.*" (Groves et al. 2004, 4). In other words, its main purpose is to portray numerical distributions of variables within a population (Jansen, 2010). Furthermore, making generalisations based on a study result is typical in quantitative surveys, i.e., the results of a sample can be generalised to apply to a whole population. Even though quantitative surveys are common there are also qualitative surveys. Hitherto, hardly any book concerning research methodology covers information as to what a qualitative survey is or how to conduct one (e.g., Patel and Davidson, 2011; Trost and Hultåker, 2016; Bryman and Bell, 2017; Wenemark, 2017).

However, Jansen (2010) explains that a qualitative survey's main purpose is *not* to portray numerical distributions but defining the diversity of a subject area within a particular population. Or as expressed by Fink (2003), a qualitative survey is recommended when exploring experiences and aiming to explain a phenomenon and its meaning. Jansen (2010) also stresses that a qualitative survey determines appropriate dimensions and values, thus the significant variation i.e., how widespread an aspect is in relation to another aspect or aspects. In this thesis, the variation of barriers as experienced by professionals. However, in this regard, it is also important to note that a qualitative survey can use metric data to categorise its findings (ibid). Jansen (2010) maintains that the empirical diversity of a subject area can be expressed in numbers and that the analysis determines whether a study is quantitative or qualitative. This thesis categorises the barriers into prominent and less prominent from metric data gathered through a qualitative survey. These categories are later utilised in the analysis.

To clarify, a qualitative survey studies the diversity of a subject area (not the distribution of variables as the quantitative) in a given (not randomly selected as in the quantitative)

population (ibid). In our case, this refers to the diversity and variety of barriers (to CBMs) within the selected population of Swedish professionals. Since the aim of the thesis is to explore and examine the experiences and opinions of professionals concerning barriers to CBMs one can conclude that a qualitative survey is an appropriate choice of method (Fink, 2003; Jansen, 2010).

3.4 Literature review

The literature collected for this thesis originates from peer-reviewed articles, books and other literature, where the majority of the referenced material constitutes of peer-reviewed articles published in well-established journals. This contributes strengthening the thesis' credibility as these peer-reviewed articles fulfil the criteria regarding satisfactory research and, therefore, have a high methodological quality. The literature gathered from the literature review makes up the foundation of the thesis' theoretical framework, have created knowledge regarding previous research and have been used as an analytical tool when interpreting the Swedish professionals' responses.

3.4.1 Foundation of theoretical framework

The literature for the theoretical framework has mainly been gathered from searches via electronic databases such as 'Supersök' and 'Google Scholar'. Keywords and references in already found peer-reviewed articles have been used as tools to facilitate the search for relevant literature. The most frequently used keywords when searching for literature were the following: *barriers, circular business model, circular economy and business model.*

3.5 Data gathering

The data for this thesis was gathered through a survey. The introductory part of the survey constituted of neutral questions. The first research question was answered by the second part of the survey where the respondents stated if they agreed or disagreed with a statement being a barrier or not to CBMs. Additionally, comment boxes were provided with the statements as well to give the respondents the opportunity to express themselves further. The second research question was covered by an open question which constituted the last part of the survey.

3.5.1 Primary data

The primary data has been gathered through a questionnaire conducted on Swedish professionals. The respondents' experience and background vary, which creates interesting angles of approach and differences for the thesis.

3.5.2 Selection of respondents

To be able to answer the thesis' research questions the most relevant respondents were considered to be professionals in the Swedish business community. This is motivated by

Sweden being one of the foremost countries within CE, both in terms of research and solutions (Oghazi and Mostaghel, 2018). Furthermore, since firms adopt CBMs, it is knowledge and perceptions among its employees that we, the authors, found most interesting and believe can contribute with valuable information regarding the difficulties with adopting CBMs. The aim with having professionals as the respondents is to capture and describe their perception of what barriers are prominent when adopting CBMs in actual businesses and what measures they view as most effective for the advancement of CBMs. We especially hoped to be able to capture and describe the perceptions and opinions of a varied amount of professionals coming from different sized enterprises and industries. Thus, leading to a greater and broader understanding of what prevents Swedish firms with different size and background from adopting CBMs according to Swedish professionals.

In total, 46 respondents answered the survey, however due to requirements, three were excluded as they were not considered to have sufficient knowledge concerning barriers to CBMs. The requirements were that the respondents needed to answer *"yes"* to one of the two following questions *"Are you currently working (or have previously worked) with circular business models or circular economy to some extent?"* or *"If the answer is no, do you have any plans to work with circular business models in the future?"*. Since three respondents did not answer yes to either question they were removed from the compilation of the data. Furthermore, the question "*what barrier do you consider to be most prominent?*" only had 42 out of 43 answers, meaning one non-complete answer to this question. The statement if high initial investment cost is a barrier or not to CBMs also had one non-completion. Additionally, there were 11 non-complete answers to the question *"What measures do you think would be most effective in promoting circular economy and circular business models?"*.

3.5.3 Questionnaire - technique and design

When creating a questionnaire there are a great many aspects which need to be considered. Generally, Bryman and Bell (2017) recommend the layout, design and language to be clear and easy for the sake of minimising the risk of the respondent forgetting a question or failing in understand the meaning. Furthermore, the authors stress that fewer open questions are preferable as it makes the questionnaire easier to answer as well as short questions in order to reduce the risk of the respondent quitting the questionnaire (ibid). Thus, when conducting the questionnaire fundamental principles regarding questioning technique were utilised.
Firstly, in order to create clear and easy questions (which are easy to answer) the following advice was respected; connected questions and answers, unambiguous questions, one question at the time, the avoidance of double negations, suitable time frame, carefulness in terms of hypothetical questions as well as averting leading questions (Patel and Davidson, 2011; Bryman and Bell, 2017; Wenemark, 2017).

Secondly, to make answering the questionnaire as easy as possible for the respondent, questions with fixed response options were selected as the main question type (though a few questions with open answers were developed). A question with fixed response options (i.e., a multiple-choice question) is a closed question where the researcher has pre-structured the answers, whereas an open question leaves the respondents to freely express themselves with words (Bryman and Bell, 2017). Needless to say, there are advantages and disadvantages with both closed and open questions. Closed questions make it, for instance, easier for the researcher to process the data, increase the comparability of the answers and is faster for the respondent to fill out the questionnaire (Bryman and Bell, 2017). Nevertheless, closed questions might also irritate the respondent if they feel like no alternative fits them and one risks losing intriguing answers which are not covered by the fixed response options (ibid).

Open questions, on the other hand, allows for the respondents' ability to express themselves with their own words and leave room for unexpected or unusual answers or reactions, i.e., answers that the researcher would not have imagined in the process of developing the questions and therefore are not included in the fixed response options (Bryman and Bell, 2017). With this in mind, commenting boxes were put in place in the questionnaire to be able to gain unexpected responses as well as providing an opportunity for the respondents to express themselves further. This way, the questionnaire could make use of the best of two worlds, making it as easy as possible for the respondent in answering and for the researchers in gathering data which could be used for the aim of the thesis. Finally, the questions were kept short.

Moving on to further detail regarding questioning technique and design. Since identical questions were asked in an unchanged order to all respondents, the questionnaire has a high level of standardisation which also is deemed desirable (Trost and Hultåker, 2016). Furthermore, due to all respondents' having the opportunity to answer each question freely (in addition to the fixed response option) the questionnaire's level of structuring is considered to be a semi-structured one.

It is typical for a questionnaire to start with neutral questions, e.g., questions about age, sex, job and so on (Patel and Davidson, 2011; Wenemark, 2017). According to Wenemark (2017), this helps with categorising the respondents into different groups. A few of the neutral questions were therefore constructed as to define what industry the respondents work in, if the firm they work at is micro, small, medium-sized or large and if the firm is a start-up or not. Moreover, a technique named 'inverted funnelling' (which means to first ask specific questions and conclude with more broad and general ones) is recommended to be applied in order to capture the respondents' point of view and help them think through the subject area while filling out the questionnaire (Patel and Davidson, 2011). Thus, this technique was also applied since it was the professionals' perspective on barriers which was sought.

Moreover, to reduce the risk of the so called 'central tendency' (i.e., people's impulse to avoid the endpoints and pull towards the middle), the questions with fixed response options were constructed with four multiple choices (Patel and Davidson, 2011). The following choices were at the respondents' disposal; 'fully agree', 'partly agree', 'partly disagree' and 'disagree'. However, in order for the respondents' to be able to express their lack of knowledge whether a specific barrier was, in fact, a barrier, (say if they had not come across one brought up in the questionnaire) a fifth fixed response option 'no opinion' was added. This was done for the sake of averting the central tendency yet leave the respondents with the possibility to be neutral, which has to do with ethics. The fifth option was not placed in the middle but as last of the multiple choices (see appendix where the entire questionnaire is featured). Additionally, the multiple choices were placed vertically since it minimises the risk of the respondent selecting the wrong option by mistake (Bryman and Bell, 2017).

3.5.4 Missive letter

To be able to inform and motivate the respondents to participate one need to include a missive letter, when sending out the questionnaire (Patel and Davidson, 2011; Wenemark 2017). According to Patel and Davidson (2011), it is significant to include all the information needed to participate, such as if participation is anonymous and/or confidential. Therefore, a well-structured missive letter accompanied the questionnaire to provide appropriate information needed to partake.

Additionally, Wenemark (2017) emphasises that the missive letter is significant to motivate the respondents to participate. Thus, the best arguments shall be presented to ensure that interest arises among potential respondents. The author presents some guidelines that shall be considered when constructing a missive letter which are: write short and powerful, use the best arguments to convince participation, and decide upon what tone to use (ibid). Hence, these guidelines were taken into account when composing the missive letter for the thesis' questionnaire. The missive letter can be found in appendix.

3.5.5 Data compilation

According to Patel and Davidson (2011), there is no universal method on how to process data in a qualitative way. Furthermore, the authors state that the researcher itself need to develop an appropriate way to process data and present an understandable text. Therefore, it is highly important to include a systematic proceeding on how the qualitative processing has been executed (Patel and Davidson, 2011). Generally, the finished result from a qualitative processing is a coherent text with contextual quotes (ibid).

Consequently, when processing the data for the study the first initial step was to convert the gathered data from the web-based programme and then download it to Excel. Once

downloaded to Excel, the data was structured and sorted. Further, the data regarding the first research question was categorised into eight sections, where each section constituted of one statement concerning barriers to CBMs. In each of these sections, the data was also illustrated with figures. Additionally, in every section, a descriptive text with relevant quotes was provided regarding the barriers to CBMs and to the figures. Four out of eight barriers were presented in more depth and were provided further text and figures which described how different sized firms perceived these statements being barriers or not to CBMs. The chosen four, *lack of knowledge within the firm, regulation, lack of financial capital,* and *lack of cooperation between various actors,* were motivated by being the most prominent barriers. However, *high initial investment cost* and *lack of cooperation between various actors* were drawn tied. The choice of going into more depth regarding *lack of cooperation between various actors* was due to when examining the overall data, this barrier had a greater amount of interesting data compared to the barrier *high initial investment cost.*

Moreover, the data gathered for the second research question was reviewed in order to find recurring comments regarding what measures were considered most effective in the advancement of CBMs. This review resulted in three categories which included the most recurring comments. The three categories are *measures concerning regulation, measures concerning knowledge and education* and, *culture, norms and, change in society*. Within each category, an explanatory text and appropriate quotes were presented to be able to describe the data concerning the second research question.

3.5.6 Data analysis

The data analysis was conducted by utilising previous literature as a foundation and comparing it with this study's results. Hence, in the analysis, the results from this thesis were analysed and discussed in comparison with previous literature's findings. To provide a more in-depth analysis, the thesis further investigated the prominent barriers in terms of firm size whereas the less prominent barriers were not given further attention. The previous literature constituted of three chosen articles (Linder and Williander, 2015; Rizos et al., 2016; Oghazi and Mostaghel, 2018). These were chosen as the point of departure since all cover the same subject area as this thesis, barriers to CBMs. Furthermore, by selecting these three, all different firm sizes were covered.

Additionally, Oghazi and Mostaghel (2018) and Linder and Williander (2015) conducted their research on Swedish firms, which seemed appropriate since this study was conducted on Swedish professionals. As to Rizos et al. (2016), although not examining Swedish firms or professionals, this article was still found useful for the thesis, since it examined SMEs and provided another angle of approach compared to Linder and Williander (2015) and Oghazi and Mostaghel (2018).

3.6 Ethics, anonymity and confidentiality

When conducting business research, it is vital to bear in mind ethical and moral principles as they control and regulate how all research activities shall be conducted and presented. Hence, research ethics plays a significant role in establishing legitimacy and validating the knowledge gained from the research (Eriksson and Kovalainen, 2016). Furthermore, Wenemark (2017) states that the risk of damage or harm must be small in comparison to the benefits to justify the realisation of the study.

Ethical principles to consider when conducting business research are, for instance, informed consent, where the participant is given information about, for example, the purpose of the study and how the data will be utilised (Eriksson and Kovalainen, 2016). Another ethical principle the authors present is plagiarism, which concerns using the work of other researchers as your own and not acknowledging the other researcher. Eriksson and Kovalainen (2016) and Wenemark (2017) also stress the importance of ensuring confidentiality, anonymity, and privacy concerning the participants and how the data will be managed. Additionally, as mentioned earlier, a "no opinion" response was provided in the questionnaire to not force the respondents to take a stance or express an opinion they do not have (Bryman and Bell, 2017). To clarify, these are only a few ethical principles to take into account when conducting a study. Accordingly, throughout the research process, these ethical principles among others were respected to ensure no harm was brought to the participants and that the study was performed in an ethically correct way.

3.7 Discussion as to choice of method

Using a survey as choice of method entail both advantages and disadvantages. Questionnaires are quicker to administrate, meaning that you can reach more respondents in a short period of time compared to, for instance, an interview (Bryman and Bell, 2017). Additionally, there is no variation in formulating the questions. A questionnaire also better suits the respondents' needs since they can respond when they have time and possibility to do so (ibid). Moreover, Fink (2003) argues that a qualitative survey analysis is to be recommended for the examination of experiences which is the case in this thesis. However, due to the questions being pre-structured, one lacks the possibility to ask the respondents supplementary questions which could result in eventual loss of valuable information and interesting data. Other important aspects to bear in mind is that one cannot know for sure who answers the questionnaire and non-completion (Bryman and Bell, 2017). Since the aim of this thesis is to gain depth and uniqueness and not to generalise, the non-completion in this case can be viewed as less important (Fink, 2003).

Furthermore, when examining previous research and their methodology, the most common research methodology is a case study (Linder and Williander, 2015; Rizos et al., 2016 and Oghazi and Mostaghel, 2018). Govindan and Hasanagic (2018) also emphasise case studies as

a frequently used methodology within CE. The authors present that in 2016, 18% of the research studies within CE constituted of case studies and only 3% were surveys. Therefore, applying another methodology than case studies was deemed rewarding and would make a further useful contribution with new and interesting insights.

3.8 Trustworthiness of the study

To determine and evaluate the trustworthiness of a study as well as its quality, it is common to look at how well the research meets the requirements for what is meant by reliability and validity (Bryman and Bell, 2017). However, in qualitative research (such as this thesis) the two terms validity and reliability are so closely intertwined that researchers using a qualitative method hardly ever discuss reliability (Patel and Davidson, 2011). Thus, in order to discuss the trustworthiness of this study, the term validity is brought up in further detail in the next paragraph.

3.8.1 Validity

In a qualitative study, the term validity influences the entire research process with the aspiration to, e.g., discover phenomena and describe perceptions (Patel and Davidson, 2011). The term validity can be described as whether the researcher actually observes, identifies and measures what one says is being measured (Bryman and Bell, 2017). However, due to every qualitative research process being unique there are difficulties in finding criteria, rules, and procedures that should be applied (Patel and Davidson, 2011). Therefore, it is of utmost importance for the researchers to carefully document the research process so that the reader can learn and formulate an opinion of all choices made by the researchers in question (ibid). In order to strengthen the validity of this thesis, an exhaustive account of the complete set of choices made by the researchers have been presented.

4. Results

4.1 Description of respondents

In total, 46 respondents answered the questionnaire. Thereof, 26 were women and 17 men and the age of the respondents ranged from 28 to 73. The industries the respondents worked within varied greatly, where manufacturing industry, public sector, construction industry, real estate and business services were among the most common ones. Moreover, eleven respondents worked at micro firms (0-9), nine at small firms (10-49), ten at medium-sized firms (50-249) and lastly 13 respondents at large firms (250+). Hence, the spread among the respondents regarding firm size was fairly even. Only 4 of the respondents worked at a start-up, i.e. a firm younger than two years. The majority of the respondents was in a managerial or decision-making position such as CEO, sustainability manager, and project manager. Additional titles the respondents had were, for instance, environmental strategist, analyst and, sustainability consultant.

4.2 Barriers

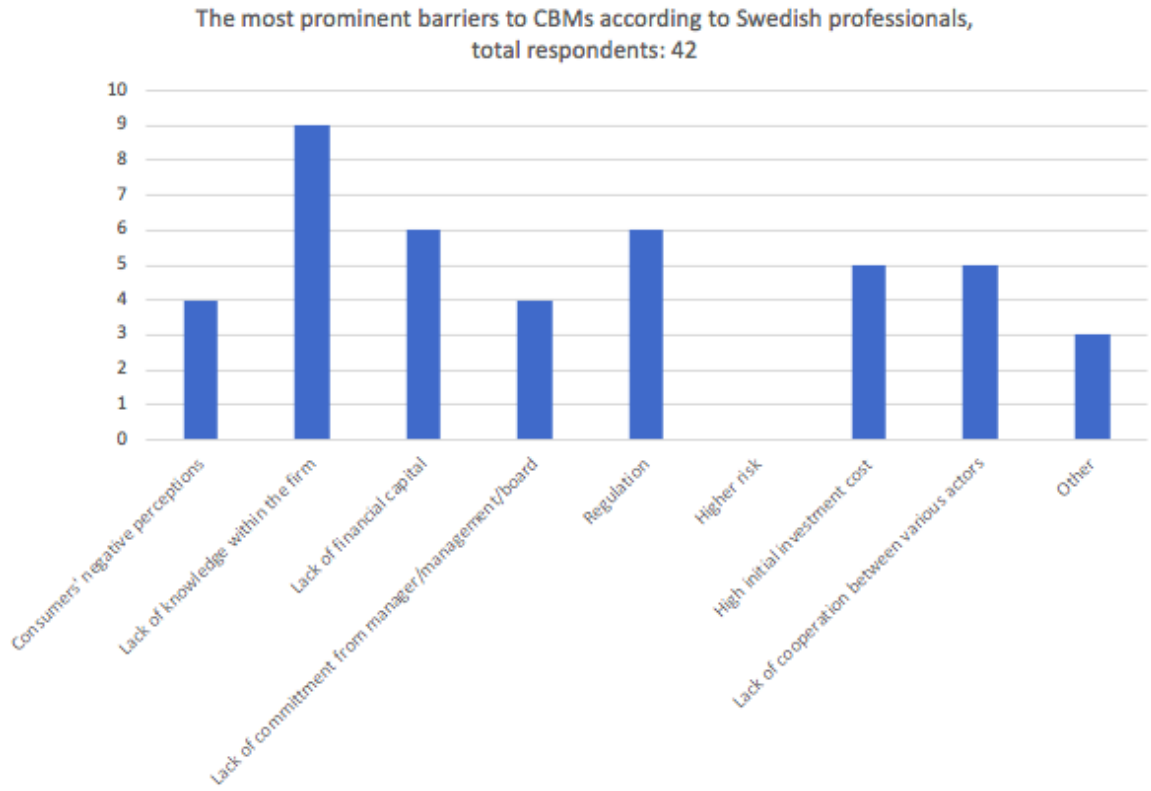


Figure 1. Most prominent barriers

As illustrated in the figure above, the most prominent barriers to CBMs (according to Swedish professionals) were *lack of knowledge within the firm*, *regulation*, *lack of financial capital*, and *lack of cooperation between various actors.* The barriers considered less prominent were consumers' negative perception, lack of commitment from manager/management/board and high initial investment cost. The least important barrier was higher risk which not a single respondent selected. The three additional barriers brought up by

the respondents read as follows: "*understanding of sustainability opportunities for both manufacturers and consumers", "lack of knowledge among consumers, firms, civil society, public sector - in short, lack of knowledge among all actors"* and *"the deep-seated behaviour of consumers (to get rid of a product and buy new ones). In the vast majority of cases, one chooses the simplest and easiest".*

Furthermore, as can be seen in figure 1, the respondents were quite divided in their opinion concerning what barrier was the most prominent. Additionally, whereas *lack of knowledge within the firm* distinctively is the highest, the barriers in second and third place are more evenly levelled, as are the barriers in fourth and fifth place. One could interpret this result as inconclusive and that the differences between the barriers are not particularly extensive.

In the following sections, the survey answers regarding the prominent barriers are presented. The prominent barriers are also further examined in terms of firm size in section 4.2.1 to 4.2.4

4.2.1 Lack of knowledge within the firm

(regarding CE/CBMs)

As can be seen in figure 2, an overwhelming majority fully or partly agreed with lack of knowledge being a barrier. From the last-mentioned group, a CEO and environmental consultant wrote: "*we think too much in the same ways that we always have".* As this barrier was the most prominent one, this result was expected and goes in line with figure 1. However, one third of the respondents thought otherwise, one of which stated: "*we are educated experts within the sustainability area"* and another "*there is both knowledge and will".*

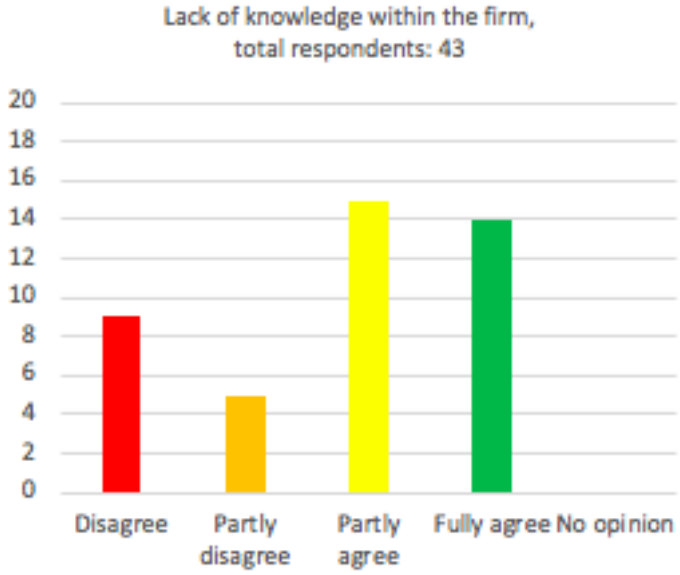


Figure 2. Lack of knowledge within the firm

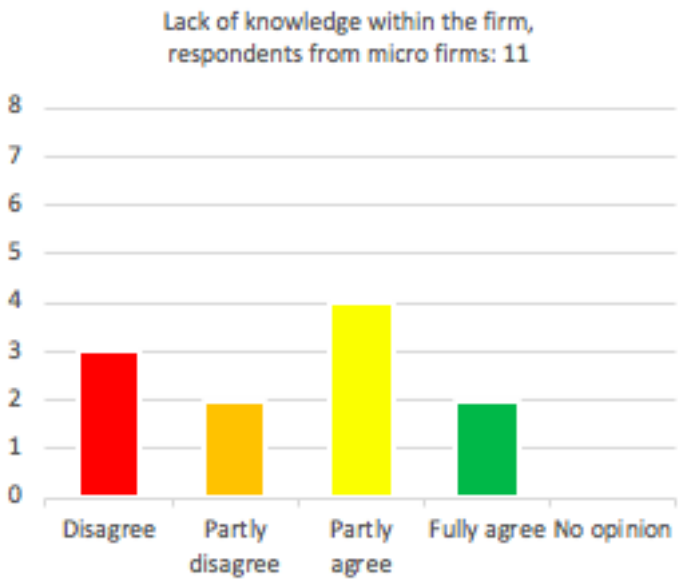


Figure 2.1 Micro firms

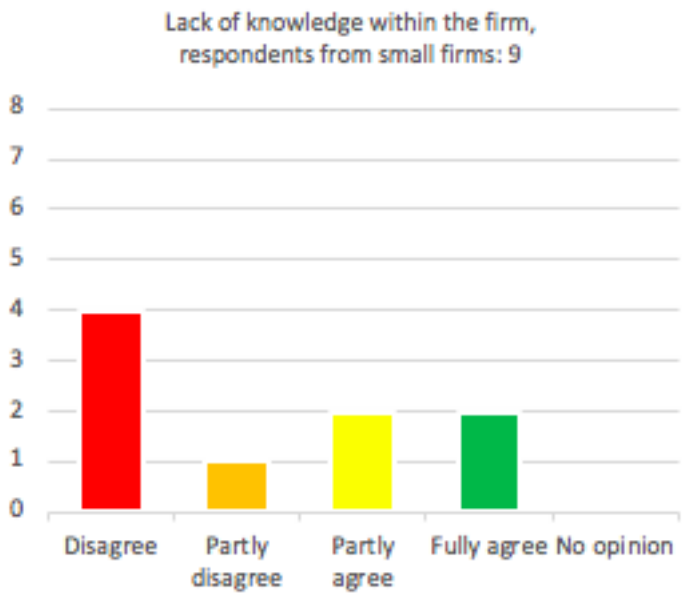


Figure 2.2 Small firms

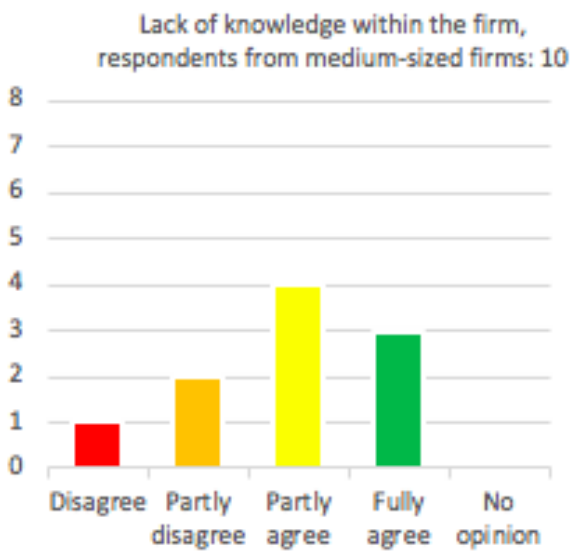


Figure 2.3 Medium-sized firms

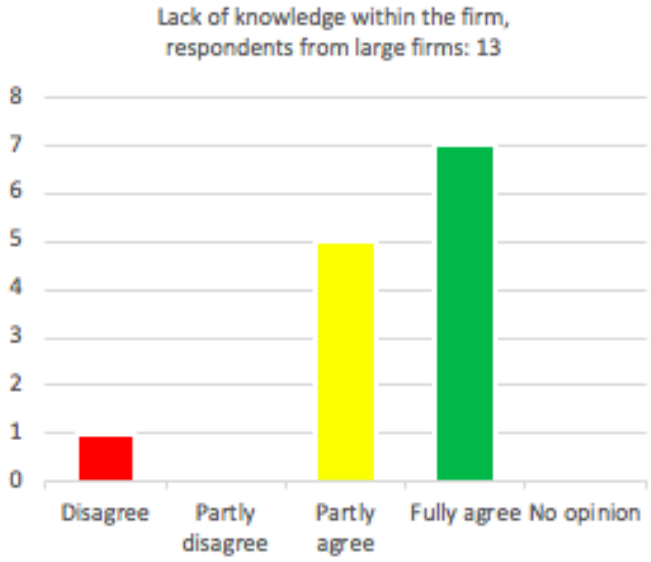


Figure 2.4 Large firms

As illustrated in the figures above, professionals from medium-sized and large firms were, to a greater extent, convinced that lack of knowledge is a prominent barrier. The answers from micro and small firms are more evenly scattered and therefore demonstrates no conclusive opinion. An interesting aspect, in this case, is also that everyone had an opinion, or some say in the matter. There was not a single respondent who had no experience of this particular barrier.

4.2.2 Regulation

(e.g., the existence of obstructive regulation or the lack of supporting regulation)

In similarity with lack of knowledge, two thirds viewed regulation as a prominent barrier. Some of these commented things like "*environmental legislation is a protection legislation, it does not take into account that resources are finite"* and *"environmental legislation is, in many cases, an obstacle to the recycling of construction and demolition materials or land from a land reclamation"* as well as "*VAT-exemption on recycled materials is needed, producer responsibility for textiles is needed to increase collection"*. Since almost none of the respondents disagreed, the result of regulation as a barrier demonstrates an almost unanimous opinion compared to lack of knowledge where more respondents disagreed.

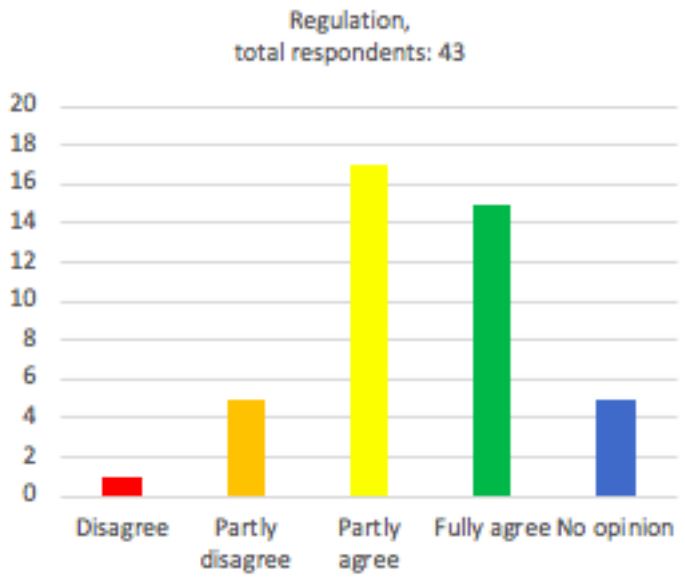


Figure 3. Regulation

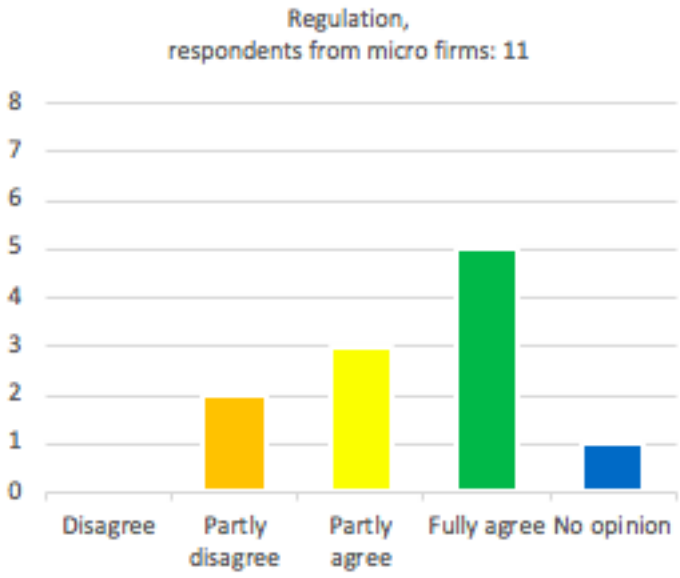


Figure 3.1 Micro firms

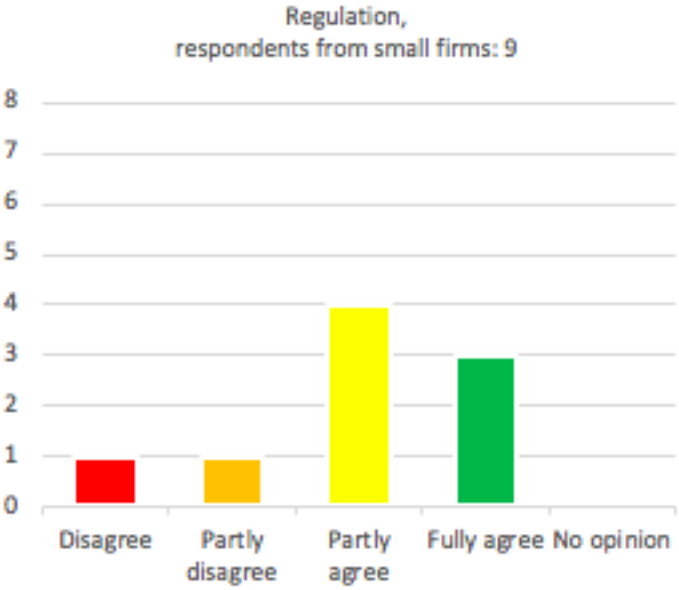


Figure 3.2 Small firms

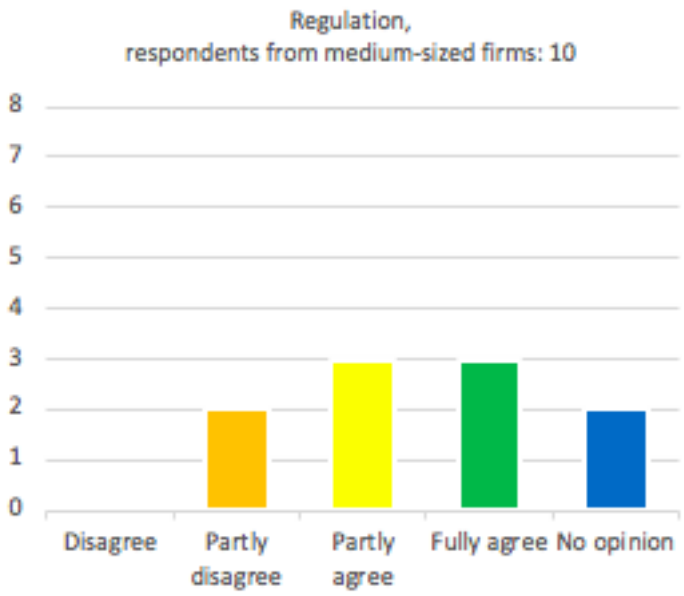


Figure 3.3 Medium-sized firms

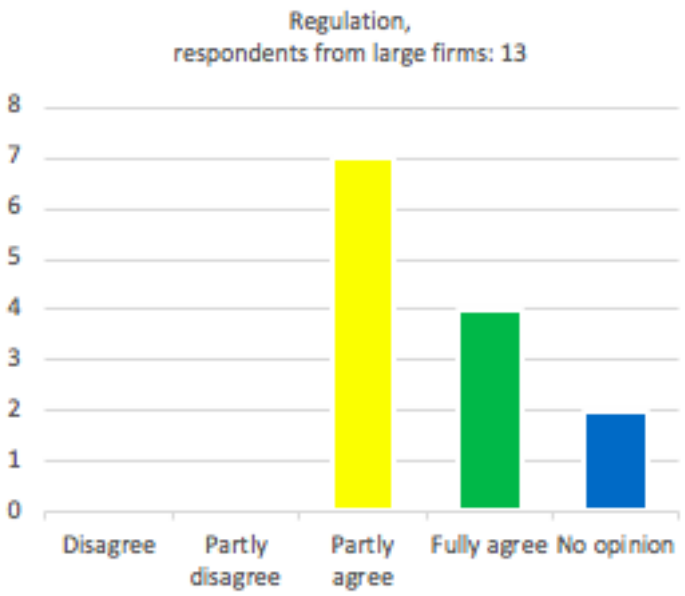


Figure 3.4 Large firms

In contrast to lack of knowledge within the firm, the results regarding regulation are more conclusive. As one can see in the figures above, professionals from all sizes of firms deem this as a prominent barrier although large firms seem to struggle the most. In addition, almost none of the respondents from any firm size considered regulation a barrier which further reinforces the conclusiveness of this result.

4.2.3 Lack of financial capital

(e.g., other investments and issues have higher priority within the firm)

As figure 4 illustrates, the respondents were not as sure whether lack of financial capital was a barrier as they were regarding the previous two barriers. Almost half of the respondents partly agreed with lack of financial capital being a barrier, one of which commented: "*poor access to investment funds in traditional investments channels".* Another wrote: *"There is not a lack of capital but circular solutions today being almost exclusively more expensive than linear ones".* From the respondents that fully agreed, there were remarks such as: *"external funding to advance circular initiatives are difficult to secure"* and

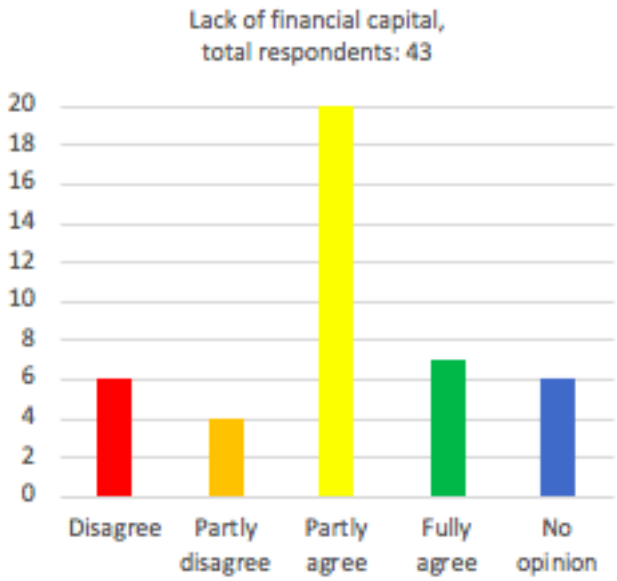


Figure 4. Lack of financial capital

"in our case (like often in small firms) liquidity is a major barrier. Increased circularity is possible for us but requires more working hours".

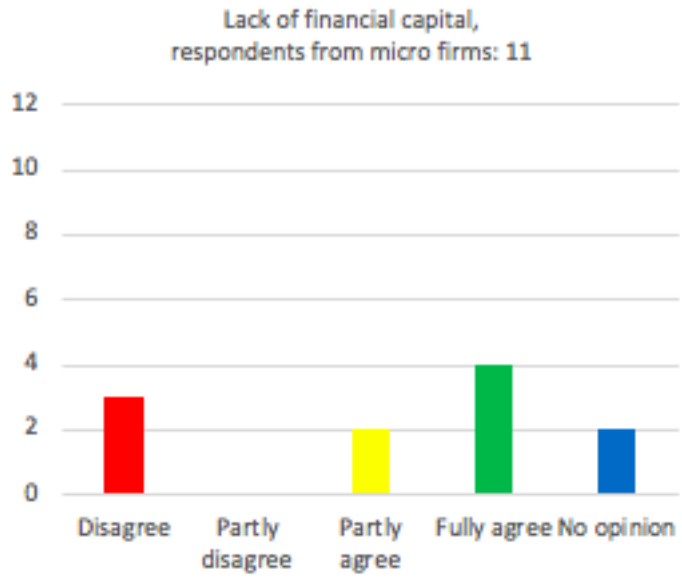
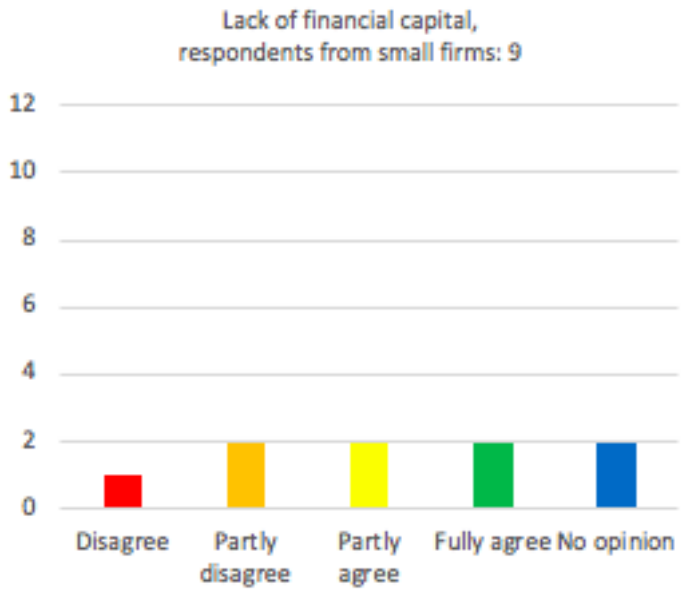


Figure 4.1 Micro firms



4.2 Small firms

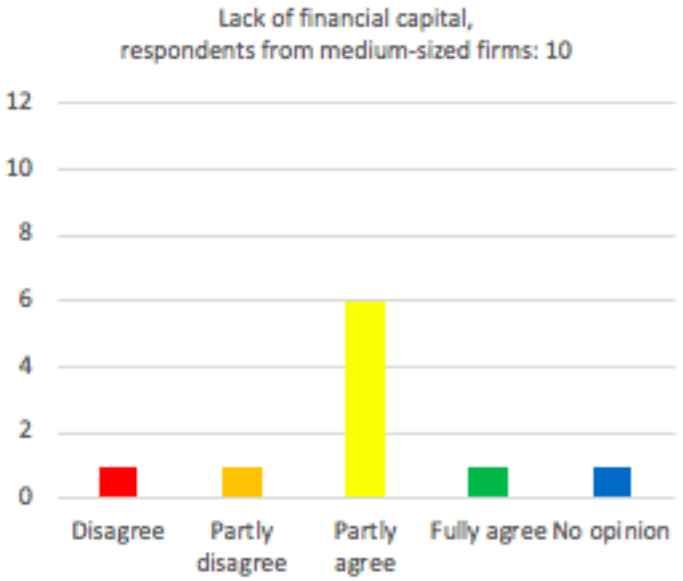


Figure 4.3 Medium-sized firms

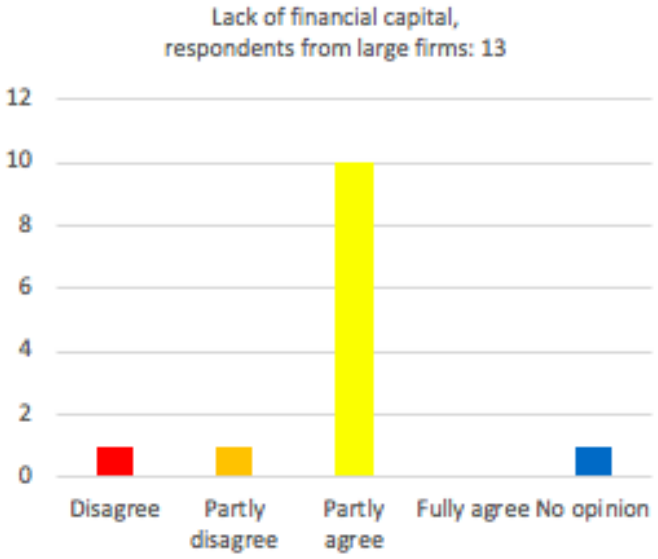


Figure 4.4 Large firms

As figures 4.1 to 4.4 illustrate, the respondents' opinions whether lack of financial capital was a barrier or not are somewhat scattered. However, looking at the data, what one can establish is that medium-sized and large firms agree to some extent that, e.g., other investments and issues have higher priority within the firm. Additionally, one can also conclude that mainly micro firms (and small to some extent) agree completely and thus, seem to struggle with financial capital. Finally, worth pointing out is the fact that medium-sized and large firms are more unanimous in their opinion compared to micro and small firms.

4.2.4 Lack of cooperation between various actors

Figure 5 demonstrates that more respondents have experienced lack of cooperation between various actors as a problematic barrier compared to lack of financial capital, where the opinions were quite scattered. In similarity with lack of knowledge within the firm and regulation, two thirds considered the absence of cooperation as challenging for CBMs. One of which commented: "*The economy rules. If it was more profitable for a firm to buy a function than a service, the service sales would increase. Rules related to depreciation, reservation, guarantees etc. need to be reviewed"* and another "*we need to build trust between consumers and producers".* However, there were respondents who did not agree with remarks such as "*we experience that more and more want to participate in the transformation work".*

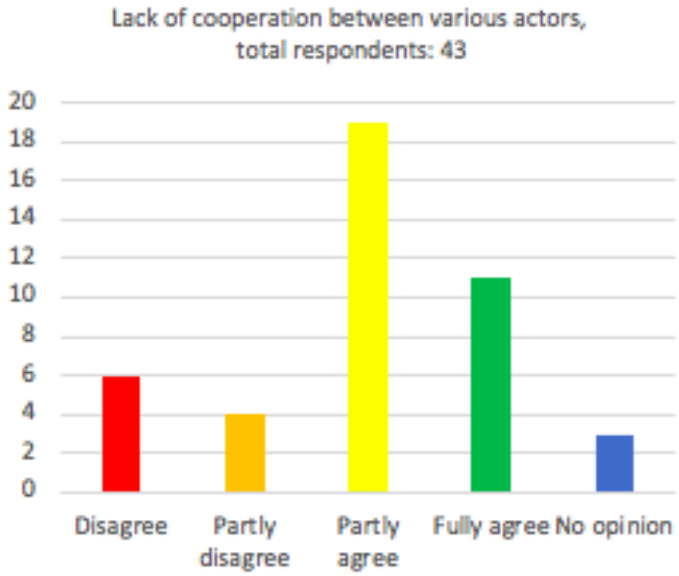


Figure 5. Lack of cooperation between various actors

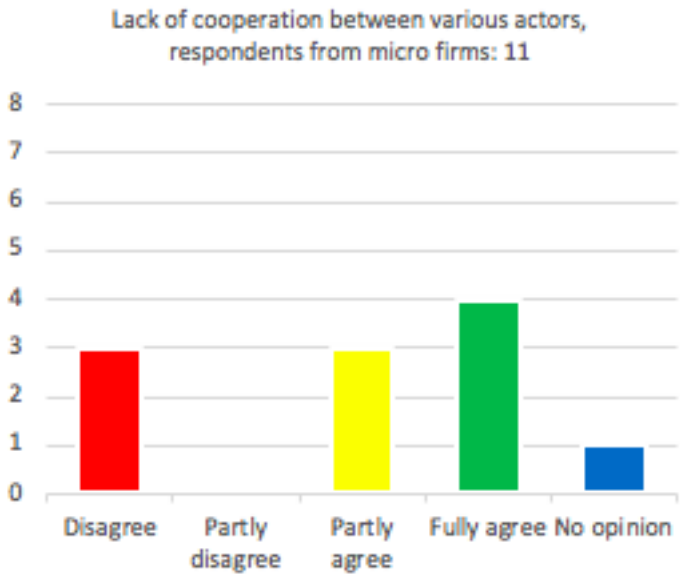


Figure 5.1 Micro firms

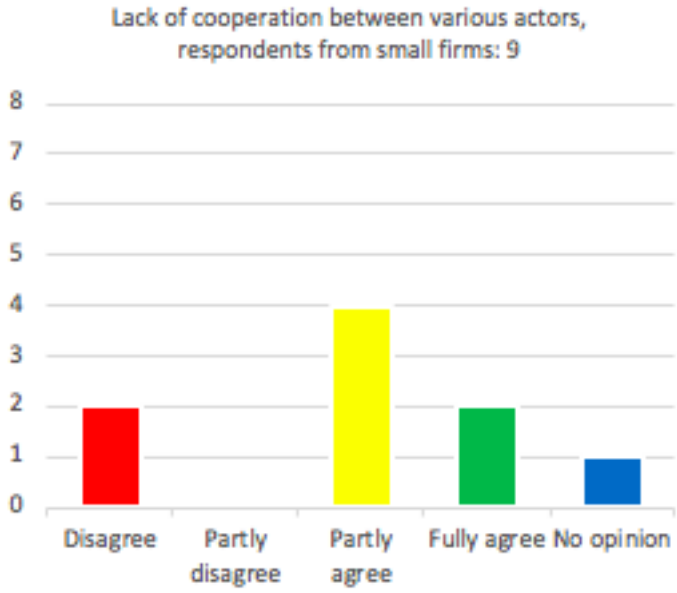


Figure 5.2 Small firms

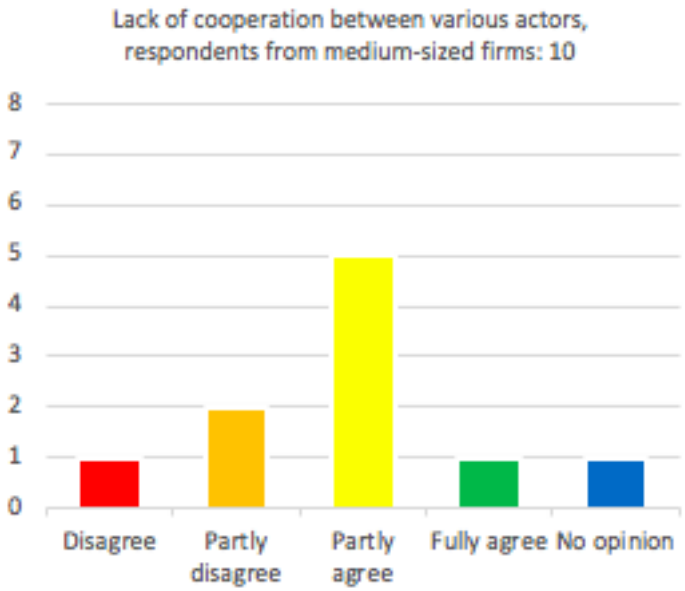


Figure 5.3 Medium-sized firms

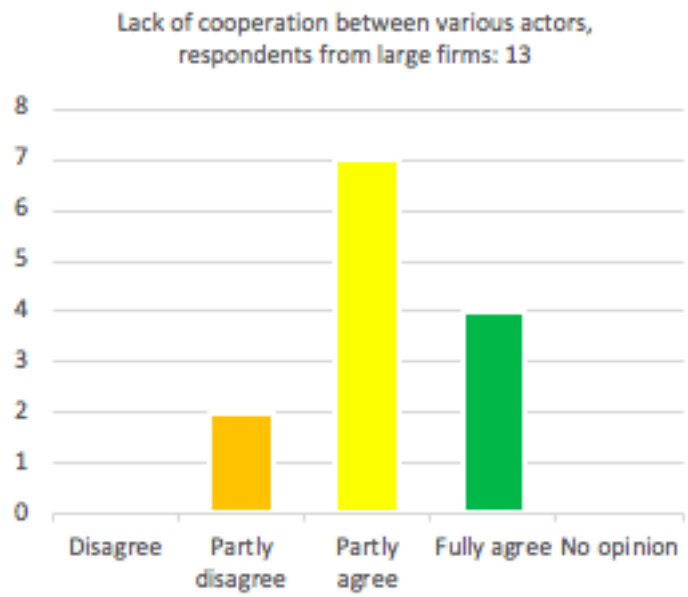


Figure 5.4 Large firms

In terms of firm size, respondents working at large firms seem to be more convinced that lack of cooperation between various actors is a barrier. Micro and small firms share a similar view where the majority partly or fully agree but a few disagree. Medium-sized firms, however, appears to be the most conflicted since the majority of the respondents partly agree or partly disagree.

In the following sections, the survey answers regarding the less prominent barriers are presented.

4.2.5 High initial investment cost

As figure 6 illustrates, the respondents' opinions were severely divided whether high initial investment cost was a barrier or not. Almost half of the respondents viewed the cost as problematic, one of which commented: "*Major differences between services and industries, uncertainty a larger obstructing factor"* and another "*high development costs to gain competitiveness from the beginning".* One respondent who was convinced that the cost, in fact, is problematic claimed: "*in our case, it is required investments in both equipment and more work (=higher labour costs)*

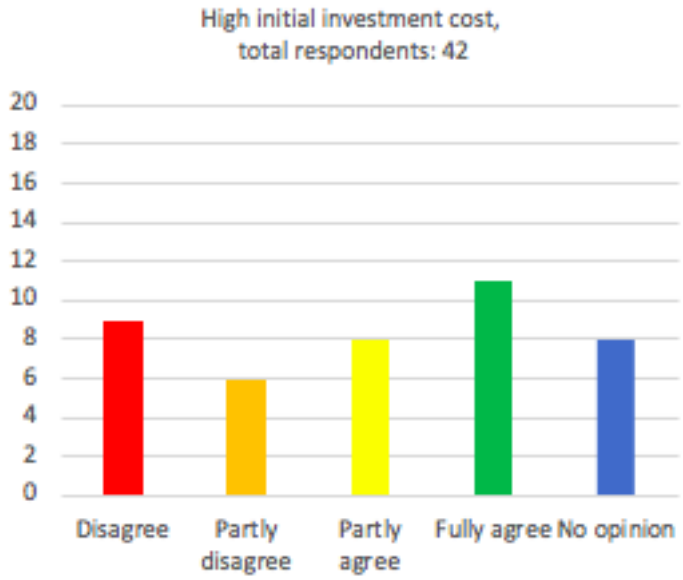


Figure 6. High initial investment cost

to begin with a more circular business model". However, nearly as many disagreed or partly disagreed, one of which wrote: "*CE must be profitable from day 1".* Thus, one can deem this result as inconclusive.

4.2.6 Consumers' negative perceptions

(e.g., towards recycled products, lack of willingness to pay for sustainable products)

As can be seen in figure 7, roughly two thirds partly disagreed or partly agreed with consumers' negative perceptions being a barrier. Alike high initial investment cost, this demonstrates an inconclusive result although a less obvious such. From the mentioned group of respondents, one wrote: "*sustainable products are easier to accept than recycled ones"* and another emphasised the same point with the following quote: "*If the products are not refined and the customer experiences the recycled products as inferior this may be a barrier, but it is easily changed".*

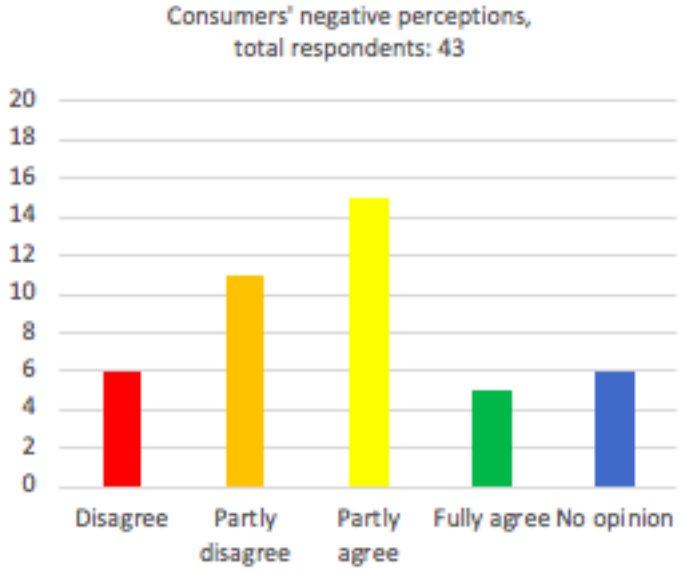


Figure 7. Consumers' negative perceptions

4.2.7 Lack of commitment from manager/management/board

Compared to high initial investment cost and consumers' negative perceptions, the respondents' opinions are not as scattered and divided. One third did not consider lack of commitment from manager/management/board a barrier with comments like: "*our entire business model is built on the global SDGs and circularity".* Also, nearly a third were more conflicted since they partly disagreed and partly agreed, one of which stated that: "*time is money"*. Another respondent gave an exhaustive explanation for his conclusion which reads as follows: *"truthfully, it is probably (in many cases) determined by whether there*

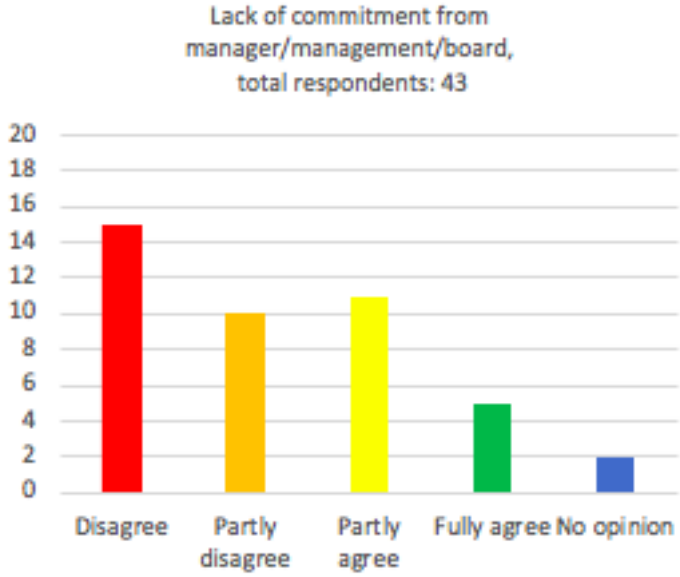


Figure 8. Lack of commitment from manager/management/board

is a business case and whether what's required to develop circular business models is small investments. Is it yes on both sides then management is probably on-board, not because of commitment but because it is in line with 'business as usual'. Otherwise it is more difficult. 'If there's a will, there's a way', but those who measure/get measured by how much money they can squeeze out of existing investments and ways of working will have a hard time becoming circular. If clear directions come from the owners, there is hope. If there is will + knowledge, the rest is ordinary management ". From the minority which agreed one of the respondents emphasised: "*this is the single most important in order for it (CBMs) to be implemented".*

4.2.8 Higher risk

(e.g., cannibalisation of sales or higher dependency for the firm towards other actors)

As can be seen in figure 9, one third disagreed with higher risk even being a barrier which hardly is surprising since higher risk was viewed as the least prominent barrier by the respondents (see figure 1). One respondent from this group commented: "*cooperation is the key to success".*

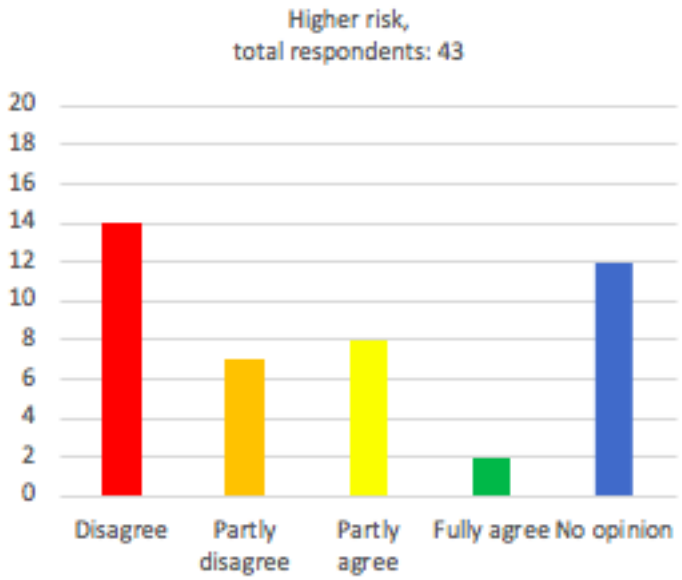


Figure 9. Higher risk

4.3 Most effective measures for the advancement of CBMs

Out of 43 respondents, 32 had suggestions on how to advance CBMs in the Swedish business community. 21 were women and 11 men. Nine of the respondents were from micro firms, seven from small firms, six from medium-sized firms and ten from large firms. The majority stressed the importance of regulation in different forms and the support from authorities as crucial factors for CBMs' successfulness. The second most prevalent suggestion was related to knowledge and education different groups/actors and a few professionals expressed concern regarding our way of living e.g. consumer behaviour.

4.3.1 Measures concerning regulation

As mentioned earlier, most of the respondents had suggestions concerning how regulation can forward the advancement of CBMs. The propositions ranged from introducing environmental taxes, legislative instruments and supportive regulation. In line with this, one respondent from

a large firm stated: *"Environmental taxes. If we do not start to pay for using natural resources, or initiate incentives to reuse, far too few will act according to the circular economy"*. Additionally, one head of sustainability also emphasised taxes and commented: *"Legislation and taxes that 'forces' the demand to rise".*

Moreover, several respondents stressed the importance of legal requirements and fines associated with them, if not obeyed. An environmental consultant wrote: *"Legal requirements, fines if not reformed to circular models"*. Another quote emphasised the same point by stating: *"Legally binding laws to close the resource loops, fines for waste generation, as well as substantial investment support (for instance, through regional support and the Energy Agency). Hence, real carrots and sticks".*

Furthermore, support from authorities and how public procurement can be altered to promote CBMs were also frequently mentioned suggestions from the respondents. Two quotes which embodied support from authorities were: *"Access to financial support to work with sustainability and CSR. Thus, not only focusing on innovation as driving factor"* and *"VAT-exemption on recycled and reused, producer responsibility on textiles to increase collection rates. Incentives and subsidies concerning investments to scale up the advancement of CBMs".* The first quote was made by a CEO of a micro firm and the second quote comes from a Vice president for sourcing and supply chain of a small firm.

Lastly, concerning public procurement, one respondent wrote: *"For instance, within public procurement - focus more on circularity. The public sector is an important actor with substantial financial muscles who have the potential to kick off both the knowledge and market"* and this proposition is further reinforced with a similar quote made by a CEO of a micro firm: "*A full conversion of public procurement to become sustainable and eco-certified".*

4.3.2 Measures concerning knowledge and education

Besides suggestions concerning regulation and public procurement, the second most prevalent suggestions (regarding most effective measures for the advancement of CBMs) were proposals related to cooperation between actors and their networks as well as knowledge and education. One of the respondents, a sustainability developer, specified the first as: "*develop platforms where firms can meet and exchange ideas and services".* As to the last mentioned, a department manager from the public sector stated: "*more knowledge and really be able to show 'what's in it for me'* and another respondent simply stated: "education*".* Another respondent, a management consultant, suggested: "*knowledge of senior decision makers about the necessity and the business potential, the risk of being dependant on a finite resource. Showcase the good examples and value of circular business models".* In line with this, a respondent from a large firm proposed: "*Targeted educational efforts towards the firm's*

managers and board of directors". A business development manager also emphasised education with his comment which reads as follows: "*an educational effort with a great deal of inspiration, concretisation and nudging. This supported by follow-ups at different managerial levels would make a big difference.".* In addition to this, a CEO of a micro firm stressed the need for incorporating sustainability into education by suggesting: "*A comprehensive view concerning sustainability to be a part of all educations."*

To conclude this paragraph, the following quote well summarises measures concerning knowledge and education: "*the approach that circular economy is the only way forward and that it is crucial for society to start working according to that model. All else should be criminal. Cooperation, education, and information. Build networks for resource location so that products and materials can circulate effectively".*

4.3.3 Measures concerning culture, norms and change in society

Further propositions, made by the respondents, on how to advance CBMs concerned questioning the way we live our lives today with a focus on social norms and culture. One respondent suggested: *"To question our lifestyle norms which are built upon comfort and consumption"*, whereas another respondent, a project manager of a medium-sized firm, proposed: *"A new societal model without growth as its objective".* Finally, a few respondents wished for more examples of successful initiatives to be illustrated, for instance, via social media with one stating: *"To demonstrate that it is possible – to be role models and try!"*.

5. Analysis

5.1 Barriers to CBMs

When comparing the gathered data with previous literature several interesting aspects were found. To begin with both Linder and Williander (2015) and Oghazi and Mostaghel (2018) express that the *higher risk* that comes with CBMs made up one of the most prominent barriers in their research. However, in this thesis, higher risk was not chosen by any of the professionals when asked to select the most prominent barrier to CBMs (See figure 1). This result is differentiated when taking previous literature into account such as Linder and Williander (2015) and Oghazi and Mostaghel (2018). One could argue that this difference is due to different levels of knowledge among the examined groups in this thesis and previous research. The examined group in this thesis was professionals with experience from CBMs, whereas in previous research, such as Linder and Williander (2015) and Oghazi and Mostaghel (2018), the examined groups were in the early stages of utilising CBMs and thus, had not been in contact with CBMs before. Therefore, one could claim that the Swedish professionals with experience from CBMs have a greater knowledge of barriers than professionals working in firms which are in the process of implementing these models. This higher knowledge level could then result in the Swedish professionals having a different perception regarding CBMs and thus, do not only see risks with CBMs but also opportunities.

Despite *lack of commitment from manager/management/board* not being one of the most prominent barriers in neither this thesis nor in previous literature, it is still an important barrier to bear in mind. This is due to, as expressed by both respondents in this thesis and by Oghazi and Mostaghel (2018), that the support from manager/management/board is an essential factor in order for CBMs to be implemented and, e.g., not hindered by management who favour other business models. Hence, depending on what opinion the manager, management or board have concerning CBMs, they can either stall or promote the advancement of CBMs.

In similarity, *consumers' negative perception* was also not considered as such a challenging barrier by the professionals, where one respondent stated this barrier's complications are easily changed. This reasoning is in accordance with Linder and Williander (2015) who conclude fashion vulnerability as a hinder to CBMs but also suggest propositions to alter it. Fashion vulnerability, one could argue, is comparable to consumers' negative perception since they both concern issues related to consumers' preferences and perceptions regarding fashion, aesthetic of the products and circular products such as recycled, reused or remanufactured. Thus, a possible reason for consumers' negative perception not being considered a prominent barrier may be because there are distinctive measures to proceed with to reduce it, which is expressed by both Swedish professionals in this thesis as well as Linder and Williander (2015).

Lastly, Rizos et al. (2016) and Oghazi and Mostaghel (2018) both identify *high initial investment cost* as a barrier in their literature review and thus its importance. Furthermore, Rizos et al. (2016) even conclude in their results that high initial investment cost, as part of the barrier 'lack of capital', is one of the most prominent barriers. Consequently, Rizos et al. (2016) do not explicitly state that high initial investment cost is a barrier but rather part of the barrier 'lack of capital'. However, the result from this thesis is more scattered compared to previous literature (see figure 6). One possible explanation for this could be Rizos et al. (2016) only examined small and medium-sized firms and in this study, micro and large firms are also included. Since larger firms normally have a higher liquidity and therefore, tend to struggle less with high initial investment costs, one could argue for the logic of this reasoning.

5.2 Lack of knowledge within the firm

Even though the Swedish professionals possess knowledge in the subject area of CE and CBMs, *lack of knowledge within the firm* was still considered the most prominent barrier of all, a slightly unexpected and interesting result since neither Linder and Williander (2015), Rizos et al. (2016) nor Oghazi and Mostaghel (2018) received the same result. However, worth mentioning is that Rizos et al. (2016) acknowledge the related barrier 'lack of information' as problematic in their literature review but do not conclude it as a prominent barrier to SMEs. This is due to, as explained by the authors, that most firms in their study had implemented CBMs and thus already had knowledge of the subject area. Consequently, an intriguing conclusion since this thesis' result illustrates the opposite. Despite the professionals' knowledge and experience from working with CBMs, they still came to the conclusion that lack of knowledge within the firm is the most prominent barrier of all. Taken this into account, the barrier lack of knowledge within the firm should be given more attention and be investigated in further research. One of the professionals did not even seem to think the barrier was inclusive enough and chose therefore not to select lack of knowledge within the firm as the most prominent but 'other' instead since she thought the barrier should concern all actors. This was done, most likely, in order to clarify and emphasise that further knowledge is needed in all areas, not solely within the firm but also, e.g,. among consumers and civil society, as stated by a professional.

Taking the firm sizes into consideration (see figure 2.1-2.4), the results show that medium-sized and large firms were most convinced that lack of knowledge within the firm is a barrier. This can be related to Oghazi and Mostaghel (2018) who also examine mostly large firms. Although the authors do not explicitly mention lack of knowledge within the firm as a barrier, they identify cultural and organisational barriers, where the first addresses fear of the unknown and the last that change is challenging for both individuals and the firm. So forth, one could argue that the barrier lack of knowledge within the firm is interlinked with the cultural and organisational barrier mentioned by Oghazi and Mostaghel (2018), since lack of knowledge within the firm in most cases contributes to heightened fear of change, making

changes even more problematic for both firms and individuals. Thus, one could further argue that since larger firms incorporate more employees, i.e., individuals that have to change, they also tend to struggle more and face more resistance when aiming to change compared to smaller firms (see figure 2.1-2.4). The above-mentioned reasoning could be a potential explanation to why large firms to a greater extent found lack of knowledge within the firm as a prominent barrier compared to smaller firms.

5.3 Regulation

When examining the gathered data concerning *regulation*, one can see that the majority of the professionals found regulation a barrier to CBMs (see figure 3). Challenges to CBMs that arise due to regulation have been frequently mentioned in previous literature. According to Oghazi and Mostaghel (2018), regulation is a substantial challenge to CBMs and is further identified in the literature reviews of both Linder and Williander (2015) and Rizos et al. (2016). Furthermore, this thesis' result confirms regulation as a prominent barrier which is in accordance with Rizos et al.s' (2016) result since they too emphasised regulation in the form of 'lack of governmental support' as an obstacle hindering the implementation of CBMs. Taking previous literature into account and this thesis' result, regulation as a barrier to CBMs is only further reinforced.

Moreover, regardless of firm size, the majority of professionals considered regulation a barrier to CBMs (see figure 3.1-3.4). Hence, all firm sizes find regulation problematic when aiming to adopt CBMs. This is strengthened further by previous literature covering all firm sizes as well as identifying regulation as a challenging barrier (Linder and Williander, 2015; Rizos et al., 2016; Oghazi and Mostaghel, 2018). Considering that regulation today is developed for LBMs and not for CBMs, it is not surprising that firms, when adopting CBMs, come up against obstacles due to regulation. Thus, regulation as a prominent barrier to CBMs is an anticipated result and will continue to be so until regulation is altered to fit CBMs rather than LBMs.

5.4 Lack of financial capital

Linder and Williander (2015) and Oghazi and Mostaghel (2018) do not conclude *lack of financial capital* as one of the most prominent barriers in their studies although the first mentioned authors have identified the barrier in their literature review. However, Rizos et al. (2016) did find 'lack of financial capital' as a key barrier for small and medium-sized firms. This thesis' result, in similarity with Rizos et al. (2016), shows that micro and small firms, to a greater extent, fully agree with lack of financial capital being a barrier (see figure 4.1 and 4.2). According to Rizos et al. (2016), this is due to smaller firms having lower turnovers which result in banks' reluctance in providing funds for investing in CBMs. Consequently, one could argue this to be the case for micro and small firms in Sweden as well since part of the professionals stated that external funding is difficult to secure for the advancement of

CBMs. Moreover, liquidity issues in small firms are also mentioned as a barrier by the professionals, which in turn illustrate lack of financial capital.

5.5 Lack of cooperation between various actors

Since *lack of cooperation between various actors* has been identified by Linder and Williander (2015), Rizos et al. (2016) and Oghazi and Mostaghel (2018), in their literature reviews, though under varying terms, one could when commencing suspect the importance of this barrier. Even though Linder and Williander (2015) have named their barrier as 'partner restrictions', Rizos et al. (2016) their as 'lack of support from the demand and supply network' and Oghazi and Mostaghel (2018) their as 'relationships with partners', the relation and connection between all mentioned barriers and lack of cooperation between various actors are convincing since they all deal with issues in the same context. The issues concern, e.g., according to Linder and Williander (2015) and Rizos et al. (2016), 'the necessity of collaborative networks throughout the value chain' which one could argue is made up by pieces like 'trust among partners', 'mutual benefits for all partners' and 'increase of dependency to partners' as explained by Oghazi and Mostaghel (2018).

Furthermore, due to lack of cooperation between various actors being confirmed as one of the most prominent barriers in the results of both Rizos et al. (2016) and Oghazi and Mostaghel (2018), it was no surprise when this thesis' result emphasised the same. Moreover, looking at the gathered data (see figure 5.1-5.4) one can see that mainly large followed by micro firms agreed with lack of cooperation between various actors being a barrier. Based upon this thesis' result, and with Rizos et al. (2016) research on small and medium-sized firms in mind, one can conclude that lack of cooperation between various actors is a prominent barrier for all firm sizes.

5.6 Most effective measures for the advancement of CBMs

As to the most effective measures for the advancement of CBMs, the result illustrates an overwhelming consensus regarding what actions need to be taken. *Regulation*, i.e., the existence of obstructive regulation or the lack of supporting regulation, though not considered as the most prominent barrier, was what most professionals considered *ought to be prioritised in terms of measures regarding the advancement of CBMs.* An interesting and slightly contradictory result which could be due to regulation being a further tangible object to change compared to knowledge within the firm which is more intangible and as such, harder to grab. Thus, making it more difficult to come up with specific measures concerning how to actually educate employees within the firm. Looking at the comments regarding measures concerning *regulation*, *knowledge*, and *education*, one could argue for above-mentioned pattern to be consistent. Comments for measures concerning *regulation* tended to be more solid, specific and explain in a more precise manner *what* and *how* to change regulation, such as *to reform public procurement to become more promotional towards CE and CBMs* or *introduce*

environmental taxes. Whereas on the other hand comments for measures concerning *knowledge* and *education*, to a greater extent, simply said *more knowledge is needed* or *educational efforts to promote CE and CBMs.*

However, comparing to previous literature, solely Rizos et al. (2016) point out and stress the importance of heightened attention by European and national policymakers as an effective measure for the transition of CBMs. Even though Linder and Williander (2015) and Oghazi and Mostaghel (2018) do not propose any measures regarding regulation in their results, they do however acknowledge the barrier in their literature reviews and thus its importance. Rizos et al.s' (2016) suggestion concerning heightened attention by policymakers to facilitate the transition of CBMs one could argue falls in line with measures provided by Swedish professionals concerning regulation. This argument is based upon that a heightened attention by policymakers is interlinked with the propositions provided in this thesis since these propositions, such as *to reform the public procurement* or *introduce environmental taxes,* are actions policymakers can take to facilitate the transition to CBMs. Therefore, one can claim that the professionals suggest more specific measures on how to promote the advancement of CBMs than what is provided by Rizos et al. (2016).

Moving on to measures concerning *knowledge and education*, Rizos et al. (2016) acknowledge the related barrier 'lack of information' as problematic in their literature review whereas neither Linder and Williander (2015) nor Oghazi and Mostaghel (2018) mention related barriers or measures in their research. Hence, no measures were suggested by Linder and Williander (2015) or Oghazi and Mostaghel (2018) concerning knowledge and education. In contrast to previous literature, this thesis' results provide measures concerning *knowledge and education* suggested by the professionals, such as *more knowledge is needed* or *educational efforts to promote CE and CBMs.* Since the professionals stated lack of knowledge within the firm as the most prominent barrier to CBMs it was anticipated that also measures concerning this barrier would be frequently mentioned. Looking at the results, measures concerning knowledge and education tended not to be as solid, specific and did not explain in such a precise manner *what* and *how* to improve the current level of knowledge within firms and thus, the advancement of CBMs, compared to measures concerning *regulation*. Softer aspects, such as the intangibility of *knowledge and education*, are often more problematic and complex for firms to address since one could argue that they are either an intangible asset or part of social phenomena (Carchedi, 2008; Green, 2008).
Moreover, one could argue that Linder and Williander (2015), Rizos et al. (2016) and Oghazi and Mostaghel (2018), all propose measures for the advancement of CBMs which are comparable to the professionals' propositions concerning *culture, norms, and change in society* in this thesis. One could claim that the section of propositions concerning *questioning culture and norms* are significant measures to address and aim to change since they impact

the society greatly. However, to change culture and norms deeply rooted within us and society are generally hard to do.

Nevertheless, there are measures suggested by the professionals on how to address these issues, such as *question our lifestyle norms*, which one could argue is also mentioned in previous literature but expressed in other words. These suggestions concern to reconsider customer commitment, to involve and educate customers in order to "green" their preferences and broadening the term fashion vulnerability to be more inclusive (Linder and Williander, 2015; Rizos et al., 2016; Oghazi and Mostaghel, 2018) All above-mentioned propositions concern how to interact with customers and change their perception to make them more positive towards "green" products such as recycled, reused or remanufactured ones. Therefore, one can claim that propositions mentioned in previous literature are part of measures suggested by the professionals since they also address necessary changes for when *questioning culture and norms* and when *aiming to change society.* Furthermore, one could argue that aiming to change consumers' perceptions and consumption pattern is the first step in *changing the culture and norms of society* in terms of CE and CBMs.

6. Discussion and conclusion

6.1 Barriers to CBMs

CE has a high potential in achieving sustainable growth, which is embodied further in the EU's and Sweden's future plans for CE to, e.g., retain the value of products and resources, minimise waste, increasing recycling and reusing as well as phase out fossil fuels. To combat resource scarcity and other wicked problems, it is in society's, firms' and individuals' best interest that, e.g., CBMs are used as tools when striving towards CE. Even though several incentives for firms to adopt CBMs remain, such as CE being a source of innovation, new potentially profitable business areas, and improved margins, they still fail to be widespread in the business community which is due to various barriers. The main finding in this thesis reinforces the fact that barriers are preventing Swedish firms from adopting CBMs. These barriers are both internal and external and fall within different areas of a firm, such as management and finance. Due to the variation and extensiveness of the barriers, Swedish firms still struggle in adopting CBMs.

At the outset, the anticipated result of this study was that *regulation* would be the most prominent barrier. This was due to previous literature emphasising it as a challenging barrier to CBMs (Linder and Williander, 2015; Rizos et al., 2016; Oghazi and Mostaghel, 2018). However, since the most prominent barrier according to Swedish professionals was *lack of knowledge within the firm,* the result differed from the anticipation and is also one of the thesis' main findings. Even though the Swedish professionals had experience from CBMs, lack of knowledge within the firm was still considered the most challenging barrier, which is believed to be due to CE and CBMs being in their initial stages of implementation. Nevertheless, as mentioned earlier, both the EU and the Swedish government have initiated actions to move towards a circular economy. When these actions become more embedded in society, one can hope the knowledge level regarding CE and CBMs will rise and, thus, also contribute to reducing this barrier.

Moreover, another key finding from this study is that *regulation* was considered a prominent barrier through the eyes of Swedish professionals. Since regulation determines how firms may operate, it consequently has a great impact on them and is, therefore, most likely considered a prominent barrier. Indeed, firms have to follow the existing regulations and since these are not designed to advance CBMs but rather LBMs, this hinders firms in their adoption of CBMs. In similarity, Linder and Williander (2015) also found, in their comparison, that LBMs are favourable compared to CBMs in terms of business risk. Consequently, society needs to change and transform towards a more circular economy where CBMs can advance and truly challenge LBMs for the position as the traditional business model.

Additional key findings include *lack of financial capital* and *lack of cooperation between various actors* as prominent barriers. *Lack of financial capital* may be due to the current way

of pursuing business where LBMs are assumed to be more profitable than CBMs, resulting in CBMs having trouble gaining the financial capital needed to progress. This finding further reinforces Rizos et al.s' (2016) conclusion where SMEs found 'lack of capital' as a challenging barrier. Whereas *lack of cooperation between various actors,* on the other hand, could be a result of strong competition between firms, where survival instinct and a tough mentality are dominant. Because of this competition, there is an absence of cooperation, sharing ideas and knowledge among different actors. Consequently, firms struggle to adopt CBMs, since closer cooperation between more actors, than in LBMs, is essential for CBMs to thrive. This key finding is in accordance with previous literature which combined strengthens *lack of cooperation between various actors* as a prominent barrier for firms of all sizes (Linder and Williander, 2015; Rizos et al. 2016; Oghazi and Mostaghel, 2018).

6.2 Most effective measures for the advancement of CBMs

The most effective measures to advance CBMs suggested by Swedish professionals vary greatly, ranging from external measures as *regulation* to internal measures as *enhanced knowledge and education*. In addition, measures concerning *culture, norms, and change in society* fall within both external and internal areas. Compared to previous literature, this study contributes with numerous measures on how to advance CBMs in order to reach CE (Linder and Williander, 2015; Rizos et al., 2016; Oghazi and Mostaghel, 2018). This knowledge could increase firms' and decision-makers' understanding of *what* measures need to be prioritised, in *which order* these should be executed and also *how* the measures should be realised.

Since lack of knowledge within the firm was considered the most prominent barrier, the anticipated main finding of the most effective measures to promote CE and CBMs was that most suggestions would be concerning *knowledge and education*, i.e., measures related to the barrier lack of knowledge within the firm. However, measures concerning *regulation* held the overwhelming majority of the suggestions made, leaving an interesting and somewhat surprising finding. Furthermore, a recurring suggestion regarding regulation was *to reform public procurement to become more promotional towards CE and CBMs,* which can be interpreted as due to the Swedish government's ability to steer the business community towards CE and CBMs. Since the Swedish government has strong financial muscles and a great influence on firms, this is deemed an appropriate measure in order to promote the advancement of CBMs. Furthermore, would the Swedish government reform public procurement, i.e., act as a role model, it is possible that the business community would follow their lead and further advance the adoption of CBMs. The suggested measure, *to reform public procurement,* one can argue, is in accordance with the suggestion proposed by Rizos et al. (2016) to facilitate the transition to CBMs.

Moreover, measures concerning *knowledge and education,* dealt mostly with *more knowledge regarding CE and CBMs* or *educational efforts to promote CE and CBMs.* Due to CE and

CBMs being in their initial stages of implementation, as mentioned earlier, the knowledge concerning these concepts is less profound. Generally, when the knowledge level is low, there tends to be more reluctance towards new ideas and change. Therefore, since measures concerning *knowledge and education* have the potential to enhance the knowledge level, they will most likely also result in less reluctance towards new ideas and change, thus the advancement of CBMs. To conclude, another key finding is that, in order for CBMs and CE to become more embedded in society, the general level of knowledge needs to improve, which most effectively can be accomplished through measures such as educational efforts.

As to measures concerning *culture, norms and change in society*, this thesis' finding confirms, in accordance with previous literature, that measures concerning changing consumers' perception is recurring and relevant for the advancement of CBMs (Linder and Williander, 2015; Rizos et al., 2016; Oghazi and Mostaghel, 2018). The Swedish professionals proposed that we ought *to question our lifestyle norms* which are in line with aiming to change the culture and society. Furthermore, if the aim is to move towards a more circular economy and promote the advancement of CBMs, the first essential action is to reconsider our way of life and realising that the LBMs approach of "take, make and, dispose" is harmful to society, firms and, individuals. By advancing CBMs and adopting them as the firm's business model, firms will be better suited to address wicked problems such as resource scarcity.

6.3 Limitations of the study

This thesis is limited in a few aspects which the reader should bear in mind. Firstly, a qualitative study has been conducted which reduces the possibility of generalising the results found in this study. Finally, since the opinions of professionals in the Swedish business community have been examined, the results in other countries are likely to differ from this thesis'.

6.4 Further research

Since this study was conducted through a qualitative survey, it is recommended that this study be supplemented with other studies which applies a stronger qualitative approach. Likewise, the subject area would benefit from studies with an inductive and abductive approach since it would most likely contribute with new insights. Finally, since *lack of knowledge within the firm* was found as a key barrier and previous literature neither has identified it as prominent nor given it enough attention, this thesis has created an awareness that more in-depth research is required for this particular barrier. Furthermore, the first step to reducing these challenging barriers has been carried out by this study since numerous measures concerning the advancement of CBMs have been identified. Through further research and more detailed examination of these particular measures, it is highly likely that this knowledge will contribute to the reduction of mentioned barriers.

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8. Appendix

8.1 Questionnaire

Kön

- ◯ Kvinna
- ◯ Man
- ◯ Annat

Ålder

Industri / tjänstesektor jag tillhör (välj endast ett alternativ)

- ◯ Tillverkningsindustrin
- ◯ Byggindustrin
- ◯ Parti- och detaljhandeln
- ◯ Hotell och restaurang
- ◯ Transport och kommunikation
- ◯ Kreditinstitut och försäkringsbolag
- ◯ Fastigheter och företagstjänster
- ◯ Utbildning, hälso- sjukvård, omsorg, personlig tjänst
- ◯ Offentlig sektor
- ◯ Annat, specificera här:

Antalet anställda på företaget du arbetar på

- ◯ 0-9
- ◯ 10-49
- ◯ 50-249
- ◯ 250+

Är företaget du arbetar på yngre än två år?

- ◯ Ja
- ◯ Nej

Yrkestitel

Arbetar du i dagsläget (eller har tidigare arbetat) med cirkulära affärsmodeller eller cirkulär ekonomi i någon utsträckning?

- ◯ Ja
- ◯ Nej

Om svaret är nej, har du några planer på att arbeta med cirkulära affärsmodeller i framtiden? (svara endast om du svarat nej på fråga 7)

- ◯ Ja
- ◯ Nej
- ◯ Vet ej

Kommentarer:

I denna del av enkäten presenteras olika barriärer för cirkulära affärsmodeller. Vi ber dig ange i vilken utsträckning du instämmer med att respektive alternativ är en barriär (kryssa endast i ett alternativ)

Negativ inställning hos konsumenter (ex gentemot återvunna produkter, bristande betalningsvilja för hållbara produkter)

- ◯ 4 (=instämmer helt och hållet)
- ◯ 3 (=instämmer delvis)
- ◯ 2 (=instämmer delvis inte)
- ◯ 1 (=instämmer inte alls)
- ◯ 0 (=ingen uppfattning)

Kommentarer:

Brist på kunskap inom företaget (angående cirkulär ekonomi/cirkulära affärsmodeller)

- ◯ 4 (=instämmer helt och hållet)
- ◯ 3 (=instämmer delvis)
- ◯ 2 (=instämmer delvis inte)
- ◯ 1 (=instämmer inte alls)
- ◯ 0 (= ingen uppfattning)

Kommentarer:

Brist på finansiellt kapital (ex andra investeringar och angelägenheter har högre prioritet i företaget)

- ◯ 4 (=instämmer helt och hållet)
- ◯ 3 (=instämmer delvis)
- ◯ 2 (=instämmer delvis inte)
- ◯ 1 (=instämmer inte alls)
- ◯ 0 (=ingen uppfattning)

Kommentarer:

Brist på engagemang från chef/ledning/styrelse

- ◯ 4 (=instämmer helt och hållet)
- ◯ 3 (=instämmer delvis)
- ◯ 2 (=instämmer delvis inte)
- ◯ 1 (=instämmer inte alls)
- ◯ 0 (=ingen uppfattning)

Kommentarer:

Lagstiftning (ex förekomsten av hämmande lagstiftning eller avsaknad av stöttande lagstiftning)

- ◯ 4 (=instämmer helt och hållet)
- ◯ 3 (=instämmer delvis)
- ◯ 2 (=instämmer delvis inte)
- ◯ 1 (=instämmer inte alls)
- ◯ 0 (=ingen uppfattning)

Kommentarer:

Ökad risk (ex kannibalisering av försäljning eller ökat beroendeförhållande för företaget gentemot andra aktörer)

- ◯ 4 (=instämmer helt och hållet)
- ◯ 3 (=instämmer delvis)
- ◯ 2 (=instämmer delvis inte)
- ◯ 1 (=instämmer inte alls)
- ◯ 0 (=ingen uppfattning)

Kommentarer:

Hög initial investeringskostnad

- ◯ 4 (=instämmer helt och hållet)
- ◯ 3 (=instämmer delvis)
- ◯ 2 (= instämmer delvis inte)
- ◯ 1 (=instämmer inte alls)
- ◯ 0 (=ingen uppfattning)

Kommentarer:

Bristande samarbete mellan diverse aktörer

- ◯ 4 (=instämmer helt och hållet)
- ◯ 3 (=instämmer delvis)
- ◯ 2 (=instämmer delvis inte)
- ◯ 1 (=instämmer inte alls)
- ◯ 0 (=ingen uppfattning)

Kommentarer:

Vilken barriär anser du vara störst? (välj endast en)

- ◯ Negativ inställning hos konsumenter
- ◯ Brist på kunskap inom företaget
- ◯ Brist på finansiellt kapital
- ◯ Lagstiftning
- ◯ Brist på engagemang från chef/ledning/styrelse
- ◯ Ökad risk
- ◯ Hög initial investeringskostnad
- ◯ Bristande samarbete mellan diverse aktörer
- ◯ Annan

Om du angett annan, beskriv kortfattat vilken det är.

Vilken åtgärd anser du skulle vara mest effektiv för att främja cirkulär ekonomi och cirkulära affärsmodeller?

Tack för din medverkan!

8.2 Missive letter

Till yrkesverksamma med intresse av cirkulära affärsmodeller,

Problematiken med linjära affärsmodeller är tydlig/markant – massproduktion och -konsumtion prövar och hotar jordens fysiska kapacitet. Linjära affärsmodellers process och dess utnyttjande/förbrukande av naturtillgångar har resulterat i brist på resurser och ett högre pris. Således är det dags för en förändring där cirkulära affärsmodeller får ta större plats -dock är utmaningarna och barriärerna omfattande. *Cirkulära affärsmodeller* definieras som ett verktyg företag kan använda sig utav i strävan mot en cirkulär ekonomi. Då konceptet är relativt nytt är forskningen begränsad vilket resulterar i att ditt bidrag kommer att vara oerhört givande. Eftersom företag applicerar modellen är det kunskap och uppfattningar hos dess anställda som vi finner intressanta och anser kan bidra med värdefull information om problematiken.

Med en sådan kunskap ökar möjligheterna för att kunna förbättra cirkulära affärsmodellers chans att bli framgångsrika och mer befintliga. Enkätstudien genomförs som grund till ett examensarbete inom *Corporate Sustainability*. Detta är bakgrunden till att du härmed ombeds att medverka i en enkätundersökning utarbetad på Handelshögskolan vid Göteborgs universitet.

Förtroendet för att lämnade svar inte används på oönskat sätt är avgörande för dina svar. Därför vill vi understryka att dina svar behandlas såväl anonymt som konfidentiellt. Vad detta innebär förklaras längst ner i brevet.

Enkäten tar cirka 10 minuter att besvara. För att underlätta ifyllandet, är enkäten webbaserad och består nästan uteslutande av kryssfrågor.

Enkäten når du genom att klicka på den blåmarkerade länken;

https://app.easyquest.com/q/z2D7E

Vi är tacksamma om du besvarar enkäten senast söndagen den 15 april.

Vi ser fram emot att erhålla svar från dig och tackar dig på förhand för din medverkan! Som tack för din hjälp kommer vi tillsammans med Cradlenet att publicera en sammanställning över resultaten.

Har du frågor, tveka inte att kontakta oss: gusolssly@student.gu.se
isabellestotzer@gmail.com

Allt gott,
Lydia Olsson & Isabelle Stotzer

• de svar du anger inte kommer att lämnas vidare, försäljas eller användas i annat syfte än i detta examensarbete.
• din medverkan i detta examensarbete inte kommer att göras känd för andra personer än för oss som arbetar med examensarbetet och vår handledare.

• de svar du anger endast redovisas anonymt och i aggregerad form utan möjlighet att identifiera vilken respondent de avser.