

# From Circular Public Procurement to Circular Private Procurement: Preconditions for successful Implementation

A multiple case study on procurement for soft facility management in the Dutch financial sector



Utrecht University



CFP  
GREEN BUILDINGS



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### **Abstract**

Circular procurement can help accelerate the transition from a linear to a circular economy. The current body of scientific literature consists of theories regarding circular public procurement that might also apply to circular private procurement. Four preconditions (strategy formulation, top-management support, skills and knowledge, and organisational support) are crucial to implementing circular public procurement successfully. This study aimed to expand the body of knowledge on circular procurement by studying how the preconditions apply to circular private procurement. This study assesses the preconditions and the successfulness of twelve private organisations in the Dutch financial sector and compares the results in a multiple case study. The findings imply that the preconditions do apply to circular private procurement: (1) when all preconditions are (structurally) established, the implementation of circular private procurement is successful, (2) when all the preconditions are unestablished, the implementation of circular private procurement is unsuccessful, and (3) when the precondition strategy formulation is unestablished, circular private procurement with lower impact is achieved. Therefore this study advises working towards establishing all four preconditions in private organisations in the financial sector of which strategy formulation certainly.

*Keywords: circular procurement, circular public procurement, circular private procurement, circular economy transition*

## Executive summary

The Dutch organisation CFP Green Buildings, a sustainability consultancy firm that aims to make all buildings in the Netherlands more sustainable (CFP, n.d.), wants to contribute to making the in-use phase of buildings circular. In their endeavours to realise this, CFP Green Buildings recognised a clear need for clarification about circular procurement in the facility management sector. This study aimed to create knowledge for CFP Green Buildings about this topic to help them advise their clients, i.e. facility managers, to enhance the circularity of their buildings' use phase. The two main questions that required an answer were: (1) What is currently being done about circular procurement for soft facility management?; and (2) How can this be improved?

The first question is answered by generating an overview of the current state of circular private procurement for soft facility management in the Dutch financial sector. This overview is based on three concepts: (1) applied circularity strategies; (2) characteristics of circular private procurement; and (3) preconditions for circular private procurement. The four studied preconditions are strategy formulation, top-management support, skills and knowledge, and organisational support. The overview in table 7 and the case-specific descriptions provide examples of circular private procurement in the Dutch financial sector regarding soft facility management. The overview in figure 7 shows how the procurement process is currently adapted for circular procurement by the cases of this study. Finally, it is discussed to what extent preconditions are present at the moment and how they are expressed.

The second question is answered by a theoretical analysis of how the preconditions applied to the successfulness of the circular private procurement. The findings imply that the preconditions do apply to circular private procurement. When all preconditions are (structurally) established, the implementation of circular private procurement is successful, when all the preconditions are unestablished, the implementation of circular private procurement is unsuccessful, and when the precondition strategy formulation is unestablished, circular private procurement with lower impact is achieved. The results of this study lead to both managerial and policy implications.

### Managerial implications

Based on the outcomes of this study, a checklist for private organisations that want to improve their implementation of circular private procurement could be composed. The more checklist questions can be answered positively, the more a private organisation is on its way to implement circular private procurement successfully. Where questions are answered negatively, the question itself indicates the way to improvements. Furthermore, subsections 4.1, 4.2, and 4.3, and appendix B can be consulted for examples. The checklist comprises the following questions:

- ❑ Are the four preconditions for successfully implementing circular private procurement established? It would be sensible to establish the precondition strategy formulation as this appeared to be an important factor in applying higher circularity strategies, thus in being successful at implementing circular private procurement.
  - ❑ **Strategy formulation:** Is an official goal and strategy about circularity formulated? For example 'our company will be 100% circular by 2050'. Ensure that this strategy is also translated into procurement specific goals.
  - ❑ **Top-management support:** Is someone with a top-management position responsible for circularity and do they care about it intrinsically?
  - ❑ **Skills and knowledge development:** Are internal knowledge and skills about circular economy principles and circular procurement developed and shared with employees

that are involved in the procurement process? Internal parties, as well as external parties, can provide this.

- Organisational processes to support it:** Are organisational processes and function responsibilities revised and adjusted so that the (knowledge) infrastructure within the company is in line with the new circularity strategy?
- Does each stage of the procurement process entail circular private procurement characteristics?
  - Stage 1, preparation**
    - Is the right problem defined?
    - Is an internal or external circularity expert involved?
  - Stage 2, specification**
    - Is a continuous improvement statement required?
    - Are slightly higher costs anticipated?
    - Is a circularity statement included in the program requirements?
    - Are product (category) specific questions asked (table 7)?
  - Stage 3, sourcing**
    - Has been asked about a Data Delivery Agreement?
    - Does a partner policy exist that includes minimum sustainability standards?
    - Are company visits part of the evaluation?
    - Does an external party check the circularity performance?
  - Stage 4, utilisation**
    - Does a continuous dialogue with the supplier exist?
- Are high-level circularity strategies identified for each product category? Organisations can identify these through brainstorm sessions based on tables such as table 7 in this research. This table shows for which product category high circularity strategies are not yet applied and thus, what topics are in need of brainstorming. The applied high circularity strategies for other product categories in this table can serve as inspiration and input for the brainstorm sessions.

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## 1 Introduction

In 2050, human society would need the equivalent resources of two planets in 2050 to sustain itself (European Commission, 2011). The current linear economy operates according to a take-make-waste model (Ellen MacArthur Foundation, 2012): raw materials are taken from the environment to make a product available for a relatively short amount of time and then discarded as waste (Reid & Miedzinski, 2014). The depletion of finite natural resources and environmental pollution (Murray, Skene & Haynes, 2017), have put critical pressure on the environment (Cohen, Brown & Vergragt, 2010; European Commission, 2011; Krausmann et al., 2009; Rockstrom et al., 2009; Tukker et al., 2008). Therefore, immediate action is needed to decouple economic growth from scarce resource demand (Accenture, 2014; Bastein et al., 2013; Ellen MacArthur Foundation, 2012). A circular economy could be a means to reach a sustainable society (Geissdoerfer et al., 2017; Geng & Doberstein, 2008; Naustdalslid, 2014; Ness, 2008; Zhijun & Nailing, 2007). The circular economy is *“an economy that is restorative and regenerative by design and aims to keep products, components, and materials at their highest utility and value at all times”* (Ellen MacArthur Foundation, 2015, p.19). Transforming the linear economy into a circular economy thus contributes to the creation of a sustainable society by focusing on utility and value retention of materials. However, since this transformation requires a paradigm shift, it is considered as one of the most significant challenges of the 21st century (European Commission, 2011; Wallace & Raingold, 2012).

An effective means to stimulate the transition from a linear to a circular economy is through procurement (Ellen MacArthur Foundation, 2015; Weetman, 2017). Circular procurement can contribute to the creation of new circular economy markets (Mazzucto, 2015; Parikka-Alhola, 2008). It adds the factor of circularity to the decision matrix where traditional procurement focuses mainly on the factors price, time, and functional requirements (Hackett et al., 2007). With this additional factor, circular procurement stimulates providers of products/services to change their offerings in a way that they can include a contribution to the circular economy while remaining competitive (Parikka-Alhola, 2008). Circular procurement is defined in this study as *“the process by which [...] works, goods or services [are purchased] that seek to contribute to closed energy and material loops within supply chains, whilst minimising, and in the best case avoiding, negative environmental impacts and waste creation across their whole life-cycle”* (adapted from European Commission, 2017a, p.5).

Circular procurement is a relatively new topic in the scientific literature (Alhola et al., 2019). Recently, Sonnichsen and Clement (2020) published a literature review in which they distinguished relevant preconditions for successfully implementing circular public procurement in public organisations. These preconditions are circular economy strategy formulation, top-management support, building skills and knowledge about circular economy principles, and organisational processes to support circular procurement. However, their article and the articles theirs was based on, researched circular public procurement (Sonnichsen & Clement, 2020) but did not address circular private procurement. Although public procurement and private procurement are based on a similar procurement process (UNEP, 2014), its implementation can vary due to differences in regulation. Because public procurement has to be transparent and publicly available by law (GPA, 1996), its process is considered more rigid than that of private procurement. This contributes to the researchability of public procurement and might explain why little is known about circular private procurement (Witjes & Lozano, 2016). For example, Witjes and Lozano (2016) mention that their findings could also apply to private procurement, but so far, there have been no scientific attempts to research this. Since the successful implementation of circular private procurement could help

accelerate the transition to a circular economy, it is relevant that the body of knowledge about circular public procurement is expanded to circular private procurement. Therefore, this research aims to develop the body of knowledge on the applicability of preconditions for successfully implementing circular public procurement to circular private procurement. This leads to the following research question:

*How do the preconditions of successfully implementing circular public procurement apply to a successful implementation of circular private procurement for soft facility management in the Dutch financial sector?*

This study has a qualitative case study research design (Yin, 2017) and uses the method of comparative case studies, as suggested by Eisenhardt (1989). Semi-structured interviews and desk research are used to gather data. The case selection comprises a variety of twelve private organisations that operate in the Dutch financial sector (PWC, 2020): two asset management firms, five banking firms, one consultancy firm, and four insurance firms. In order to derive an answer to the research question, this study researches three concepts: (1) the successful implementation of circular private procurement, (2) the characteristics of circular private procurement, and (3) the preconditions for successfully implementing circular private procurement.

The theoretical relevance of this study is twofold. First, it contributes to the limited body of literature on circular procurement by researching whether preconditions of successfully implementing circular public procurement also apply to a successful implementation of circular private procurement (Sönnichsen & Clement, 2020). Second, it contributes to the body of knowledge on circular procurement initiatives and examples for soft facility management in the Dutch financial sector. The GDCP states that communicating on initiatives and examples is essential to lower the bar of switching from traditional procurement to circular procurement (MVO Nederland, 2020). The societal relevance of this study is that its results can contribute to the transformation of the economy from linear to circular. The practical relevance of this study is threefold. First, firms that are already implementing circular economy principles to their internal operations can evaluate their practice with this study's theoretical outcomes and find inspiration in the examples. Second, firms that have not begun to practice circular procurement can use the results of this study as a starting point. Third, consulting firms can use the outcomes of this study as a theory-based guideline to provide advice on this matter.

This introduction is followed by the theory, methodology, results & analysis, discussion and recommendations, and conclusion sections.

## 2 Theory

This section elaborates on the theoretical concepts of circular economy, procurement, and preconditions for successfully implementing circular procurement.

### 2.1 Circular economy

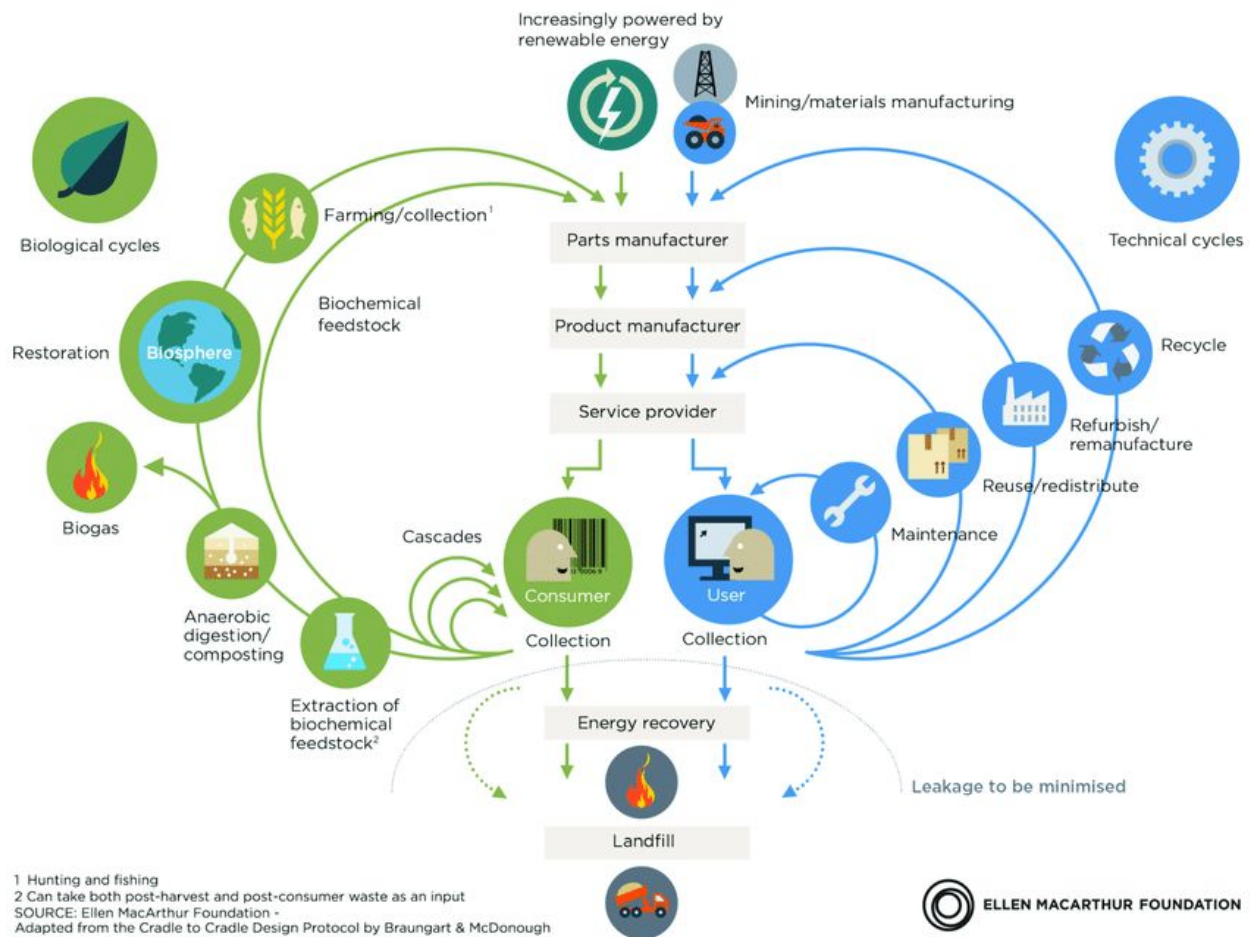
This subsection starts by discussing the circular economy concept and ends by explaining circularity strategies that contribute to a greater or lesser extent to a circular economy.

#### 2.1.1 Circular economy principles

The idea of the circular economy has its roots in the scientific fields of industrial symbiosis studies, industrial ecology, and ecological and environmental economics (Andersen, 2007; Ghisellini, Cialani & Ulgiati, 2016). Concepts like the 3R principle (reduce, reuse, recycle), regenerative design, cradle-to-cradle, and biomimicry have been integrated into the field of sustainable development resulting in the development of a novel theme: circular economy (McDonough & Braungart, 2002).

A circular economy provides an environment that is restorative and regenerative by design. The Ellen MacArthur Foundation (2015, p.19) defines the circular economy as follows: *“an economy that is restorative and regenerative by design and aims to keep products, components, and materials at their highest utility and value at all times”*. This study employs this definition because Kirchherr, Reike & Hekkert (2017) found it to be most deployed among 114 other definitions. It aims to transform waste materials into useful products/services, thereby increasing resource efficiency and eliminating waste throughout the value chain (Pollice & Batocchio, 2018). The base of the circular economy consists of two main material flows: biological flows, which are supposed to enter the biosphere and build natural capital, and technical flows, which are supposed to circulate in high-quality forms without entering the biosphere (McDonough & Braungart, 2002). The Ellen MacArthur Foundation (2012) depicts this in the butterfly model (figure 1) and adds that systems must be increasingly powered by renewable energy. Materials that cannot be recovered are incinerated to recover energy, and the remains are landfilled, which indicates a waste flow. In a circular economy, raw material extraction and wastage should be considered carefully, and it is aimed to eliminate both. This especially applies to a list of critical materials that are vital for industry and technology (European Commission, 2017b).

**Figure 1**  
*Circular Economy Butterfly Model*



Note. Ellen MacArthur Foundation (2012).

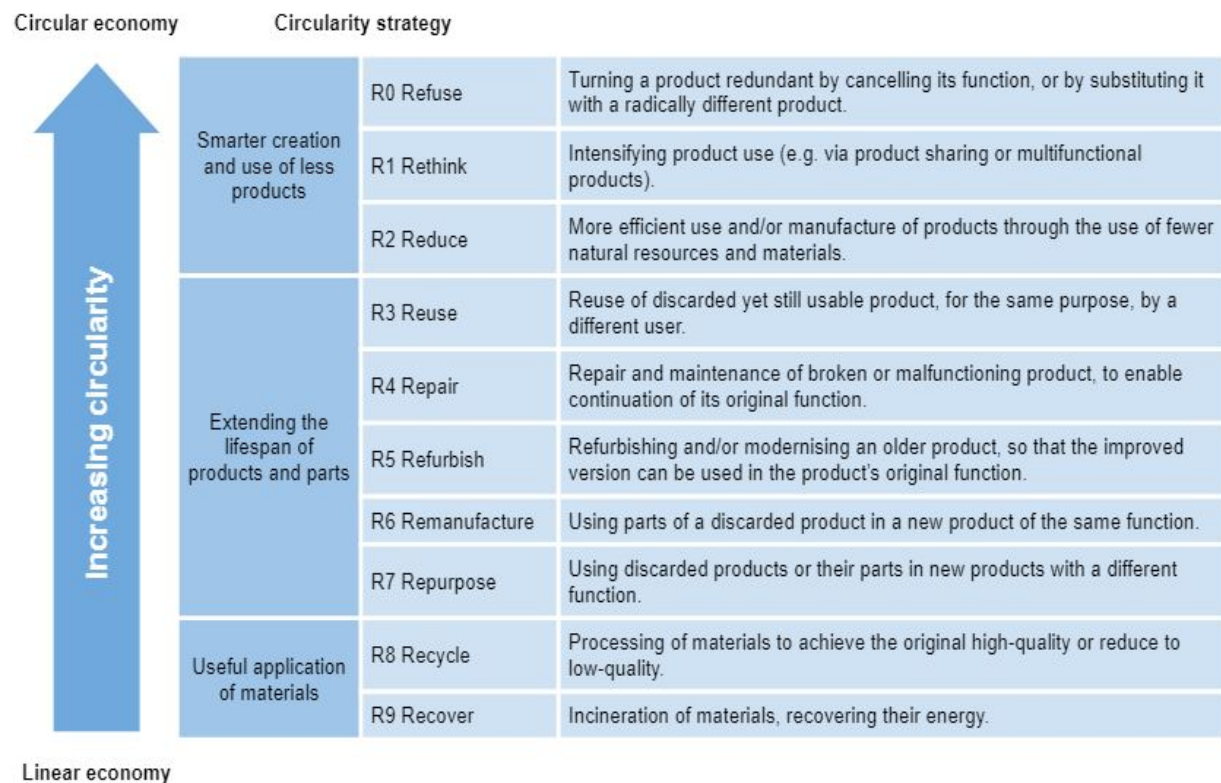
### 2.1.1 Circular economy strategies

To guide the highest utility and value retention that is aimed for in a circular economy, Potting et al. (2017) composed the 10R framework (figure 2). This framework is used in this study because it is based on various older R-frameworks (e.g. by Rli (2015) and Vermeulen et al. (2014)) and is therefore considered as most complete. It provides value retention options (i.e. circularity strategies) that each contribute to a greater (R0) or a lesser (R9) extent to a circular economy. The circularity strategies refuse (R0), rethink (R1), and reduce (R2) regard fulfilling the (primary) function of a product in a smarter way by using or making the product in a smarter way. This results in less product per unit of delivered product function. The focus of strategies R3-7 is on extending the lifespan of a product or its components. For products and product components, the strategies reuse (R3), repair (R4), and refurbish (R5) can be applied. For product components, the strategies remanufacture (R6), repurpose (R7) can be used. When products and/or their components are discarded, the materials in them can be recycled (R8) as secondary materials. Ideally, in this case, the quality of the secondary material remains of the same quality as the primary material so it can be used again for the same purpose. In reality, however, the quality of the secondary material often reduces due to contamination and blending with other materials (i.e. down-cycling). When recycling

is not an option, the last circularity strategy is to recover (R9) the energy of the materials by incineration (Potting et al., 2017).

The usage of primary materials decreases when a higher circularity strategy is applied. This means that less primary materials are recovered and produced. Avoided resource extraction and primary material production suggest that environmental stress is avoided too. According to this model, a circularity strategy that is focused on product functions contributes more to a circular economy than a circularity strategy that is focused on materials (see figure 2).

**Figure 2**  
*10R Framework*



Note. From Potting et al. (2017).

## 2.2 Procurement

This subsection starts by discussing the concept of procurement and the procurement process and ends with explaining the influence of different regulations on the implementation for public and private procurement.

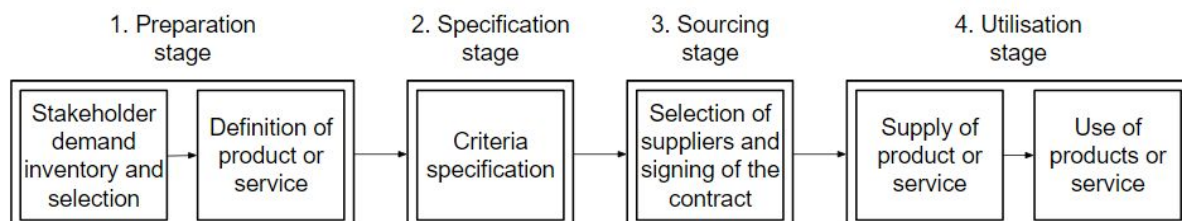
### 2.2.1 Procurement and the procurement process

Procurement is the management function that is responsible for securing the external resources (supplies, materials and services) that an organisation needs to fulfil its strategic objectives (Emmett & Crocker, 2008). Procurement in the financial sector is often involved with buying the products/services to support the people within an organisation or to support the building that the organisations inhabit (CIPS, 2020). This is often referred to as soft facility management (people-focused) and hard facility management (engineering focused). Because this research focuses on the procurement for soft facility management in the financial sector, the external resources in

this study can be understood to be the following: catering/coffee facilities, electronic items (e.g. phones, laptops), office furniture (desks, chairs), stationery items (e.g. pens, paper), transport, and waste (demolition waste not included). The objective of procurement is “*securing external resources of the right quality in the right quantity at the right time from the right place at the right cost*” (Emmett & Crocker, 2008). This objective can be attained through the procurement process (figure 3). This process consists of the preparatory stage, the specification stage, the sourcing stage, and the utilisation stage (UNEP, 2014):

1. In the first stage, the problem is defined, and the demands of related internal and external stakeholders are registered. This results in the first set of specifications that is integrated into the early concepts of a product/service that will be procured (UNEP, 2014).
2. In the second stage, the first concepts are further analysed and developed. This results in the final specifications of the product/service. Here the contracting party can choose between three options to award the tender: the lowest price, the lowest overall costs, or the most value for money based on its price-quality criteria ratio (Pianoo, 2020b).
3. The third stage starts with announcing the product/service specifications to potential suppliers and ends with the selection of the supplier and their signature on the contract finishes. The sourcing stage is also referred to as the tender process, and the product/service specification is also called tender.
4. In the fourth stage, the product/service is supplied and taken in use.

**Figure 3**  
*Procurement Process*



Note. From UNEP (2014).

### **2.2.2 The difference between public and private procurement**

Although both public and private organisations use the procurement process, it is not always implemented similarly. The European Union aims to stimulate open market forces throughout Europe. This is the reason why public organisations in the European Union have to comply with a transparent procurement process in which their choices are clearly communicated to potential European suppliers (GPA, 1996). If the tender value is equal to or higher than € 139.000 exclusive of Value Added Tax, it must comply with the European Procurement Act (Pianoo, 2020c). This translates to a strict public procurement process in which contact between suppliers and the procurer is not allowed before the publication of a tender to ensure competition (Kiiver & Kodym, 2014). The final influence of the procuring party to select a suitable supplier reaches up until the tender publication: detailing the required specifications. After publishing the tender, the procurer has to award a contract to the supplier that is economically the most advantageous (European Union, 2014). The economically most advantageous strategy is defined in the second stage of the

procurement process: the specification stage. For example, once the criteria are set, and the weighting has been acknowledged, the procurement party must award the best fit with the tender.

For the private procurement process, these regulations do not apply in principle. Private organisations do not have to comply unless they precisely follow the same procedure, then they have to comply with all the rules (van Oppen, Croon & de Vroe, 2018). This makes the private procurement process less transparent and more flexible, resulting in more freedom in their choice and thus also in their selection of products/services and the way they select them. This freedom allows private organisations to experiment more rapidly with procurement process innovations such as circular procurement than public organisations. This marks circular private procurement as a relevant inspiration source for circular procurement (MVO Nederland, 2020).

### **2.3 Preconditions for successfully implementing circular procurement**

This subsection starts by discussing the concepts of circular procurement, circular public procurement, and circular private procurement. After this, the preconditions for successfully implementing circular public procurement are introduced, and the objective of this research is proposed: preconditions for successfully implementing circular private procurement.

#### ***2.3.1 Circular procurement, circular public procurement, and circular private procurement***

The main difference between circular procurement and traditional procurement is that circular procurement focuses on value for money and acknowledges circularity as value (Alhola et al., 2019) where traditional procurement focuses on procurement at the highest quality, at the lowest cost, in the shortest time and acknowledges costs as the most critical factor (Hackett et al., 2007). Alhola et al. (2019) argue that circular procurement is comparable to sustainable and green procurement on that point.

Circular procurement is a relatively new topic, and therefore its definition is still developing (Alhola et al., 2019). The most recent definition of circular public procurement by the European Commission (2017a, p5) is considered to be the most nuanced (Pollice & Battocchi, 2018): *“the process by which public authorities purchase works, goods or services that seek to contribute to closed energy and material loops within supply chains, whilst minimising, and in the best case avoiding, negative environmental impacts and waste creation across their whole life-cycle”*. The concepts of circular procurement and circular public procurement are often used interchangeably (Sönnichsen & Clement, 2020). However, the concept of circular procurement could also refer to circular private procurement. As suggested by Witjes and Lozano (2016), the findings for circular public procurement may also apply to circular private procurement, thereby recognising the difference between the concepts. To be able to understand the concept and to implement it, ideally, there would be a definition for circular procurement in general and a specification of what this entails for circular public procurement as well as for circular private procurement. Therefore, this study proposes that the circular public procurement definition by the European Commission (2017a, p5) is adapted to create a definition for circular procurement and circular private procurement. Although public authorities are mentioned in this definition, it is assumed in this research to be also suitable for private authorities and authorities in general since no specific regulations for public organisations, which would make the definition unfit to adapt, are mentioned. The proposed definitions for circular procurement and circular private procurement can be found in table 1.



**Table 1**

*Definitions of circular procurement, circular public procurement, and circular private procurement.*

Concept	Definition
Circular procurement	“the process by which works, goods or services <i>are purchased</i> that seek to contribute to closed energy and material loops within supply chains, whilst minimising, and in the best case avoiding, negative environmental impacts and waste creation across their whole life-cycle” Adapted from European Commission (2017a, p. 5).
Circular public procurement	“the process by which <i>public authorities</i> purchase works, goods or services that seek to contribute to closed energy and material loops within supply chains, whilst minimising, and in the best case avoiding, negative environmental impacts and waste creation across their whole life-cycle” (European Commission, 2017a, p. 5)
Circular private procurement	“the process by which <i>private authorities</i> purchase works, goods or services that seek to contribute to closed energy and material loops within supply chains, whilst minimising, and in the best case avoiding, negative environmental impacts and waste creation across their whole life-cycle” Adapted from European Commission (2017a, p. 5).

*Note.* (Adapted) from the European Commission (2017a, p. 5)

### **2.3.2 Preconditions for successfully implementing circular public procurement**

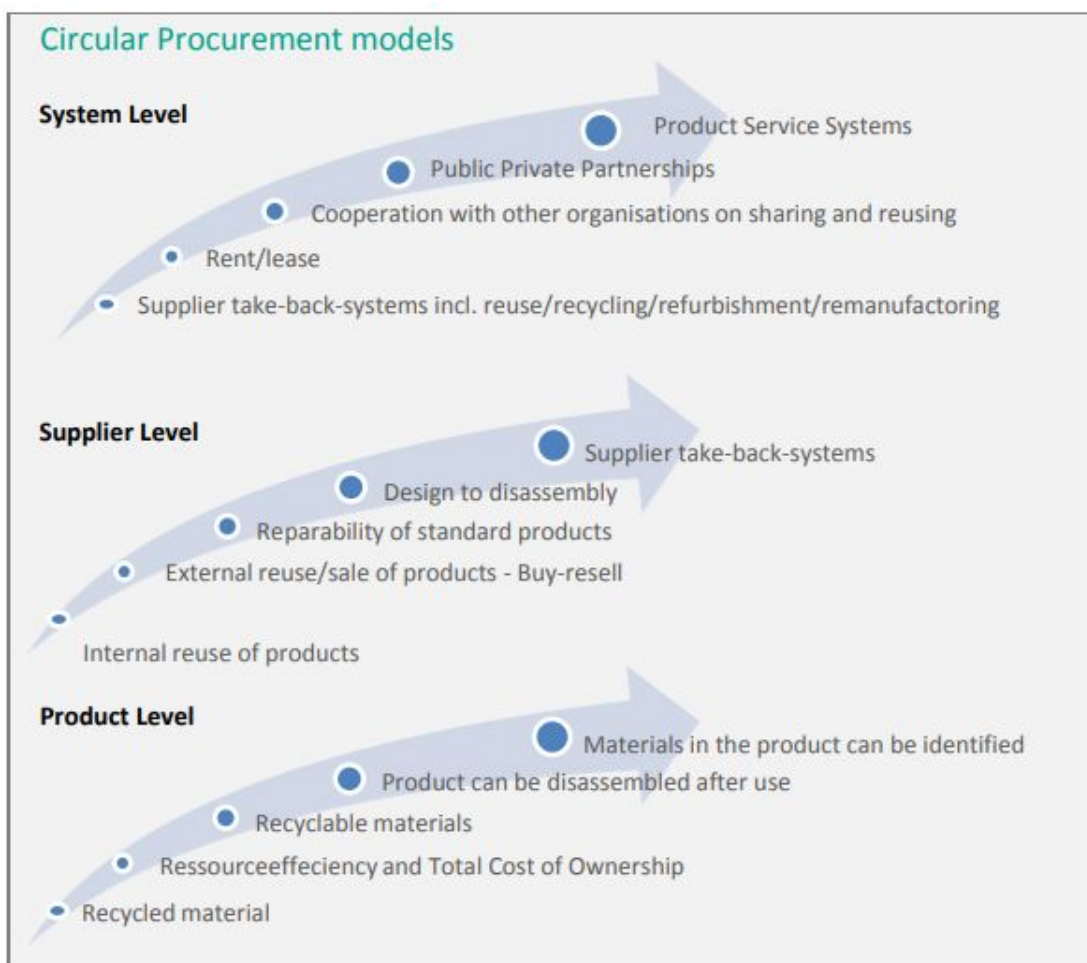
Since procurement is considered an essential means to stimulate the transition from a linear to a circular economy (Ellen MacArthur Foundation, 2015; Weetman, 2017), it is important to implement circular procurement successfully in both public and private organisations rather sooner than later.

First, it is important to determine when a circular procurement implementation is successful. For this purpose, this study uses the definition of circular public procurement by the European Commission. Pollice and Batocchio (2018) extracted that this definition focuses on circular procurement hierarchy, in other words: an R-framework. As mentioned before, the 10R framework by Potting et al. (2017) is employed in this study. Currently, lower circularity strategies are implemented more often amongst organisations, then higher circularity strategies (PBL, 2018). Since higher circularity strategies contribute more to the circular economy than medium (R3-7) and lower (R8-9) circularity strategies, a circular procurement could be considered as more successful when a higher circularity strategy is implemented. Although the volume of circular procurements is an indicator that organisations are implementing circular procurement, the level of circularity strategy that is achieved in the final procurement indicates the successfulness of circular procurement in this study. Therefore, in this study, successful implementation of circular private procurement is understood as procurement for soft facility management that incorporates a high circularity strategy (R0-2) on purpose. It can also occur accidentally, but this indicates that circularity was not included in the selection process and therefore not structurally present. Besides the R-frameworks, circular procurement models exist that can be interpreted at the system level, supplier level and product

level. These models can affect multiple circularity strategies, as can be seen in figure 4. The circular procurement models indicate which circularity strategy it impacts.

It is interesting to see how circular procurements are realised. The procurement process plays an essential role in this. The first stage of the procurement process is especially important when trying to implement more circular solutions since this is where the needs are defined, the procurement strategy is chosen, and the possibilities are examined (SPP Regions, 2017). This can also apply to circular private procurement since it helps to scope the search for procurement. However, because the private procurement process is generally less rigid than the public procurement process (van Oppen, Croon & de Vroe, 2018), it might be incorporated in a different way. In all stages of the procurement process, elements can be changed to achieve a more circular procurement. According to SPP Regions (2017, p5) *“there are many steps to take in the different phases of procurement on the way to closing the loops”*. It is interesting to see how circularity principles are incorporated in the procurement process of private organisations: the circular private procurement process.

**Figure 4**  
*Circular Procurement Models*



Note. From SPP Regions (2017).

However, before circular procurement can be successfully implemented in organisations, preconditions must be met. According to Sönnichsen and Clement (2020), four preconditions for successfully implementing circular public procurement exist. These preconditions are circular

economy strategy formulation, top-management support, skills and knowledge about circular economy principles at procurement, and organisational processes to support circular procurement. Because the four preconditions for successfully implementing circular public procurement (Sönnichsen & Clement, 2020) do not mention specific public regulations, this study assumes them to be also applicable to successfully implementing circular private procurement. Although the basis of procurement for public and private organisations is similar, it cannot be adopted that the preconditions in terms of successful implementation of the procurement process are the same because they operate under different regulations. Therefore, it is relevant to research if circular public procurement preconditions also play a similar role in circular private procurement.

### 3 Methodology

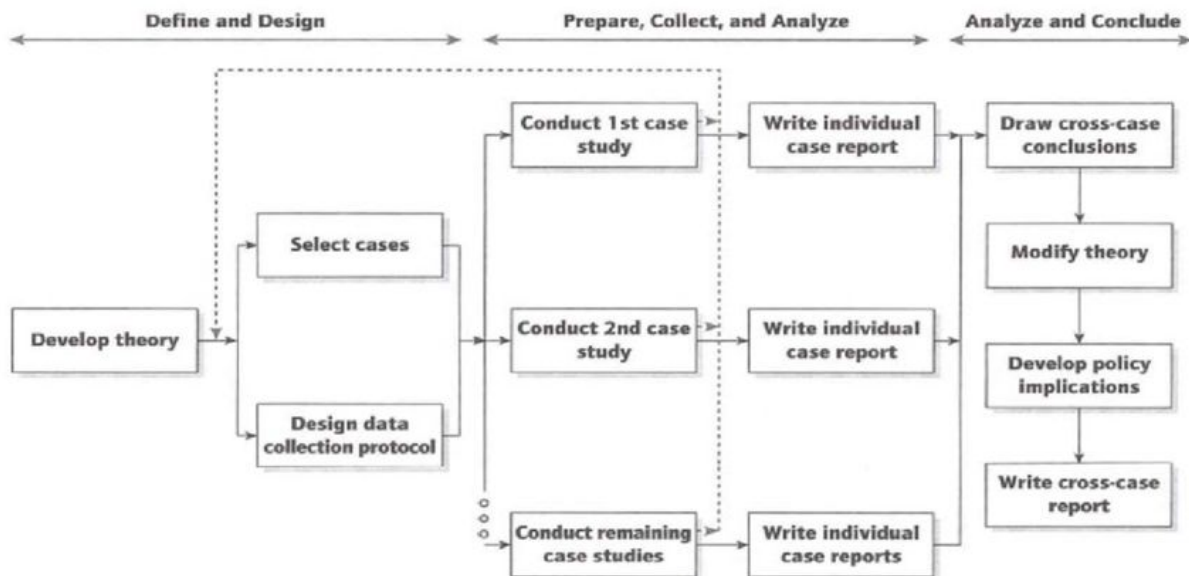
This section discusses the methodological choices that are made to realise the goal of this research: to expand the body of knowledge on the applicability of preconditions for successfully implementing circular public procurement to circular private procurement. It comprises a discussion of the research design, case selection, data collection, operationalisation, data analysis, ethical issues, and quality of the research.

#### 3.1 Research design

This study aims to expand the body of knowledge on the applicability of preconditions for successfully implementing circular public procurement to circular private procurement. A research design that fits this goal is that of the case study (Yin, 2017). Yin argues that case studies are generalisable to theoretical propositions and that the purpose of a case study is to expand and generalise theories (analytic generalisation) (2017, p.53). It is important to keep in mind that in this sense, the case and the case study do not represent samples and cannot extrapolate probabilities (statistical generalisations). When multiple cases are studied and compared, the researcher can better establish the circumstances in which theory will or will not hold (Eisenhardt 1989; Yin, 2017). Yin (2017, p.58) adds to this: *“although single-case studies can yield invaluable insights, most multiple-case studies are likely to be stronger than single-case studies.”*. Therefore, this research uses a multiple case study design. Since the cases under study are the units of analysis, a holistic case study design is applicable (Yin, 2017). The multiple case study procedure composed by COSMOS Corporation (1983) (figure 5) is used to guide the methodological choices in this research. Yin (2017) adds that case studies are suitable to find answers to how and why questions. This suits this study's objective as it compares the successful implementation of the circular procurement and the prevalence of the preconditions between the cases to derive an answer to the research question: *How do the preconditions of successfully implementing circular public procurement apply to a successful implementation of circular private procurement for soft facility management in the Dutch financial sector?*

Case studies can be approached using qualitative data, quantitative data, or a combination (Yin, 2017). Using a qualitative research approach, however, is a more common approach (Bryman, 2012). It allows for a more in-depth view on a phenomenon by highlighting various meanings, experiences and points of view regarding it. This enables researchers to build a more detailed understanding of existing situations and of their context (Bryman, 2012), which fits the purpose of this research and is therefore used in this study.

**Figure 5**  
Multiple Case Study Procedure



Note. From COSMOS Corporation (1983).

### 3.2 Case selection

In multiple case studies, it is important that a replication logic is used instead of a sampling logic and that the researcher selects each case carefully and accordingly (Yin, 2017, p.97): *“The cases should serve in a manner similar to multiple experiments, with similar results (a literal replication) or contrasting results (a theoretical replication) predicted explicitly at the outset of the investigation.”*. According to Bryman (2012), generic purposive sampling is used for the identification and selection of information-rich cases related to the phenomenon of interest. In this type of sampling strategy, criteria determine whether a case is considered to be information-rich. According to Boeije and Bleijenbergh (2019), criteria are best based on substantiating theoretical grounds. This study used generic purposive sampling and selected cases based on four grounds.

First, the Netherlands is selected because it is regarded as the frontrunning country of Europe in circular public procurement (European Commission, 2019; Pianoo, 2020a). It is considered to be such because it launched the Green Deal Circular Procurement (hereafter GDCP) initiative as early as 2013 (Green Deal, 2013) and has more ambitious goals in this area than the European Commission (Rijksoverheid, 2016). This Green Deal was created by a variety of Dutch (semi) public and private organisations and has since also been adopted by Belgium, Finland, and the city of Paris (ten Wolde, 2019). While Dutch public organisations must work towards the goal of at least 10% circular public procurement by the end of 2020 (Rijksoverheid, 2016), no similar target for Dutch private organisations exists yet. However, due to the involvement of private organisations in the creation of the GDCP and stimulating governmental initiatives for the circular economy in general, circular private procurement is also a relevant topic in the Netherlands (MVO Nederland, 2019).

Second, one sector is studied in particular because private procurement can vary across sectors (Vermeulen, Witjes & Reike, 2014). Since the financial sector has been put under pressure to divest unsustainable funds such as arms trade and fossil fuels, a trend has been observed of these organisations becoming more sustainable in both their primary and supportive activities (PWC, 2020). Primary activities contribute directly to the delivery of a product, in this case, financial

products, while supportive activities, e.g. procurement, enable the primary activities to happen (Porter, 1985). This makes the financial sector a relevant sample to study circular private procurement.

Third, the procurement for soft facility management is studied. Procurement is involved with buying the products/services to support the people within an organisation (CIPS, 2020). This is often referred to as soft facility management (people-focused) and includes transportation, electronic items (e.g. phones, laptops), catering/coffee facilities, stationery items (e.g. paper, pens), office furniture (desks, chairs), and waste (demolition waste not included). Hard facility management (engineering focused) exists alongside. However, it is not included in this study because scientific efforts in that area, such as the Material Passport (Honic, Kovacic & Rechberger, 2019) and energy management (Lombard, Ortiz & Pout, 2008), already exist.

Fourth, the selected cases must address sustainability or circularity in their annual (sustainability) report. This criterium is deployed to select exemplifying cases: *“the notion of exemplifying cases implies that cases are often chosen not because they are extreme or unusual in some way but because [...] they will provide suitable context for certain research questions to be answered”* (Bryman, 2012, p.70). In this study, exemplifying cases for literal replications are cases in which the preconditions for successfully implementing circular private procurement are likely to be present, and the circular private procurement is successful. When a case yields different results, it is treated as a theoretical replication.

The financial sector exists of different types of firms: asset management firms, banking firms, consultancy firms, and insurance firms (PWC, 2020). The case selection comprises twelve Dutch private organisations that operate in the financial sector: two asset management firms, five banking firms, one consulting firm, two insurance firms. The contact person at the firm was asked which employee could best provide information about circular actions in procurement of soft facility management. All cases are anonymised as requested by the interviewees. This includes the generalisation of the positions of the interviewees. They are classified in three categories: sustainability, procurement, and facility. The largest component of the function is mentioned first, then the others follow in diminishing importance. Table 2 provides an overview of the cases.

**Table 2**  
*Case Overview*

Case number	Type of firm	Position of interviewee	Interview conducted on
1	Asset management	Facility, procurement, sustainability	17-6-2020
2	Asset management	Procurement, facility	3-7-2020
3	Banking	Facility, procurement	17-6-2020
4	Banking	Sustainability, procurement	12-6-2020
5	Banking	Facility, procurement	16-6-2020
6	Banking	Procurement, facility	29-5-2020
7	Banking	Procurement, facility	30-6-2020
8	Consultancy	Facility, procurement, sustainability	24-6-2020
9	Insurance	Procurement	22-6-2020
10	Insurance	Facility, procurement	26-6-2020
11	Insurance	Facility, sustainability	25-6-2020
12	Insurance	Sustainability	15-6-2020

### 3.3 Data Collection

The cases are studied using qualitative research methods. The data that is used to perform the analyses of this study is collected through (1) semi-structured interviews and (2) annual (sustainability) reports. This study chose the form of semi-structured interviews because it has the advantage of using similar wording in all interviews and covering mainly the same questions while giving room to deepening questions (Bryman, 2012). This fits well with the importance of context in case studies.

From the semi-structured interviews, information on three subjects is collected: performed procurements by the cases that entail circularity strategies per product category, circular private procurement process characteristics, and information on the preconditions in the cases. The interviews were conducted by telephone by the researcher of this study in the period from May 29th to July 3rd, 2020 (see table 2). The interviews have all been recorded and written out after the interviewee gave consent. From the annual (sustainability) reports, information on the prevalence of

the preconditions in the cases is collected. This is done to triangulate the data, which is important in case study research (Yin, 2017). The annual reports of 2019 are used because it is the most recent year, and they are available for all cases.

### 3.4 Operationalisation

The concepts that are studied in this research are (1) the successful implementation of circular private procurement, (2) the characteristics of circular private procurement, and (3) the preconditions for successfully implementing circular private procurement.

The first concept, the successful implementation of circular private procurement, is indicated by the ten circularity strategies (Potting et al., 2017). These indicators are operationalised according to the explanations of the indicators provided by Potting et al. (2017) (see table 3). During the interviews is asked what circularity measures are taken per product category (see questions 7a-f in the interview scheme in appendix A). When a case implements a high circularity strategy (R0-2), this is considered as a successful implementation of circular private procurement. When a case implements a medium, lower or no circularity strategy, the implementation of circular private procurement is considered to be unsuccessful. Table 4 shows this operationalisation.

**Table 3**

*Operationalisation of successful Implementation of Circular Private Procurement.*

Indicator	Construct
R0 Refuse	Turning a product redundant by cancelling its function, or by substituting it with a radically different product.
R1 Rethink	Intensifying product use (e.g. via product sharing or multifunctional products).
R2 Reduce	More efficient use and/or manufacture of products through the use of fewer natural resources and materials.
R3 Reuse	Reuse of discarded yet still usable product, for the same purpose, by a different user.
R4 Repair	Repair and maintenance of broken or malfunctioning products, to enable the continuation of its original function.
R5 Refurbish	Refurbishing and/or modernising an older product, so that the improved version can be used in the product's original function.
R6 Remanufacture	Using parts of a discarded product in a new product of the same function.
R7 Repurpose	Using discarded products or their parts in new products with a different function.
R8 Recycle	Processing of materials to achieve the original high-quality or reduce to low-quality.
R9 Recover	Incineration of materials, recovering their energy.

*Note.* From Potting et al. (2017).



**Table 4***Operationalisation of successful Implementation of Circular Private Procurement*

Circularity strategy / Successfulness	Successful	Unsuccessful
R0-2	X	-
R3-9	-	X
No R	-	X

The second concept, the characteristics of circular private procurement, is operationalised using the general procurement process of UNEP (2014) (see table 5). In the interview contained specific questions about how circular private procurement is taken into account (see questions 7-16 in appendix A). Based upon the general procurement process, characteristics of private procurement can be identified for private organisations in the financial sector.

**Table 5***Operationalisation procurement process*

Indicator	Construct
1 Preparation stage	In the first stage, the problem is defined, and the demands of related internal and external stakeholders are registered. This results in the first set of specifications that is integrated into the early concepts of a product/service that will be procured (UNEP, 2014).
2 Specification stage	In the second stage, the first concepts are further analysed and developed. This results in the final specifications of the product/service. Here the contracting party can choose between three options to award the tender: the lowest price, the lowest overall costs, or the most value for money based on its price-quality criteria ratio (Pianoo, 2020b).
3 Sourcing stage	The third stage starts with announcing the product/service specifications to potential suppliers and ends with the selection of the supplier and their signature on the contract finishes. The sourcing stage is also referred to as the tender process, and the product/service specification is also called the tender.
4 Utilisation stage	In the fourth stage, the product/service is supplied and taken in use.

*Note.* From UNEP (2014).

The third concept, the preconditions of successfully implementing circular private procurement, is operationalised using the explanations of the preconditions provided by Sönnichsen and Clement (2020) (see table 6). Table 6 shows the numbers of the specific interview questions for the indication of the prevalence of the preconditions for successfully implementing circular private procurement. The corresponding interview questions can be found in the interview scheme in appendix A. The interview data for the preconditions are verified by the data from annual (sustainability) reports. A precondition is assessed from structurally established (green) to established but not structurally (orange) to not established (red). Table 6 provides a detailed overview of the operationalisation per indicator (precondition):

**Table 6**  
*Operationalisation of Preconditions for successfully Implementing Circular Private Procurement*

Indicator	Construct
Circular economy strategy formulation (4, 6, 7, 8, 9, 12, 16)	Strategy and goals are formulated that refers to a waste reduction or circular business operations
	No strategy and/or goals formulated but it is being worked on
	No interest in circularity
Top-management support (4, 9)	Top-management supports circular procurement officially
	Top-management allows circular procurement
	Top-management discourages circular procurement (by focusing on lowest costs)
Building skills and knowledge about circular principles (1, 3, 4, 5, 7, 8, 13, 15, 16)	Training on circular procurement is provided
	Skills and knowledge development based on personal interest, but not on a structural basis: not mandatory for the position for the organisation
	No knowledge development
Organisational processes to support circular procurement (1, 2, 4, 5, 6, 7, 8, 10, 11, 12, 13, 14, 15)	Structural efforts are made to enable circular procurement
	It is allowed but not standardised
	No purposeful efforts are made to enable circular procurement

*Note.* Indicators from Sönnichsen & Clement (2020).

### 3.5 Data analysis

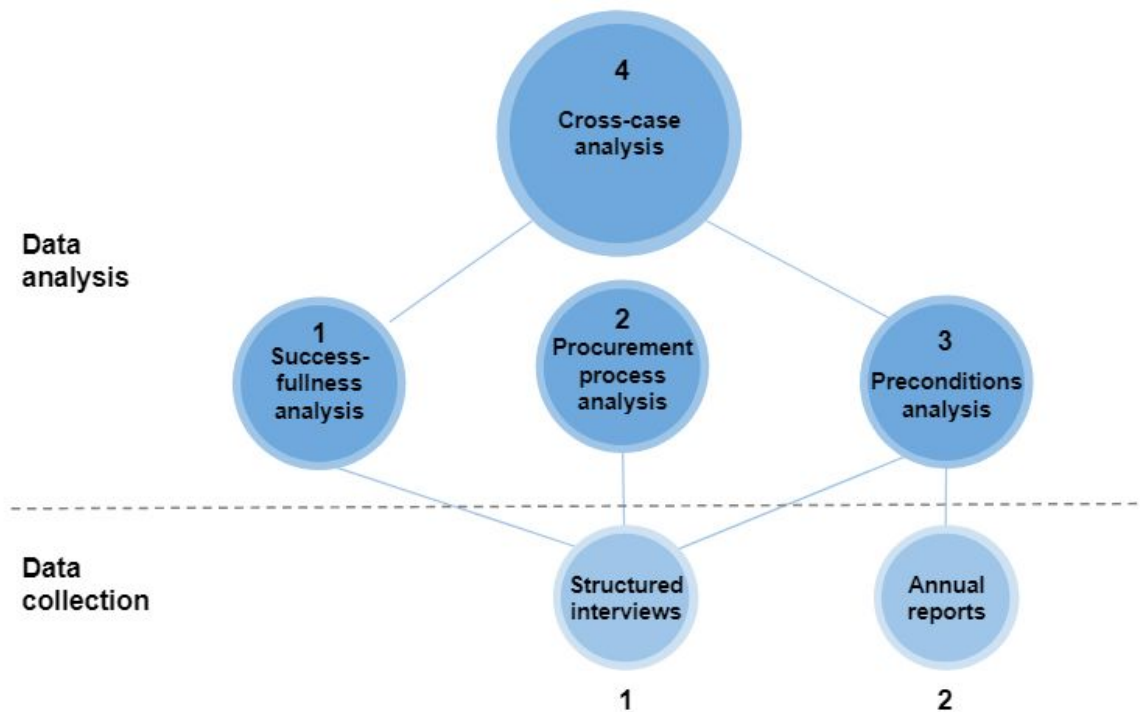
According to the multiple case study procedure (see figure 5), the first thing to do when analysing multiple cases is to assess them individually. In this study, each case is evaluated based on a (1) successfulness analysis, (2) procurement process analysis, and a (3) preconditions analysis. After these individual analyses are performed, a (4) cross-case analysis is performed to compare the individual results of the (1) successfulness analysis and the (3) preconditions analysis.

To be able to perform these analyses, first, the interviews are transcribed and predefined codes are made for analysis 1 and 3: the four preconditions and the product categories (see operationalisation). Then the interviews are analysed and coded accordingly. Second, the procurement process characteristics are coded inductively to capture the context of the cases.

1. The first analysis aims to analyse the successfulness of implementing circular private procurement per case. In this step, the transcribed interviews are coded according to the product categories. Then an overview of applied circularity strategies per case per product category is constructed (appendix B). Based on this overview, a summarising table is composed that depicts all circularity strategies that are applied by the cases per product category. This table is created to add examples to the body of knowledge on circular private procurement and to assess the successfulness of circular private procurement implementation. From this table is deduced which cases are successful and which are unsuccessful at implementing circular private procurement according to the operationalisation.
2. The second analysis aims to analyse the current characteristics, the difficulties, and the future of the circular private procurement process in the Dutch financial sector based on the general procurement process (UNEP, 2014). In this step, the transcribed interviews are coded according to these topics. The results are depicted in a figure similar to figure 3 to visualise how circular private procurement is expressed.
3. The third analysis aims to create insights in whether or not the preconditions for successful circular private procurement are present. In this step, the data from the transcribed interviews and annual (sustainability) reports is coded per precondition. Then each case is analysed on the precondition and assessed accordingly. The results are depicted in a table and discussed.
4. The fourth analysis aims to create insights in the objective of this research: preconditions for successfully implementing circular private procurement. The results from analysis 1 and 3 are combined in a table. Then the cases are compared based on the preconditions and (un)successfulness of circular private procurement implementation.

To summarise the data analysis subsection: this research consists of four steps that are necessary to answer the research question: (1) successfulness analysis, (2) procurement process analysis, (3) preconditions analysis, and (4) cross-case analysis. In figure 6 is depicted how the steps relate to each other and the data collection.

**Figure 6**  
*The relation between Data Analysis and Data Collection*



### 3.6 Ethical issues

Because some interviewees requested both personal and company anonymity, all interviews have been anonymised. This has been handled in the following way. All interviewees were given a number from 1 - 12. The corresponding names are stored offline as a hardcopy that is accessible to the researcher. The audio files and transcription files are stored in the secured online environment of Utrecht University. When audio files were saved, the number of the interviewee was used as the file name. Also, the Word files that were created when writing out the interviews were named after the corresponding number. For writing out the interviews, the software OTranscribe is used. Whenever the interviewee used the company name or other recognisable names that might uncover the identity of the interviewee or its firm, it was transcribed as a noun such as 'firm' or 'building owner'. Because the interviewees/firms are anonymised, the annual (sustainability) reports are referred to as 'case [#]'. Quotes on strategies or targets might be more challenging to anonymise. Still, since the words of the interviewees are translated from Dutch to English, there will be a certain anonymisation factor.

### 3.7 Quality of the research

The quality of research regards the objectivity of a study (Boeije & Bleijenbergh, 2019). This means that the conclusions of the research must be an adequate representation of reality (Yin, 2017; Boeije & Bleijenbergh, 2019). Boeije and Bleijenbergh (2019) state that reliability and validity are the two criteria that are consistently used to assess this.

Reliability revolves around whether another researcher would be able to follow precisely the same steps as the researcher did (Bryman, 2012). It thus focuses on replicability (Yin & Heald, 1975).

Because context and time differ when replicating case studies, reporting the methodological steps is important (Bryman, 2012). Especially in a multiple case study, it is crucial for the quality of the research to create a chain of evidence (Yin, 1979 in Yin, 1981 p. 63): *“the chain of evidence consists of the explicit citation of particular pieces of evidence, as one shifts from data collection to within-case analysis to cross-case analysis and to overall findings and conclusions”*. This means that the researcher should make evident what steps are taken when they do research. In this study, attention was paid to describing every step. Also, the use of a database to store data systematically contributes to ensuring reliability (Baxter & Jack, 2008) and is therefore applied in this study. Despite the fact that a topic list was used to enhance the reliability of the study (see appendix A for the interview guide) and the flexible nature of semi-structured interviews fits case study research, collecting data through semi-structured interviews diminishes the replicability (Boeije & Bleijenbergh, 2019).

Validity regards *“the integrity of the conclusions that are generated from a piece of research”* (Bryman, 2012, p. 47). The validity of a study can be assessed on two levels: internal and external validity. Internal validity focuses on whether the researcher measures what they want to measure (Yin & Heald, 1975; Bryman, 2012; Boeije & Bleijenbergh, 2019). Yin (2017, p.52) emphasises that the internal validity of case studies can be increased by *“highlighting methodic procedures, especially the reporting of all evidence fairly”*. This improves the quality in such a way that it distinguishes a research case study from other kinds of non-research case studies (e.g. business case study). In this study, the methodological procedures (e.g. proper data collection and data display) are clearly described. Data triangulation also increases the internal validity: the use of multiple sources to retrieve data from (Bryman, 2012). Data triangulation enhances the quality of the construct measurement because it allows for evaluation from various perspectives. Thus the findings can be more confirmed to be true (Baxter & Jack, 2008). Therefore two types of sources were used in this research: interviews and publicly available annual (sustainability) reports. External validity focuses on whether the results of the study are generalisable to other situations beyond the studied context (Yin & Heald, 1975; Bryman, 2012). A common misconception about case studies is that they are not generalisable at all (Yin, 2017). According to Bryman (2012), a case study cannot serve as a sample to represent something bigger: the value of a qualitative case study sits in the richness of empirical data. This statement concerns statistical generalisation of which the goal is to formulate statistical probabilities that apply to a larger population. Case studies are, however, similar to experiments, generalisable to theoretical propositions (Yin, 2017). This is called analytic generalisation, and its goal is *“to expand and generalise theories”* (Ying, 2017, p.53). A researcher must be careful not to confuse the two types of generalisation when doing case study research and thus apply replication logic in a multiple case study, not sampling logic (Yin, 2017). One way to ensure this is the use of purposive sampling of exemplary cases (Yin, 2017), which was done in this study. In addition to this, chapter 2 of *Case study research and applications* by Yin (2017 p.58-116) was studied to gain familiarity with the concept of analytic generalisation and replication logic.

## 4 Results

This section discusses the results of the four analyses. First, the circular strategy analysis is explained. It provides and discusses an overview of circularity strategies per product category. This leads to an assessment of the successfulness of implementing circular private procurement. Second, the procurement process analysis is presented: an overview of the emerging concepts, the difficulties and a view on the future is given. Third, the precondition analysis is discussed: the assessment of the preconditions is presented and explained. Fourth, the results of the precondition successfulness analysis are presented and discussed.

### 4.1 Circularity strategy results

In this subsection, the circularity strategies that are applied by the cases are discussed, and the successfulness of implementing circular private procurement is assessed per case.

#### 4.1.1 Circularity strategy assessment

Table 7 shows which circularity strategy (R0-9) is used in which product category by which firm and which actions contribute to that strategy. In this subsection, the findings on the high circularity strategies (R0-2) are explained in more detail because these yield the most impact regarding the circular economy. For more detailed information on and examples of the other R strategies per case or product category, appendix B can be consulted.

**4.1.1.1 Catering.** Case 1 no longer sells single-use plastic bottles in its building but instead uses a combination (R0) of a hot/sparkling/chilled water crane, a water filter, and reusable plastic bottles. The change was especially successful because it meets the functional requirements of the employees and is, therefore, a worthy substitute while banning out all single-use plastic bottles. Case 4 has a combination of ceramic cups and a dishwasher which substitutes paper cups in smaller locations (R1). Also, some cases offer food without plastic and ask their suppliers to do the same. Other cases offer a limited amount of food to decrease food waste (R2).

**4.1.1.2 Electronic items.** Case 7 receives updates on which types of data their employees have downloaded to their devices and which kinds of data should be removed for energy and thus money savings (R2): *“They simply see at user level what everyone stores and what needs to be deleted, otherwise it only costs money and energy.”* Case 11 asked their Asian electronic hardware supplier if the transport could be arranged differently to decrease the CO<sub>2</sub> footprint, and adapted their planning and ordering process to a different transport mode: *“That saves 95% CO<sub>2</sub> on transport, and it is also slightly cheaper, a few euros per laptop, but transport takes longer. But if you can adjust your planning and your order process to that, then that's completely fine too.”*

**4.1.1.3 Office furniture.** Case 4 chose to buy modular designed furniture for their new interior so that the usage can be maximised (R1).

**4.1.1.4 Stationary items.** Case 10 and 11 mentioned that they substitute their physical letters and invoices with an online application (R0). Case 11 states for example: *“In any case, we are also very much focused on our output, that is, we send as little paper as possible out the door. Between 2017-2019 we have already reduced 25% of our paper flow [...] by digitisation.”* Case 4 also mentions that they made it more challenging to print (R0) and took away storage space for the paper (R0) so it would become less desirable to print. Case 3 uses less paper than before by printing double-sided by default or promoting printing two pages on one side (R2). With office suppliers, they

refuse as much packing material as possible (**R1**) for example by selecting: *“suppliers that do not deliver in cardboard boxes but in plastic boxes that are collected and reused to place the next order.”*.

**4.1.1.5 Transport.** Case 2 wants to dispose of the lease park totally by replacing it with a mobility budget (**R1**): *“The ambition we have is to see if we can dispose of the entire lease park and put every employee on a mobility budget: you get a budget, and it is up to you to use it: e.g. in a bicycle or train subscription or a car that is up to you. In practice, you see that people often get off a lease car because it is their own money and that people are inclined to opt for smaller cars or other transport modes. Give them a lease car, and then they choose the largest car, so to speak.”* However, they are not there yet. To ease their employees to the concepts of driving electrical and part-time, they launched a pilot in which all employees could test this out for free. This resulted in positive reactions: *“Not only the number of electric cars in the lease has increased, but also the perspective on part-time mobility changed: ‘yes I have had the lease car for many years now and a second one for my husband/wife, but of course I can also travel to work by train 80% of the time, and use a shared car for the other 20%. There were a lot more colleagues than I expected who came up with that feedback: yes, it made me think differently about mobility and whether I should continue to do it in the same way.”*. Case 6 limits their travelling by plane (**R0**). Case 12 is altering their mobility plan to include more shared cars (**R1**) and an increased bicycle plan (**R0**): *“We must therefore ensure that shared cars are available and that the lease policy is adjusted. We proposed an increase in the bicycle plan.”*.

**4.1.1.6 Waste.** The high circularity strategies (R0-2) that can be found in the product category waste originate from the other product categories. First, they were mentioned there (e.g. the substitution of physical mail by an electronic application under the product category electronic items) but since they also apply to the product category waste, they are also mentioned there to create an overview of circularity strategy measures for waste.

**Table 7**  
*Applied Circularity Strategies per Product Category and Case*

Circularity strategy	Catering	Electronic items	Office furniture	Stationary items	Transport	Waste
R0 Refuse	No water bottles anymore but a selection of sparkling/hot/chilled water crane, water filter, and reusable bottles (1, 8)			Substitute letters with digitization (10, 11) Make printers harder to print from (4, 10) Take away storage space for paper (4)	Limit traveling by plane (6) Mobility budget instead of lease park (2) Increase bicycle plan (12)	Refusing packaging materials and demanding that suppliers discard it themselves in a responsible way (1) No water bottles anymore but a selection of sparkling/hot/chilled water crane, water filter, and reusable bottles (1, 8) Substitute letters with digitization (10, 11) Make printers harder to print from (4, 10) Take away storage space for paper (4)
R1 Rethink	Ceramic cups instead of paper cups in smaller locations (4)		Choose modular designed furniture to maximize usage (4)	Reusable package for office supplies instead of single use (3)	Mobility budget instead of lease park (2) More shared cars in mobility plan (12)	Reusable package for office supplies instead of single use (3) Ceramic cups instead of paper cups in smaller locations (4)
R2 Reduce	Offer food without plastics and ask suppliers to do that too (2, 4, 7, 11, 12) Offer limited amount of food (3, 7, 8, 11)	Ask cloud contractor to monitor local storage surpluses (7) Ask if hardware can be shipped by train instead of plane (11)		Print paper double sided on default (3) Promote printing two pages on one side (3)		Print paper double sided on default (3) Promote printing two pages on one side (3) Offer food without plastics and ask suppliers to do that too (2, 4, 7, 11, 12) Offer limited amount of food (3, 7, 8, 11)
R3 Reuse	Rental of water filter points (1) <i>Rental of coffee/tea machines (1, 5, 9)</i> Reuse of catering leftovers the next day (1, 7) Awareness campaign to use paper cups more than once (4)	<i>Hardware is wiped by specialized firm and then donated/resold (2, 4, 9)</i> Supplier take-back agreement (4) Lease agreement for laptops (12) Take back agreement of packaging materials of electronic items and demand that suppliers discard it themselves in a responsible way (6)	<i>Sell/donate old furniture (2, 3, 4, 9, 11)</i> Buy/trade secondhand furniture (2, 3, 11) Establish take back agreement for packaging materials and demand that suppliers discard it themselves in a responsible way (1) Establish supplier take-back agreement (3, 5, 8, 12) Establish renting agreement ( 3, 9)	Establish take back agreement for wooden pallets (12)	Establish a rental agreement for cars (e.g. lease) (5) Establish a rental agreement for bicycles (e.g. lease) (12) Establish a take in agreement for old bicycles (12)	Reuse of catering leftovers the next day (1, 7) Take back agreement of packaging materials of electronic items and demand that suppliers discard it themselves in a responsible way (6) Establish take back agreement for packaging materials and demand that suppliers discard it themselves in a responsible way (1) Establish take back agreement for wooden pallets (12) Awareness campaign to use paper cups more than once (4)
R4 Repair	<i>Rental of coffee/tea machines (1, 5, 9)</i>	Supplier take-back agreement (4) Lease agreement for laptops (12) Take back agreement of packaging materials of electronic items and demand that suppliers discard it themselves in a responsible way (6)	Establish take back agreement for packaging materials and demand that suppliers discard it themselves in a responsible way (1) Establish supplier take-back agreement (3, 5, 8, 12)	Establish take back agreement for wooden pallets (12)	Establish a rental agreement for cars (e.g. lease) (5) Establish a rental agreement for bicycles (e.g. lease) (12)	Reuse of catering leftovers the next day (1, 7) Take back agreement of packaging materials of electronic items and demand that suppliers discard it themselves in a responsible way (6)



			Establish maintenance agreement (4) Establish renting agreement (3, 9)		Establish a take in agreement for old bicycles (12)	Establish take back agreement for packaging materials and demand that suppliers discard it themselves in a responsible way (1) Establish take back agreement for wooden pallets (12)
R5 Refurbish	<i>Rental of coffee/tea machines (1, 5, 9)</i>	Supplier take-back agreement (4) Lease agreement for laptops (12) Take back agreement of packaging materials of electronic items and demand that suppliers discard it themselves in a responsible way (6)	Establish take back agreement for packaging materials and demand that suppliers discard it themselves in a responsible way (1) Pay a firm to refurbish old furniture (1) Establish supplier take-back agreement (3, 5, 8, 12) Establish renting agreement (3, 9) Buy refurbished furniture (11)	Establish take back agreement for wooden pallets (12)	Establish a rental agreement for cars (e.g. lease) (5) Establish a rental agreement for bicycles (e.g. lease) (12) Establish a take in agreement for old bicycles (12)	Pay a firm to refurbish old furniture (1) Reuse of catering leftovers the next day (1, 7) Take back agreement of packaging materials of electronic items and demand that suppliers discard it themselves in a responsible way (6) Establish take back agreement for packaging materials and demand that suppliers discard it themselves in a responsible way (1) Establish take back agreement for wooden pallets (12)
R6 Remanufacture	<i>Rental of coffee/tea machines (1, 5, 9)</i>	Supplier take-back agreement (4) Lease agreement for laptops (12) Take back agreement of packaging materials of electronic items and demand that suppliers discard it themselves in a responsible way (6)	Establish take back agreement for packaging materials and demand that suppliers discard it themselves in a responsible way (1) Establish supplier take-back agreement (3, 5, 8, 12) Establish renting agreement (3, 9)	Establish take back agreement for wooden pallets (12)	Establish a rental agreement for cars (e.g. lease) (5) Establish a rental agreement for bicycles (e.g. lease) (12) Establish a take in agreement for old bicycles (12)	Reuse of catering leftovers the next day (1, 7) Take back agreement of packaging materials of electronic items and demand that suppliers discard it themselves in a responsible way (6) Establish take back agreement for packaging materials and demand that suppliers discard it themselves in a responsible way (1) Establish take back agreement for wooden pallets (12)
R7 Repurpose	Orange peels as basis for cleaning products (12)					Orange peels as basis for cleaning products (12)
R8 Recycle	Paper cups into toilet paper (4, 5, 6, 7, 11, 12) Coffee remainders into cultivating ground for oyster mushrooms (8, 10, 12)		Recycle old marketing canvases into bags (12) Ask if furniture is completely recyclable after use (10) Pay a firm to recycle old furniture (1) Buy new furniture from recycled materials (4, 8) Ask supplier to use recycled cardboard packaging (6)			Recycle old marketing canvases into bags (12) Increase separation streams (3, 8) Hire trained waste separators (6, 10) Place clear signing near bins (7) Plastic (1, 2, 5, 6, 7, 8, 9, 11, 12) Glass (1, 2, 3, 4, 5) (Confidential) paper (2, 3, 5, 6, 7, 9, 10, 11) Wood (3) Small toxic waste (3, 7, 9, 10) Coffee cups into toilet paper (4, 5, 6, 7, 11, 12) Metals (5) Organic (2, 6, 7, 9, 10, 11, 12) Coffee (8, 10, 12)
R9 Recover						<i>Residual waste (1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12)</i>

Note. The numbers in brackets refer to the case numbers of the firms.

#### 4.1.2 Circularity strategy analysis

The first finding to be discussed is that some practices belong to traditional procurement practices and are not intentionally focused on circular procurement. This was found in case 9. Case 9 has no intention to do circular procurement and practises traditional procurement. Therefore, these procurement practices are classified as traditional procurement and marked in *italic font* in the table. These will not be taken into account in further analyses as circular procurement. These practices are: *sell/donate old furniture or electronic items, establishing a renting agreement for furniture or coffee/tea machines, and recovering energy from residual waste: "furniture has gone to a buyer, so not thrown away."* (case 9). Case 12 underlines the finding that this is relatively standard and not innovative in the procurement of furniture: *"this is fairly standard for that kind of facility services."*

Based on the data in table 7, table 8 is composed. It depicts that cases 1, 2, 3, 4, 6, 7, 8, 10, 11, and 12 are successful in implementing circular private procurement, and cases 5 and 9 are not. The successful cases all implemented at least one high circularity strategy. The unsuccessful cases did not implement a high circularity strategy. Case 5 implemented medium and lower circularity strategies, and case 9 did not implement a circularity strategy at all. Both unsuccessful cases have in common that no structurally established efforts regarding circular private procurement could be identified in the data, where it could be for the successful cases. Another aspect case 5 and 9 have in common is that the interviewees in both cases are sympathetic to the idea of circular private procurement. When looking at the interview data of case 5, it becomes clear that the interviewee found a way to use an existing organisational process to achieve it. However, as the results show, this organisational process alone is not sufficient to achieve a high circularity strategy. The interview data of case 9 shows that the interviewee of case 9 believes that an idea such as circular private procurement needs to be communicated top-down and that top-management should support it because otherwise, their organisational processes will not change: *"It must come from the higher management. It is not that we, procurement, are not open to it (circular procurement). We see the point of it. Still, in the end, we have merely a supporting role: we ensure that contract management is in order. The decision to buy remains with the business department. Their priority is given to costs or time pressure, but circularity is usually not included. I do not recall that the business has said: we find that so important that it becomes a priority."* Because of this belief and since no structurally established efforts are made to implement it, circular private procurement remains absent in case 9. In case 9, no existing processes are used to achieve circular private procurement. The different ways of dealing with organisational processes and identifying possibilities by employees in an organisation that makes no structurally established efforts regarding circular private procurement seem to influence the level of unsuccessfulness of circular private procurement implementation.

**Table 8**

*Successful Implementation of Circular Private Procurement per Case*

Circularity strategy / Successfulness	Successful	Unsuccessful
R0-2	Case 1, 2, 3, 4, 6, 7, 8, 10, 11, and 12	-
R3-9	-	Case 5
No R	-	Case 9

## 4.2 Procurement process analysis

In this subsection, the concepts that regard the circular private procurement process in the cases are discussed, and the difficulties and future of circular private procurement as identified by the cases are explained.

### 4.2.1 Circular private procurement process expressions

This section describes how circular private procurement is expressed in the four stages of the procurement process. This is summarised in figure 7.

#### 1. Preparation stage

- 1.1. Educate employees on how to define their problem correctly: *“At the beginning of this year, we started holding roadshows at those locations to tell those ambitions and plans, initially to employees of facility management, HR, IT and procurement, because they are in the driving seat in terms of business operations.”* (case 11). Case 8 already puts functional questioning into practice: *“I asked if the interactive branch wanted to determine the design, purely functional. These functional requirements were given to the architect, instead of having the architect devise a complete vision.”*. In some product categories such as software support, it is already common to define the specific functional requirements that are necessary to procure a service/quality. This could also be applied to other product categories.
- 1.2. Ensure that a circularity or sustainability expert is involved in the demand inventory and selection. This can be an internal expert (team) such as a Corporate Social Responsibility team, or an external expert: *“Then procurement is involved. They determine which questions the business department wants to ask about costs and durability. Thereafter I will be consulted about the specific sustainability questions.”* (case 12).

#### 2. Criteria specification stage

- 2.1. State in your requirements that a continuous conversation on circularity improvements with the supplier is a must: *“That you are in any case continuously in discussion with the supplier to be able to steer on what you have agreed, so you can include that in your KPIs to keep control.”* (case 7)

- 2.2. Be prepared to pay a little more for a circular option within the budget instead of using the cheapest option: *“Sustainability comes at a price. It is generally a bit more expensive. If we say that we do not want to increase the price, but we request sustainability, then we are asking something that is not possible.”* (case 1). Adjust your distribution key accordingly: *“If you are talking about an allocation key: price, quality, delivery guarantee or durability then it is not the case that the greatest value is attributed to that aspect (circularity), let me say that. We never go for the cheapest anyway, let me put that first, so it is more a combination. Suppose you have these four elements, then it will count for about a quarter.”* (case 10). In case 11, the allocation key is 50% sustainability and 50% price: *“I think sustainability counts for 50% when choosing because the price is still very decisive for the final decision. We do not go for the cheapest, so it usually becomes a compromise.”* It is clear that price and functionality are still prominent factors in the decision matrix, but that circularity and sustainability are gaining gravitas. A specially allocated circularity fund could help to reduce the element of price and to expand the factor of circularity.
- 2.3. Include a statement of circularity in the program requirements: expressly indicate that the organisation strives for circularity and ask what the offering party can do to contribute to this: *“We explicitly state that we strive for circularity and that we also want to see this reflected in the offers from the suppliers. We ask for evidence of this: there are no specific requirements (i.e. certifications) to meet, but it should be very clearly agreed and recorded that there is a proven effort in the field of circularity policy.”* (case 10). Case 11 states: *“If you do not ask the supplier, then [such an] option would probably never have come into the picture. Suppliers can often do more than you ask for in the Request For Proposal as standard, but if you do not ask for it, you receive what is normal for them.”* Several cases appreciate certificates, but do not require them. If suppliers can show their contribution in another way, this is also welcomed, especially company visits. Only case 8 specifically requires certificates.
- 2.4. Ask specific questions per product (category): *“We ask for [...] various sustainability aspects. Depends on the service we are looking for exactly.”* (case 3). Case 7 indicates that easy circularity aspects should be included as a requirement, while more difficult aspects could be a wish: *“I think you should try as much as possible to require aspects that are easy to achieve in sustainability. Aspects that may not yet be easy to achieve could be stated as a wish, and will be directed towards it.”* (case 7). For product-specific requirement examples, see table 7.

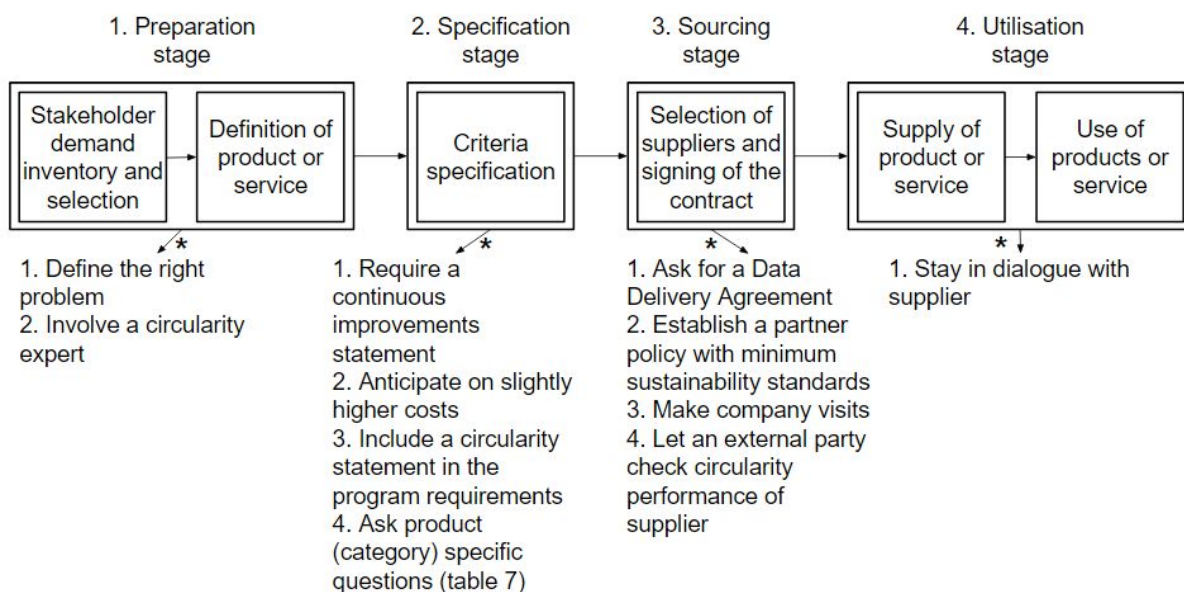
### 3. Sourcing stage

- 3.1. Ask suppliers to sign a Data Delivery Agreement: *“Yes, we have a Data Delivery Agreement from the number of paper sheets or the number of cups. We have that because it is the source information that is the basis of the CO<sub>2</sub> footprint calculation. I asked the selling party, and they just had it available. We are currently working on concluding a Data Delivery Agreement with all our parties to provide this type of information. Either by entering it into the contract or adding it to the existing contract as a supplement, with which we can determine the quality, quantity, planning, and auditability of our products. We do this so our accountant can verify the calculated CO<sub>2</sub> emissions based on the source data from the supplier.”* (case 11).

- 3.2. Set a minimum for sustainability standards and establish this in a supplier or partner policy: *“We have a supplier policy stating which conditions a valid offer must meet. Sustainability is, among other things, a condition.”* (case 10) and *“That is the business partner due diligence I was talking about. We ask questions, for example about their Corporate Social Responsibility policy.”* (case 2).
- 3.3. Make company visits to validate the circularity claims: *“Besides requesting price and quality and all kinds of other functionalities company visits are important. During such a visit, we zoom in on how their processes are actually Corporate Social Responsible. Then you quickly realise whether it is trustworthy or just a nice story.”* (case 2).
- 3.4. Have an external party check the sustainability/circularity in detail after they signed the contract: *“In that case, it is the intention from our policy and process description that the supplier who ultimately signed a contract, also provides insights into the sustainability performance they achieve. They do this by registering with [external firm]. What we consider important is that a company is questioned on sustainability aspects based on what is relevant to that company. In demonstrability, this is done by [external firm]. It also indicates where they can improve”* (case 6).
- 4. Utilisation stage**
- 4.1. Stay in continuous dialogue with business partners to achieve circularity goals: *“We give feedback on their (catering) plastic usage.”* (case 4). Case 3 is in continuous debate with their waste processor: *“Is it smart to increase the number of separated waste streams or is the amount too small? How many trucks have to come here, and is it possible to decrease the frequency of waste collection? How much extra space is needed to store waste if we decrease the frequency?”*

**Figure 7**

Characteristics of the Circular Private Procurement Process



Note. Addition of Circular Private Procurement Characteristics (\*) based on case interviews by Ieke Bak to the Procurement Process by UNEP (2014).

#### 4.2.2 Difficulties in circular private procurement

This section describes the seven main difficulties in circular private procurement that could be identified in the interview data. The last paragraph takes a closer look at the difficulties encountered by the unsuccessful cases 5 and 9 and compares them to the difficulties encountered by the successful cases.

First, it is perceived to be difficult to ask the right questions when a soft facility management need arises in the company: *“The most difficult thing is that you have to ask the user whether they need the product: you have to be critical of the questioner. They often come up with the solution and not with the problem/question.”* (case 3). In multiple cases in this study, procurers in the procurement unit deal with the demands coming from other departments. Case 12 adds to this that *“It is difficult for our fairly small procurement unit because they already need to know everything about the portfolio they are responsible for and then they also need to learn the specifics on what are the sustainability questions here.”*

Furthermore, procurement in many cases is still by default focused on the lowest price which makes circular private procurement more challenging to do structurally: *“The procurement department has long been directed to bring in as much as possible at the lowest possible price. So their whole thinking is about: can it be cheaper? That is why they do not automatically look at: can it perhaps be more circular? Because they do not do that themselves and are not managed that way, it is still quite difficult to get things done differently.”* (case 12).

Then the internal validation of the business case of circularity is viewed as a difficulty: *“We are still investigating how to provide insight in a businesslike way so that procurement can take this into account in its considerations.”* (case 2).

Finding a support base within the organisation is also tricky, especially when the circular measure depends on human behaviour like waste separation: *“Support within an organisation is sometimes difficult, because of the 400 people, 200 can really be mega enthusiastic, and another group will not care, so they are not involved at all with separating waste, so they throw plastic in the grey container or something: sometimes consciously or unconsciously. That is still difficult because you cannot force someone to do something. However, sometimes you are ambitious in something yourself, and then it does not find support.”* (case 1). Case 7 also finds this: *“Yet you will see that people are quickly inclined to deposit it elsewhere. That is personal and difficult to control.”*

Another difficulty that is shared by case 1, 3, and 11 is that of the trustworthiness of the circular story of the suppliers. They find that it is sometimes hard to verify if a company is genuinely circular based on certificates or a story: *“Trust is a vital thing. That what a supplier conveys must also become a reality: they must keep their sustainable promise after we procure something from them.”* (case 1).

Next to this, the time of investment is indicated to be a difficulty concerning circular private procurement: *“If you want to invest in sustainability, the question is how long that technology will be considered sustainable. Anything new can come onto the market [...] Surely that is the risk.”* (case 8). Circularity projects can come too early: *“It was not yet possible. If I say this now, there will undoubtedly be ten interested parties who say that it is possible, but that process has expired.”* (case 11).

Also, electronic items are seen as a difficult product category in terms of circularity because the suppliers are such large entities compared to the procuring organisations: *“The ICT question is regularly asked about, and everyone is puzzled about this by the dynamics of the market and the types of parties that are active in it. As an individual procurer, you do not have much to say, so that*

*must be stimulated more collectively to make them more transparent and do more to improve [circularity].”* (case 6).

The main difficulties mentioned by the unsuccessful cases 5 and 9 regards monetising circularity. Case 9 mentions that the focus on lowest costs by the business departments forms a difficulty for implementing circular procurement: *“The hardest part is getting the business departments to be open to it (circularity). Internally, costs are very much controlled, and I notice that this is more important than circularity.”* (case 9). Case 5 marks the validation of the business case of circularity as difficult: *“On the one hand, you have the ideology of the whole and on the other the costs. You have to find a balance, and that is a difficult story. I wish all those people who shout very loudly about circularity would also tell me how to solve such a problem?”* (case 5). When compared to the difficulties encountered by successful cases, it is clear that more specific difficulties occur too. Although monetising circularity remains an issue, more detailed issues are mentioned by the successful cases. This could be explained by the fact that these cases have experience with successful circular procurement. Thus, the monetising circularity difficulties could be identified as ‘startup’ difficulties (which remain difficult later on). The other difficulties become known later in the process of implementing circular private procurement.

#### **4.2.3 The future of circular private procurement**

It is represented in the cases that circularity and sustainability are believed to become an increasingly important part of an organisation’s internal operations. Case 1 mentions, for example: *“There is no way back. So sustainability/circularity is playing an increasingly prominent role: you have more to explain if you do not do it than if you do. At the moment you have to justify if you do it because not doing it is still the norm and doing it is a bonus. But soon, it will be the other way around.”*. Organisations that are already anticipating this will build a relevant experience that could deliver a competitive advantage over organisations that do not do this. Cases are also convinced that circularity will become an important integrated part of the procurement process: *“It will become an increasingly important aspect of procurement policy.”* (case 10) and *“Bluntly: this [circularity] will be an important criterium in the considerations.”* (case 2). Case 11 and 12 highlight that the role of procurement in larger organisations will alter in the sense that procurement has had a passive, supportive role but will become more active and knowledgeable in guiding the procurement towards a circular procurement: *“I think the future for procurement is that they will play a role in procurement process themselves: in setting the right criteria and in assessing the right offer.”* (case 11). Case 12 adds to that: *“So then they [the procurement department] are going to develop that curiosity themselves to ask the right questions, but they must be taught that and that is what the training is for.”*

The main reason why the interviewees think that circularity will become important is that the public opinion is shifting towards a higher appreciation of circular business operations. Case 2 illustrates this: *“when you talk about the future, I am convinced that this is going to happen for the simple reason that more and more people consider it important.”*. Who finds this important? Case 1 and 10 mention that it is the younger generations who will work at the organisations that will make future (procurement) decisions: *“The much more conscious generation that is coming and which will soon be in charge.”* (case 1) and *“the awareness of young people who come here will lead to sustainable procurement.”* (case 10). Case 1 adds that future customers will prefer more circular organisations to buy their products/services from: *“At a certain moment, consumers will determine their choice based on that criterium: how good are you for the planet we live on.”*. Consumers have that choice now because an increasing number of organisations are implementing it. Case 3 puts it

like this: *“You take yourself out of the market. You are no longer credible if you do not look at it (circularity) in the future. You must also show your customers/municipalities how you deal with sustainability in all kinds of areas, including procurement, our sustainable business operations. So you put yourself out of the game if you do not go along with it.”*. This quote also shows that governmental organisations (municipalities) are considering circularity. Case 10 and 12 anticipate that governmental regulations will soon monetise environmental impact: *“I think governments are aware of the costs associated with unsustainable products. That bill will definitely come back.”* (case 10).

The main opportunities for circular procurement for soft facility management are identified to be the following. First, talking about circularity and sustainability within the organisation can accelerate the integration into the organisation: *“Talking about it makes a difference, if we would have done that sooner, I think we would have made certain steps sooner.”* (case 4). Second, integrating circularity strategies into a business case so it will be easier for the procurement unit to make decisions: *“Providing insight in a businesslike way so that procuring can take this into account in its considerations.”* (case 2). Monetising environmental impacts in the internal balance and making a financial budget available for circularity investments could help with this: *“What if we pretend that we now have to pay for all that CO<sub>2</sub> storage, and we put that in a budget and with that budget we pay the differences that we can now address if you are a provider of today with low CO<sub>2</sub> emissions compared to high—assuming that high CO<sub>2</sub> emissions have a lower price. So then you just say: we grant the job to the provider with the lowest CO<sub>2</sub> and that is a bit of a disappointment for the relevant department because they need more budget. Therefore we pay it from that budget so that that department does not have any prejudice of brands and can simply go for lowest CO<sub>2</sub> emissions.”* (case 12). Third, making use of the altered perception of how work is done due to the COVID-19 virus and lockdown. The quarantine showed possibilities that were not accepted before: reducing commuting by working from home, for example: *“COVID-19 has brought about a few things. The lease park is now one-sixth of what it used to be before COVID-19. Flying was a big item for us. We were forced to recognise this, and it's going to make such a big impact, not just working from home/at the office. It will have an impact on mobility and an impact on an acceleration of the shift from the old structure, thus benefiting all sustainability aspects. I have more and more people who say yes, but why did we do it that way? Things that used to be difficult, e.g. until six months ago more than 50% of the bank had never worked at home because we were a traditional environment. Now we had to. We had tested that well in advance, so it went fine and now it appears that the entire bank, 90% of the bank, is fine from home. The effects are enormous. I am going to wind down a lot of real estates, for example. A major cultural change. In that area, I just see a lot of possibilities to invest renewed attention and energy in sustainability.”* (case 2) and *“Suddenly we can also work from home, which is going so well that we will continue to do so in the future, so we need less space.”* (case 5). Although it will be tough to decide how working from home will be accounted for in an organisation's CO<sub>2</sub> footprint for example: *“I have a meeting this afternoon about what our work will look like in the future if we work more from home and travel less. That also affects CO<sub>2</sub> footprint: to what extent are we going to include them. Until now, we have not done that because it was complicated to make that demarcation. If someone works at home, whether the heating was already on because someone else was already there or because someone was already home or was that not the case? That is very difficult, but you could perhaps assign some value to it with key figures. Still, I also know that if you compare the energy consumption of working from home against the CO<sub>2</sub> of mobility in order not to come to the office that day, then that home energy consumption is nothing*



*compared to the CO<sub>2</sub> emissions of mobility. Suppose you go by car, that is the opposite. Effects like this have been identified, but not yet quantified.”* (case 11).

### **4.3 Preconditions results**

In this subsection, the reasoning for assessing the preconditions as ‘green’, ‘yellow’, or ‘red’ is given and then the overall results of the cases (table 9) are discussed.

#### **4.3.1 Precondition assessment**

The first part of the subsection expands on the assessment of the four preconditions.

##### **4.3.1.1 Circular economy strategy formulation.**

Cases 1, 2, 3, 4, 6, 7, 8, 11, and 12 are assessed as green because strategy and goals are formulated for these cases that refer to waste reduction or circular business operations. The strategy formulation in circular private procurement is present: *“Strategy has ensured that we only buy second hand or used materials.”* (case 11) and *“our goal is to achieve 100% circular procurement”* (case 6). CO<sub>2</sub> footprint is often mentioned as an indicator for circularity: *“We have no targets for kilogrammes, but we translate kilogrammes of waste into CO<sub>2</sub> emissions. You can account for the produced waste with CO<sub>2</sub> emissions, and we have agreed that that is what we will measure.”* (case 12). Also, waste reduction is mentioned as a strategy or target: *“The goal is to minimise the waste streams”* (case 4). *“We want to be waste-free in 2025.”* (case 1) together with waste separation: *“Our initial target was to reach 85% [of recyclable waste] in 2019.”* (case 11). Next to this, also product category-specific goals or strategies exist. For example for transport: *“The ambition we have is to see whether we can dispose of the entire lease park”* (case 2) and paper: *“We wanted to go to a paperless office.”* (case 4).

Case 10 is assessed as yellow because no targets or strategy is formulated, but it is being worked on: *“Without a dot on the horizon, the policy is already to keep the environmental impact as low as possible, but we have not set any targets.”*

Cases 5 and 9 are assessed as red because no circularity strategy or goals have been formulated: *“No official targets exist, this is a bit of my personal hobby.”* (case 5) and *“It is not part of the strategic plan they present to the [head office]. There is no target to reduce waste.”* (case 9).

##### **4.3.1.2 Top-management support.**

Cases 1, 2, 3, 4, 6, 8, and 12 are assessed as green because top-management supports circular procurement officially. It is represented in the case interviews. Some examples are: *“It is carried top-down, and there is a very explicit wish from the organisation [...] to include sustainable impact in our decision.”* (case 1), *“The executive board said: ‘that is very important to us, and we will manage it.’”* (case 2), *“That is straight from the top of our organisation, our Chief Financial Officer did that.”* (case 4), and *“yes there is a lot of attention from the top-management.”* (case 6).

Cases 5, 7, 10, and 11 are assessed as yellow because top-management allows circular procurement, but does not officially support it. In case 5, a recent switch in top-management illustrates how supportive management can contribute to circular private procurement: *“Until recently, we even bought all cars. It took a lot of effort to convert it into lease cars. Since last year, we have a new Chief Financial Officer, with whom I can also achieve things like that more smoothly. But before that, it was a complicated struggle.”* Case 10 illustrates that a leading department can

also reason with management to get something done instead of the other way around: *“We have given more concrete form to the supplier's policy. Not so much inspired by the management but from the professional practice of facilities. We noticed that this would become an increasingly important part of the operational management, and the management agreed to this.”*. A complementary argument comes from case 11 where management can be a delaying factor: *“It must be a topic that is also on the agenda in the boardroom. Not only on the agenda, but there must be support on the board of directors or at the highest level of the organisation. There has to be someone who wants to go for that intrinsically: who is involved in it. [...] We don't always see that.”*

Case 9 is assessed as red because top-management discourages circular procurement by focusing on lowest costs: *“It could best be incorporated if the higher management would say so. [...] Currently, priority is given to costs or time pressure.”*

#### **4.3.1.3 Building skills and knowledge.**

Cases 1, 2, 3, 4, 6, 7, 8, 10, 11, and 12 are assessed as green because the organisations provide training on circular procurement. Some cases choose for external parties to provide expertise and training: *“To achieve the halving of the ecological footprint compared to 2018 and what this entails and which business units should play a role in this, I hired two self-employed circularity experts. They proposed many things, including that the buyers should receive specific training.”* (case 12) and so they did: *“The procurement unit will soon follow an intensive 4-day training from [the procurement association].”* (case 12). Case 10 illustrates this too: *“[The procurers] are introduced to this within the trade association (association of insurers)”*. But cases also internally develop knowledge and skills on circular economy principles. In case 10, a platform and facilities are set up for the young employees to discuss and implement sustainability issues: *“Young people are quite involved in the organisation. They propose ideas in the field of sustainability and have received a platform and facilities for this from the board. You see that young people manifest themselves quite well in that area.”* (case 10). In case 11, roadshows throughout different locations inform employees about their strategy and plans for a circular economy: *“We started holding roadshows at those locations to tell those ambitious plans. Initially, they were directed at employees of facility management, Human Resources, Information Technology and procurement, because they are in the driving seat in terms of business operations.”* and *“In the coming years, we will continue to reach those other employees through roadshows or via the internet: they will all be involved. [...] You can't do it alone, you need the behaviour of employees to make it happen.”* (case 11). In case 4, they ensure knowledge and skills for a circular economy during the introduction of new employees: *“These things are embedded in our code of conduct, and I discuss them with new employees as do our board members with every new employee.”* (case 4).

Case 5 is assessed as yellow because skills and knowledge development is present, but it is based on personal interest, not on a structural basis: it is not mandatory for the position for the organisation. The interviewee in case 5 states: *“This (circularity) is my personal hobby.”*

Case 9 is assessed as red because no knowledge development on circular principles is present: *“The decision to buy still rests with the business unit. [...] Priority is given to costs or time pressure, but circularity and that sort of thing are usually not included.”* and *“We have considered doing it (sustainably), but facilities put more pressure on price and things like that than specifications about sustainability.”*

#### 4.3.1.4 Organisational processes to support circular procurement.

Cases 1, 2, 3, 4, 6, 7, 8, 10, 11, and 12 are assessed as green because structural efforts are made to enable circular procurement. Various organisational processes can be distinguished. Several cases have a process that enables external parties to help with their circularity ambitions on circular procurement. Case 1 for example, just started using an external software package which allows for calculations of CO<sub>2</sub> footprint and circularity efforts: *“What that does, you convert your efforts into figures, also concerning your CO<sub>2</sub> footprint and the like. They calculate that, and then you can make a measurement over time.”*. Also, the availability of a financial fund is mentioned for when a higher circularity option costs more than a lower circularity or not at all circular option. Case 1 solved it the following way: *“There is a budget for that. It is not part of the Corporate Social Responsibility team but of facilities. You put that on a booking code [...], and then it is booked on the total budget so that you can trace back where that money went.”*. Case 11 provides an example of this too: *“We are CO<sub>2</sub> pricing everything internally to join forces. This happens in terms of organising as an internal fund where we put € 100,- in a budget for every tonne of CO<sub>2</sub> emitted. We will use that budget for additional investments in sustainability. Then you make it visible: you earmark that money. Then you also show that you are using that money from that fund for further sustainability so that it has kind of a flywheel effect.”*. Furthermore, the actual involvement of the Corporate Social Responsibility department in circular procurement is also a process that is acknowledged in the cases: *“An important distinction is that we involve our sustainability department in such tenders and that we ask them to participate in the assessment.”* (case 6). Another process that is mentioned by merely one case is that of the creation of a quantitative physical database in which the amount of bought kilogrammes are registered so they can be verified when calculating the company’s CO<sub>2</sub> footprint: *“Yes we have a Data Delivery Agreement from the number of paper sheets or the number of cups. We have that because it is the source information that is the basis of the CO<sub>2</sub> footprint calculation. I asked the selling party, and they just had it available. We are currently working on concluding the Data Delivery Agreement with all our parties to provide this type of information. We are doing this either by entering it into the contract or adding it to the existing contract as a supplement, with which we can determine the quality, quantity, planning, and auditability of our products. We do this so our accountant can verify the calculated CO<sub>2</sub> emissions based on the source data from the supplier.”* (case 11).

Cases 5 is assessed as yellow because circular procurement is allowed but not standardised. In case 5, *“No business targets exist.”*. However, an organisational process does exist that enables the interviewee to work on circular private procurement: *“I have set [circular procurement] in my personal targets, and that has been approved so I can work on that.”* (case 5).

Case 9 is assessed as red because no purposeful efforts are made to enable circular procurement: *“The hardest part is getting the business to be open to it. Internally, costs are very much controlled, and you notice that this is more important than sustainable.”*.

#### 4.3.2 Precondition analysis

From table 9, it becomes evident that in cases 1, 2, 3, 4, 6, 8 and 12, all preconditions are assessed as structurally established. Case 7, 10, and 11 have in common that the preconditions building skills and knowledge and organisational processes are structurally established (green), and the precondition top-management support is established, but not structurally (yellow). However, case 10 differs from case 7 and 11 on the precondition of circular economy strategy: in case 10 it is

not structurally established (yellow) while it is in case 7 and 11 (green). In case 5, the three preconditions: top-management support, building skills and knowledge, and organisational processes are established but not on a structural basis (yellow). In this case, strategy formulation is not established (red). In case 9, none of the preconditions has been established (red).

**Table 9***Assessment of Preconditions per Case*

Preconditions/ Case	1	2	3	4	5	6	7	8	9	10	11	12
Circular economy strategy formulation	Green	Green	Green	Green	Red	Green	Green	Green	Red	Yellow	Green	Green
Top-management support	Green	Green	Green	Green	Yellow	Green	Yellow	Green	Red	Yellow	Yellow	Green
Building skills and knowledge about circular principles	Green	Green	Green	Green	Yellow	Green	Green	Green	Red	Green	Green	Green
Organisational processes to support circular procurement	Green	Green	Green	Green	Yellow	Green	Green	Green	Red	Green	Green	Green

*Note.* In numerical order. Green: structurally established. Yellow: established but not structurally. Red: not established.

#### 4.4 Precondition successfulness analysis

Based on the results from the circularity strategy analysis (table 8) and the precondition analysis (table 9), the results of the precondition successfulness analysis are the following (see table 10). Cases 1, 2, 3, 4, 6, 7, 8, 10, 11, and 12 are successful in implementing circular private procurement, and all preconditions are established: either structurally or not. Case 9 is unsuccessful, and all preconditions are not established. Case 5, however, is unsuccessful in implementing circular private procurement as it does not incorporate a higher circularity strategy. The precondition circular economy strategy is not established (*"No business targets exist."*) while the other preconditions are established, though not structurally. When taking a closer look at case 5, it can be acknowledged that personal ambition plays a large role in this case. In case 5, the company shows no intention to do circular procurement but does practise it. This can be explained by an organisational process that allows employees to set personal goals and work on them. In case 5, the interviewee set circular procurement as a personal goal which has been approved by the organisation: *"I have set [circular procurement] in my personal targets, and that has been approved so you can work on that."* However, when the person that is responsible for the circular private procurement via its personal targets leaves the company, the other preconditions are likely to become unestablished because they are not structurally established within the company. This also is important to notice in case 7, 10 and 11 where some preconditions are established but not yet structurally.

**Table 10**  
*Assessment Precondition Successfulness Relation*

<b>Preconditions/ Case</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>6</b>	<b>8</b>	<b>12</b>	<b>7</b>	<b>11</b>	<b>10</b>	<b>5</b>	<b>9</b>
Circular economy strategy formulation	Green	Green	Green	Green	Green	Green	Green	Green	Green	Yellow	Red	Red
Top-management support	Green	Green	Green	Green	Green	Green	Green	Yellow	Yellow	Yellow	Yellow	Red
Building skills and knowledge about circular principles	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Yellow	Red
Organisational processes to support circular procurement	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Yellow	Red
<b>Successfulness of circular private procurement implementation</b>	R0-2	R0-2	R0-2	R0-2	R0-2	R0-2	R0-2	R0-2	R0-2	R0-2	R3-9	No R

*Note.* In order of the colour sequence green-yellow-red.

## 5 Discussion and recommendations

This section discusses the findings in comparison with existing literature, the significance of the results for private organisations and provides managerial implications. Last, recommendations for further research are provided.

### 5.1 Contribution to literature

This study aimed to expand the body of knowledge on circular procurement. It focused on the applicability of theories on circular public procurement to circular private procurement. The study on circular public procurement that was researched on how it would apply to circular private procurement is that of Sönnichsen and Clement (2020). Their research suggests that the four preconditions strategy formulation, top-management support, skills and knowledge, and organisational support are crucial factors to establish the implementation of circular public procurement successfully. The findings of this research on circular private procurement largely correspond to the findings of Sönnichsen and Clement on circular public procurement (2020). This is shown by the successful cases 1, 2, 3, 4, 6, 7, 8, 10, 11, and 12 in which all preconditions are established: either structurally or not. Also, unsuccessful case 9 is in line with their theory: no preconditions are established. Case 5 is unsuccessful in implementing circular private procurement as it does not incorporate a higher circularity strategy. The precondition circular economy strategy is not established while the other preconditions are established, though not structurally. This is also in accordance with Sönnichsen and Clement's study that all preconditions must be met in order to implement circular procurement successfully. A new insight from this study is that it seems that in order to implement higher circularity strategies through procurement, the precondition strategy formulation must be established. Case 5 illustrates this. Since higher circularity strategies contribute more to a circular economy, it is key to ensure their implementation. This outcome can help in that attempt.

This study also aimed to create more insight into and examples of circular private procurement because the GDCP states that communicating on initiatives and examples is essential to lower the bar of switching from traditional procurement to circular procurement (MVO Nederland, 2020). It contributed to the body of knowledge on circular private procurement for soft facility management in the Dutch financial sector by generating an overview of the current state. This overview is based on three concepts: (1) applied circularity strategies; (2) characteristics of circular private procurement; and (3) preconditions for circular private procurement. The overview in table 7 and the case-specific descriptions provide examples of circular private procurement in the Dutch financial sector regarding soft facility management. The overview in figure 7 shows how the procurement process is currently adapted for circular procurement by the cases of this study. Finally, it is discussed to what extent preconditions are present at the moment and how they are expressed.

### 5.2 Significance for private organisations

The results of the precondition analysis imply that when private organisations want to implement circular private procurement successfully, they need to establish all four preconditions. The research also showed that establishing the precondition strategy formulation can make a difference in the implementation from merely lower and medium circularity strategies to higher circularity strategies.

The results of the procurement process show that in all stages of the procurement process opportunities arise to incorporate circular private procurement. This corresponds to the statement of SSP Regions (2017) about circular public procurement. The results show that especially in the specification stage and sourcing stage, more opportunities are being expressed in the selected cases. The possibilities for circular private procurement in the different stages of the procurement process for soft facility management in the Dutch financial sector can serve as a guide or as examples of how circular private procurement can be incorporated into a private organisation.

The circularity strategies list in table 7 is not exhaustive, since other cases outside the scope of this research could apply circularity strategies in a different way. This overview can serve as an inspiration source for firms that want to do more circular procurement for soft facility management. The provided examples can be implemented, and empty areas in the table could be attempted to complete: inspiration could be gotten from the other product categories that already have examples in a similar level of circularity strategy. The product categories electronic items and office furniture have the least high circularity strategies. For instance, choosing modular designed furniture to maximise usage could also be applied to electronic items: choose modular designed hardware.

Based on the outcomes of this study, a checklist for private organisations that want to improve its implementation of circular private procurement could be composed. The more checklist questions can be answered positively, the more a private organisation is on its way to implement circular private procurement successfully. Where questions are answered negatively, the question itself indicates the way to improvements. Furthermore, subsections 4.1, 4.2, and 4.3, and appendix B can be consulted for examples. The checklist comprises the following questions:

- Are the four preconditions for successfully implementing circular private procurement established? It would be sensible to establish the precondition strategy formulation as this appeared to be an important factor in applying higher circularity strategies, thus in being successful at implementing circular private procurement.
  - Strategy formulation:** Is an official goal and strategy about circularity formulated? For example 'our company will be 100% circular by 2050'. Ensure that this strategy is also translated into procurement specific for goals.
  - Top-management support:** Is someone with a top-management position responsible for circularity and do they care about it intrinsically?
  - Skills and knowledge development:** Are internal knowledge and skills about circular economy principles and circular procurement developed and shared with employees that are involved in the procurement process? Internal parties as well as external parties, can provide this.
  - Organisational processes to support it:** Are organisational processes and function responsibilities revised and adjusted so that the (knowledge) infrastructure within the company is in line with the new circularity strategy?
- Does each stage of the procurement process entail circular private procurement characteristics?
  - Stage 1, preparation**
    - Is the right problem defined?
    - Is an internal or external circularity expert involved?
  - Stage 2, specification**
    - Is a continuous improvement statement required?
    - Are slightly higher costs anticipated?



- Is a circularity statement included in the program requirements?
- Are product (category) specific questions asked (table 7)?
- Stage 3, sourcing**
  - Has been asked about a Data Delivery Agreement?
  - Does a partner policy exist that includes minimum sustainability standards?
  - Are company visits part of the evaluation?
  - Does an external party check the circularity performance?
- Stage 4, utilisation**
  - Does a continuous dialogue with the supplier exist?
- Are high-level circularity strategies identified for each product category? These can be identified through brainstorm sessions based on tables such as table 7 in this research. This table shows for which product category high circularity strategies are not yet applied and thus, what topics are in need of brainstorming. The applied high circularity strategies for other product categories in this table can serve as inspiration and input for the brainstorm sessions.

### 5.3 Quality of the conducted research

The reliability of the study is established because all planned methodological steps could be conducted. Due to the alternative outcomes of case 5 and 9, theoretical replications could be used which allows for better establishing the circumstances in which theory will or will not hold (Eisenhardt 1989; Yin, 2017). Repeating the research, perhaps in an almost similar sector, and comparing the results could enhance the reliability of this study. The internal validity was constructed well in this study because the reporting of the evidence was done in a systematic and clear manner. Data triangulation was applied through the use of semi-structured interviews, and annual (sustainability) reports. The external validity of this study concerns the circular private procurement for soft facility management in the Dutch financial sector. As mentioned by Vermeulen et al. (2014), private procurement can vary between sectors. Therefore the implications of this study cannot be generalised to other sectors. This study also focuses on the Netherlands, which falls under the European Union. In other areas outside the European Union, different regulations may apply to public and/or private procurement. This could affect the generalisability of the similarities between circular public procurement and circular private procurement that were found in this study. Next to this, the replication logic was practised in this study and both literal replications (cases 1, 2, 3, 4, 6, 7, 8, 10, 11, and 12) and theoretical replications (cases 5 and 9) were used.

### 5.4 Suggestions for further research

From the discussion above, three main suggestions for further research could be identified. First, more research on theoretical replication cases could reveal whether the theory holds up under other circumstances than those that were found in this research. The results of the preconditions analysis show that in most cases in this study, the preconditions are established. Only two cases (5 and 9) showed that preconditions were unestablished. The results of the preconditions successfulness analysis show that ten of the selected cases are successful in implementing circular private procurement. Two cases yielded the result to be unsuccessful in implementing circular private procurement and could therefore serve as theoretical replications. This made it possible to learn more about the circumstances or rather preconditions in which the theory holds or not. In this light, it could be interesting to find more theoretical replications and compare the results with the

results of this study. It would be interesting, for example, to find out if a case in which the precondition skills and knowledge is not established, while the other preconditions are established, is still successful at implementing circular private procurement. Second, further research could reveal if more theories based on public organisations are also applicable to private organisations. By doing so, the body of knowledge on circular procurement can be expanded further. Third, further research could reveal whether the applicability of preconditions for circular public procurement and circular private procurement also holds up in areas outside the European Union. This study focused on the Netherlands, which falls under the European Union. In other areas outside the European Union, different regulations may apply to public and/or private procurement regarding circularity. This could affect the generalisability of the similarities between circular public procurement and circular private procurement.

## 6 Conclusion

This study aimed to expand the body of knowledge on circular procurement by answering the research question: *How do the preconditions of successfully implementing circular public procurement apply to a successful implementation of circular private procurement for soft facility management in the Dutch financial sector?* The four studied preconditions are strategy formulation, top-management support, skills and knowledge, and organisational support. The answer was found in the following results: (1) when all preconditions are (structurally) established, the implementation of circular private procurement is successful, (2) when all the preconditions are unestablished, the implementation of circular private procurement is unsuccessful, and (3) when the precondition strategy formulation is unestablished, circular private procurement with lower impact is achieved. The following conclusions can be drawn from this. First, it is important to establish all the preconditions and at least the precondition strategy formulation. Second, the theory of Sönnichsen and Clement (2020) that was based on public organisations seems to apply in a similar way to private organisations. It appears that the difference in regulation for public and private organisations does not affect this theory in the context of soft facility management for the Dutch financial sector. Third, the transition from a linear to a circular economy could be accelerated when higher circularity strategies become more common through establishing the right preconditions.

Furthermore, it was found that each stage of the procurement process for soft facility management in the Dutch financial sector contains characteristics of circular private procurement. Next to this, the unsuccessful cases mentioned monetising circularity difficulties rather than more specific circularity difficulties (e.g. validating circularity) that become evident in the successful cases. From this, it can be concluded that when high circularity strategies are implemented through procurement, more specific difficulties arise.

Based on these findings and conclusions, implications could be made for private organisations and further research. Three implications for private organisations that want to improve their implementation of circular private procurement are formulated. First, private organisations could establish all four preconditions, of which at least the precondition strategy formulation. Second, they could also incorporate characteristics of circular private procurement into each stage of their existing procurement process. Third, they could brainstorm to identify high circularity strategies for a product (category) of which they are still unidentified. These implications are merged into a checklist composed of questions that can be found in the discussion section. The more checklist questions can be answered positively, the more a private organisation is on its way to implement circular private procurement successfully. The application of this checklist can contribute to the acceleration of the transition for a linear to a circular economy. Three implications for further research are formulated. First, more research on theoretical replication cases could reveal whether the theory holds up under other circumstances than those that were found in this research. It would be interesting, for example, to find out if a case in which the precondition skills and knowledge is not established, while the other preconditions are established, is still successful at implementing circular private procurement. Second, further research could reveal if more theories based on public organisations are also applicable to private organisations. By doing so, the body of knowledge on circular procurement can be expanded further. Third, further research could reveal whether the applicability of preconditions for circular public procurement and circular private procurement also holds up in areas outside the European Union. This study focused on the Netherlands, which falls under the European Union. In other areas outside the European Union, different regulations may apply to public and/or private procurement regarding circularity. This could affect the

generalisability of the similarities between circular public procurement and circular private procurement.

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## Appendix A: Interview guide

Thank you for taking the time to do this interview with me. The interview will last approximately three-quarters of an hour/ an hour. The goal of the interview is to get insights into the way sustainability/circularity is taken into account in the procurement of soft facility services. Are you okay with the interview being recorded?

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Start recording.

Interviewer: This is an interview with [name] on [date] on the procurement of soft facility services.

1. Could you explain in your own words what your position is within the company and how this relates to the procurement of soft facility services?
2. Of how many office buildings does your company make use? / How many employees / FTEs usually use these buildings? Are you responsible for all soft facility services in these buildings?
3. How would you personally describe sustainability/circularity?
4. Is there attention for sustainable policy within your company?
  - a. Is there a strategy? How does that manifest itself? Which objectives, for example? (climate, materials, social?)
  - b. Is it supported by top-management?
  - c. Which activities are impacted by this? (procurement, travel, etc.)
    - i. (How) does that translate into procurement? Have goals/strategies been formulated for the procurement department as to how this contributes to sustainability/circularity objectives of the entire company?
5. How do you provide insight into sustainability/circularity among employees?
6. Does your organisation have insight into where the most significant environmental pressure lies?
7. Can you explain to me what the procurement process looks like generally and where attention was paid to sustainability/circularity? And how? Particularly interested in:
  - a. Catering (food, coffee/tea)
  - b. Electronic items (software, hardware)
  - c. Office furniture (desk, chair, carpet, etcetera)
  - d. Stationery items (paper, writing utensil, etcetera)
  - e. Transport
  - f. Waste (not demolition waste)
8. How is the difference in circularity between providers determined? How are the different providers compared, and how is a choice made?
9. How leading is sustainability/circularity in the final choice of the provider?
10. How do you feel about Product as a Service (PaaS) systems? (How do they deal with the contractual part, there are difficulties)
11. What is the most difficult about sustainable/circular procurement? How do you try to deal with that? What would you need?

12. In addition to a financial database, does your company also have insight into what is being procured in quantitative physical terms? (So in addition to financial data, also how many (KGs) they bought?)
13. In your opinion, what is the most circular procurement your company has made to date and why?
14. What are the best practices from that process that you would apply again? Can these also be applied to other products/categories (see question 7)?
15. If we turn the question around, have you ever made a procurement that was intended to be circular but ultimately did not become? What aspects do you think played a role in this?
16. What do you think is the future of procurement concerning sustainability/circularity?

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17. Is there anything else we have not discussed that you would like to add?

Thank you again for taking the time to do this interview. Stop recording.

## Appendix B: Individual case reports: circularity strategies

### Case 1

Case 1 concerns an asset management firm. The interviewee is responsible for facility management and the central procurement for everything related to facilities, however, not for IT-related products/services. The firm has a Corporate Social Responsibility (CSR) team, of which the interviewee is a team member.

#### **Product categories**

**Catering.** They no longer sell plastic bottles in their building but instead use a combo (R0) of a hot/sparkling/chilled water crane, a water filter, and reusable plastic bottles. The water filter device is rented (R3). The change was especially successful, because it meets the functional requirements of the employees and is, therefore, a worthy substitute. Next to this, they aim to reduce food waste by reusing leftovers to make soups (R3). Coffee/tea are fair trade, biological and the machines are rented (R3-6).

**Electronic items.** No examples were mentioned in the interview.

**Office furniture.** The company established a take-back agreement for the packaging material of furniture (R3-6): *“So we don't want, when we receive office chairs or other things, to be sitting here with a pile of cardboard and plastic that we have nowhere to go ourselves. So then they have to take it back themselves and also guarantee that it will be processed properly. So that's a criterium.”*. They pay for their old furniture to be refurbished (R5) and recycled (R8): *“They repair that furniture and they recycle what is no longer usable. For example, they make from four office chairs one new office chair, which they sell and those yields are used by the charity.”*

**Stationery items.** No examples were mentioned in the interview.

**Transport.** No examples were mentioned in the interview.

**Waste.** They separate plastic, glass (R8) and residual waste (R9). The waste processor does not report back on how much waste is produced, but they do pay for the volume of course. Here, you expect strategies on waste reduction (waste-free in 2025) coupled with goals/numbers, but there's none.

### Case 2

Case 2 concerns an asset management firm. The interviewee is responsible for all procurement activities and all facility management activities.

#### **Product categories**

**Catering.** The firm asks their caterers to reduce the amount of plastic (R2): *“We offer [food] without plastic in the restaurants. and we request that from suppliers.”* and find it important to buy locally: *“in [city], we buy our fish locally”*. When they had two options left for a new coffee/tea supplier, they chose the one that went furthest in CSR aspects: *“They even have a blockchain method to provide insight into all parties in the chain that are involved with the coffee beans. And it's a Dutch company.”*

**Electronic items.** The firm does only buy new hardware for IT purposes because: *“We need the state of the art”*. Once the materials are outdated, the data is wiped by a specialised firm. Then the hardware is resold or donated, not destroyed (R3). No agreements exist on a supplier take-back system; this is done through different channels. However, this was also not asked by the interviewee

in the procurement process. *“You would expect that established hardware suppliers would offer something like that themselves. We would definitely want that if they would offer it.”*

**Office furniture.** Recently, the firm decided to switch to activity-based working and with this comes a refurbishment of the office furniture: *“We want the office to look and feel like a modern cafe since the office is becoming a physical work meeting place.”* The new workplace concept is based on the fact that employees work more often from home, even in the classical financial environment. The procurement team brainstormed on how to deal with this refurbishment. Because CSR is important to the team, they came up with the € 0,- project (R3): *“We sell our old furniture and buy second-hand furniture back with that money, or we trade our old furniture for secondhand furniture.”* The team is excited: *“We find it exciting because we are still a bit of a stately bank that is used to buy expensive items on the market. We have been a customer of [firm] for years where we buy furniture in the traditional way.”* but also confident: *“We do this all by ourselves and have not consulted a consultancy agency. We have had some years of research into this. Increasingly more marketplaces exist that do something with this [...] such as [firm], where old furniture is reused.”*

**Stationery items.** No examples were mentioned in the interview.

**Transport.** The firm wants to dispose of the lease park totally by interchanging it with a mobility budget (R1) : *“The ambition we have is to see if we can dispose of the entire lease park and put every employee on a mobility budget; you get a budget and it is up to you to use it. You can for example use it for a bicycle or train subscription or a car that is up to you. In practice, we see that people often tend to choose smaller cars or other transport modes instead of a lease car, because a big lease car costs them their own money.”* However, they are not there yet. To ease their employees to the concept of driving electrical or part-time, they launched a pilot in which all employees could test them out for free. This resulted in positive reactions: *“Not only has the number of electric cars in the lease been increased, but many people changed their perspective on part-time mobility as well: ‘yes I have had a lease car for many years now and a second one for my partner, but I can of course also do travel to work by train 80% of the time. When I have to do something special, I can take a shared car.’ There were a lot more colleagues than I had expected who came up with that same feedback: ‘yes, it made me think differently about mobility and whether I should continue to do it in the same way.’”*

**Waste.** The company separates plastic, paper, organic (R8), and residual waste (R9) and receives a report that states how many kilogrammes are disposed of: *“Yes we work with [firm] in [city]. It supplies special waste bins in which you can separate the waste and dispose of it accordingly.”* Currently, they are looking for a new waste processor, and the interviewee adds that in this case company visits are important to be able to verify whether a company is merely telling nice stories or actually doing it.

### Case 3

Case 3 concerns a banking firm. The interviewee is responsible for IT and facility management and the procurement for everything related to facilities. Small procurements can be done by colleagues, but the interviewee sets up the framework for this.

#### **Product categories**

**Catering.** The company aims to buy at least 60% of the organic products locally. They also aim to avert waste (R2): *“So we do not offer an endless supply to prevent that food gets wasted and thrown away at the end of the day.”* The interviewee mentions that regulations in the food business sometimes makes it challenging to waste no material: *“For example, due to food safety regulations,*

*more plastic needs to be used or the food has to be thrown away too soon because it has not been in refrigeration.”*

**Electronic items.** No examples were mentioned in the interview.

**Office furniture.** The firm is on the verge of a significant renovation. In this process, they aim for circularity. When selecting offering parties, they take into account how they can complete this. The interviewee mentions that the new concept can make use of reused furniture (**R3**) or new furniture such as adjustable desks, which is good for employers' health. When new furniture is necessary, *“I make sure that I make agreements with the supplier to take the furniture back when we do not need it anymore and that they will disassemble it again and reuse the materials.”*. In other words, the circularity strategies reuse (**R3**), repair (**R4**), refurbish (**R5**), and remanufacture (**R6**) are applied due to a supplier take-back agreement. The old furniture that cannot be reused in the new work concept will be sold or given to another party (**R3**). If they need more workplaces in the future, they will rent the corresponding office furniture so it can be taken back again: *“If we still need expansion now, we will rent [furniture] so that it can be returned to the lessor of office furniture”*. Similarly to a supplier take-back agreement, such a renting agreement affects circularity strategies (**R3-6**).

**Stationery items.** The firm is using less paper than before by printing double-sided by default or promoting printing two pages on one sheet (**R2**). With office suppliers, they refuse as much packing material as possible (**R1**): *“We want suppliers who do not deliver in cardboard boxes, but in plastic boxes that are collected and reused to place the next order.”*

**Transport.** The company is actively introducing electric vehicles to its lease park to reduce the CO<sub>2</sub> footprint.

**Waste.** They recycle paper, wooden pallets, small toxic waste, and glass (**R8**). However, plastic, organic, and residual waste are not yet separated due to limited space (**R9**): *“In the future, in the new building, I want to separate it and make provisions for separate storage in advance. The more waste you separate, the smaller the currents become. However, having a truck drive for each stream is not always efficient, so we are looking for a balance to do that in a good way.”*. The contact with the waste processor is good. A conversation is going on (**R8**): *“Is it smart to separate it now or is it too small? How many trucks have to come here and how often? And if it is possible once a month, how much storage space is needed in the meantime?”*. Furthermore, the firm keeps track of the number of kilogrammes: not the exact amount but the number of container emptyings and the percentage the container was filled is registered and based on that they know the amount of waste.

#### **Case 4**

Case 4 concerns a banking firm. The interviewee is responsible for sustainability within the company. In this function, the interviewee is also accountable for incorporating sustainability and circularity in the procurement process: *“My role in the organisation is a catalyst more than anything else. My role relates to several dimensions of the procurement processes: (1) raising awareness of sustainability issues as related to procurement and (2) writing internal policies that are used in finance or procurement and being involved in the due diligence processes for vendors.”* Procurement is separated in IT products/services and facilities. The interviewee mentions that *“In certain things, you can create policies and those become the guideline for evaluating changes to providers/vendors”*.

#### **Product categories**

**Catering.** Next to the health criterium, the firm highly values the way in which their catering company educates about its sustainability story: *“Inviting in their suppliers to give presentations to our employees so they can understand where the food comes from: the source is something we are aiming to create awareness about. If they are thinking about these principles, we believe they will carry them into their day-to-day work.”*. Difficulties they faced when selecting such a catering company were capacity: *“The hard part was finding a caterer that had the qualities that we were looking for but also had the quality to grow with us. That could scale up at least 50% of what they had.”*. Now they are having a conversation to bring down plastic usage in catering (R2). As for coffee/tea, they aim to bring down the usage of paper cups. Although in smaller locations a ceramic cups/dishwasher combo suffices (R1), in larger locations it has proved to be more challenging to manage. Here they did some experimental awareness campaigning (R3): *“to make people use their cups more often or switch to ceramic cups. [It] works some of the time.”* because they decided that they wanted *“in the end to cut down on how much we use”*. They also took part in an experimental recycling programme (R8) *“that takes specific waste from cups and creates toilet paper from it, which we also used in the building.”*.

**Electronic items.** The firm donates or recycles hardware they do not need anymore (R3), sometimes through their vendors and sometimes directly: *“We donated during corona 80 laptops to kids who otherwise wouldn't have access to school. We do that sometimes with NGOs also.”*. They are aiming to incorporate take-back procedures in their electronic hardware contracts (R3-6): *“take back of products is incorporated in the newest contracts, I can't say that it is in all contracts yet, but we're getting there.”*

**Office furniture.** Recently they renovated their building. The furniture they no longer needed was donated (R3). For the new furniture, *“Choice of materials was important”* *“We very much wanted recycled materials to be a big part of the picture and [the chosen firm] ticked that box very much.”*. Next to recycled materials in the furniture (R8), the firm also incorporated modular design, to maximise the usage (R1), and included a maintenance agreement (R4). No take-back agreement is in place here for the end of life because: *“We looked at it as something that would be with us for a long time, not that it would be replaced all the time, so there is not a contract in place for them to recycle it at the end.”*.

**Stationery items.** The firm wants to go to a paperless office. To do so, they made it more challenging to print (R0), took away storage space for the paper (R0), and added a competitive element: *“We thought if we put a hurdle between printers and people, then it would be beneficial for the company. We put two printers on each floor and took all the others away, and you needed to go there and use your id badge. Also, the printing statistics are emailed once a month to your floor and how much it is compared to the other months' increase/decrease. We also took away their filing cabinets, and it is an open office environment. [...] It resulted in a cut in paper usage of 70%, and it is still going from there. We have been very close to being a paperless environment.”*

**Transport.** No examples were mentioned in the interview.

**Waste.** See the paper example under stationery items (R3), and the recycling of cups into toilet paper (R8) and paper cups under catering (R8).

## Case 5

Case 5 concerns a banking firm. The interviewee is responsible for facility management and procurement of facilities. However, not for IT-related products/services and catering.

### Product categories

**Catering.** The firm rents its office space in a building that provides catering. For their coffee/tea needs, however, they actively sought out a type of cup that could be recycled to toilet paper and arranged the collecting themselves (R8). The business case was also clear: *“These are not the cheapest cups, but that way we can separate and recycle them into tissues and toilet paper. [...] Otherwise, they go to the residual waste. You can add to that: what is the additional cost of those cups and what do you save on costs of the kilogrammes of residual waste. It boiled down to one thing cancelling out the other.”* The coffee/tea machines are leased: *“that is one package for the department, that is clever.”* (R3-6).

**Electronic items.** No examples were mentioned in the interview.

**Office furniture.** The firm is not explicit in its circular economy wishes to potential suppliers, but items that are more circular score higher: *“when I see live how an old chair is stripped, that the upholstery gets a destination, that the metal parts are melted down and reused again and that chairs are overhauled and reused, yes, that is what makes such a company come higher on the list. [...] But this is not something that we, as a company, wrote in stone. [...] but it does play a role in the final decision.”* This is an example of what a supplier take-back agreement can achieve (R3-6).

**Stationery items.** No examples were mentioned in the interview.

**Transport:** From buying company cars the firm recently shifted to leasing their cars (R3-6): *“Until recently, we even bought all cars. It took a lot of effort to convert that into a lease.”*

**Waste.** They separate glass, coffee cups, paper, plastic, metals, (R8) and residual waste (R9). For the confidential paper that they shred themselves, which is actually too small to be mixed with regular paper waste, it is arranged to be picked up and processed by the processor that destroys all their other confidential papers. No organic waste is separated because it is a too small portion: after all, they have no own canteen.

## Case 6

Case 6 concerns a banking firm. The interviewee is responsible for procurement, in particular of the facilities: *“So I make sure we procure all the facilities’ supplies we need in the right way: according to our procurement policy and procurement process.”*

### Product categories

**Catering.** They get their coffee cups recycled into toilet paper (R8).

**Electronic items.** This item was only briefly discussed. With their hardware supplier, they agreed to deliver items without packaging and that the supplier discards it themselves in a sustainable way (R3-6): *“Agreements have been made with our hardware supplier about delivery without packaging and for the packaging that is then removed will be separated in their waste flows.”*

**Office furniture.** This item was only briefly discussed. They ask suppliers for recycled cardboard boxes (R8): *“We certainly ask if they can use other packaging materials, for example recycled cardboard.”*

**Stationery items.** No examples were mentioned in the interview.

**Transport.** The firm aimed a couple of years ago to create a *“100% electric fleet before others in the financial sector got involved.”* From that moment on, only electric vehicles were distributed. Travelling by plane is limited as much as possible by substituting it with a different travel mode or with online meetings (R0).

**Waste.** The firm separates paper, plastic, organic (R8) and residual waste (R9). They also get their coffee cups recycled into toilet paper (R8). Furthermore, they partnered up with a waste



processor and a firm that is trained to separate waste: ensuring correct separation at the source (R8). It is hard to find out how much exactly is used on raw material level: *“we currently do not have an overview of how much material flows through our company. A fair question, for example we looked at the flow of plastic a year ago, which was a current topic at that time. Can we paint a picture of that? We can map out how much plastic that is within a few article groups, but that is very difficult at a raw material level. [...] We can find out how many promotional items we buy and whether you can express that in kilogrammes and the proportion of plastic in it for office supplies and catering, but that is just terribly difficult.”*

### Case 7

Case 7 concerns a banking firm. The interviewee is responsible for procurement in soft and hard facility management, but also HR, consultancy, marketing. Prior to this, the interviewee was only responsible for facility management procurement.

#### Product categories

**Catering.** The interviewer mentions that limiting food waste is important to them (R3): *“Suppose we have a certain vegetable on Monday, the caterer will process it again on Tuesday or Wednesday. I find that very important within a caterer.”* Further, they ask the caterer to limit the amount of plastic that they use, and that is offered in their products (R2): *“We try to get as little packaging material inside as possible. However it is then the responsibility of the supplier from the caterer.”* They also get their coffee cups recycled into toilet paper (R8).

**Electronic items.** The firm receives updates on which types of data their employees have downloaded to their devices, and which types of data should be removed for energy and thus money savings (R2): *“They simply see at user level what everyone stores and what needs to be emptied, otherwise it only costs money and energy.”* In terms of hardware, they buy exclusively new products.

**Office furniture.** The firm looks at the durability in furniture: *“When I look at the chair we bought ten years ago, we still have it [...], but whether it can be completely disassembled and reused, I would not know.”*

**Stationery items.** The firm prints and sends their paper envelopes and invoices. From this, they track how many kilogrammes they use.

**Transport.** No examples were mentioned in the interview.

**Waste.** The firm has insights into their waste production per kilogrammes: *“they are registered by our raw material processor. Once a year we receive an overview of all our waste flows and the number of kilogrammes involved.”* They separate coffee cups, plastic, organic, paper, small toxic waste (R8), and residual waste (R9). Separating remains a challenge, however (R8): *“On our pantries, we have a few large cupboards that you can pull out. There are four separate bins in there for plastic, cups, organic waste, and paper. Separation instructions are written out in both Dutch and English. Yet, we see that people are quickly inclined to deposit their waste in the wrong bin. That is personal, and difficult to control.”* However, they would like to see their residual waste go down because: *“Burning residual waste naturally costs a lot of money.”* As the interviewee states: *“a cleaner is not going to separate all that, they don't have time for that.”*

### Case 8

Case 8 concerns a consultancy firm. The interviewee is responsible for procurement in soft and hard facility management, procurement of those elements, and temporarily for sustainability in the total firm.

### **Product categories**

**Catering.** The firm's main criteria are safe and healthy food. The interviewee adds: *"We see that a need to eat more sustainably, so more vegetarian or vegan, exists. That question is just there, so we can just go along with it."* They also focus on prevention of food waste because *"by definition that is, of course, the worst [...]: 1) it is bad for people and the environment and 2) you are also the thief of your own wallet."* They work together on this with a firm that tracks the kilogrammes of organic material that is thrown away, and that translates this loosely to CO<sub>2</sub> kilogrammes. By tracking it, together with the catering team, food waste can be prevented by adjusting the amount of food (R2). The firm also chose not to sell plastic bottles anymore, but only Doppers (R0). Furthermore, they also had an agreement with a firm that picked up their coffee remainders by bike and cultivated oyster mushrooms with this. Then the mushrooms were bought back by the firm's restaurant and processed into food (R8). Now their coffee remainders are collected by a different firm (R8). For this service, they have to pay, but get one-third of the costs back as a coupon for the platform shop: *"Bioplastics, soaps, and because it is a platform, more and more products will be added to it. And we want to sell that in our espresso bar."*

**Electronic items.** No examples were mentioned in the interview.

**Office furniture.** When concerning office furniture, material choices such as recycled materials (R8): *"Whether it is a high-quality product made with a lot of recycled material"*, but also how the product is made and whether or not the product is taken back at the end of the life cycle (R3-6) are considered.

**Stationery items.** No examples were mentioned in the interview.

**Transport.** Because of the nature of this company, transportation is one of their core activities: *"Our people work for the clients, so travelling is really just an inherent part of what we do."* Especially flying and car use are large contributors to their CO<sub>2</sub> footprint. They aim to do this as responsible as possible, for example by offering their employees the option to lease an electric vehicle: *"When I first started, we included 15 electric cars in our fleet [...] and carried out a pilot and eventually drew up a mobility policy. So at the moment, everyone in the company can choose for an electric car."*

**Waste.** The company exclusively rents its office locations. This makes it sometimes difficult to achieve things like waste separation and recycling because they are just a tenant. The company always tries to talk with their co-tenants and with the owner to come to certain agreements: *"enter into partnerships with them and thus create a kind of leverage to convince companies that things really have to be done differently. So basically you are trying to get a support base so you can decide otherwise. These are political processes, and there are all kinds of meetings. These are long processes where it sometimes succeeds and sometimes not."* However, when such agreements did not work out, they decided to implement for example plastic separation themselves for the whole building (R8): *"A few years ago we found out that plastic was not collected separately. We then put a lot of effort into this and eventually, we said as a company: it does not matter, we will pay for the entire [building] and then it was finally done."* They also had their coffee remains picked up for mushroom cultivation (R8). Unfortunately, as tenants, they are dependent on the owner for services like waste processing, for example. Although this company separates six waste streams, on the basis of which they reduced their usage via reporting, the owner has now selected another administrator of the building that has a contract with another waste processor. The new waste processor cannot provide detailed information and does not recycle any separated materials. Their efforts are nullified.

## Case 9

Case 9 concerns an insurance firm. The interviewee is responsible for procurement; thus also facility management except for IT because IT does that themselves.

### **Product categories**

**Catering.** The firm does not take into account any form of circularity/sustainability in choosing a caterer: *“correct, no we did not pay attention to sustainability. It also was not listed as one of the requirements in the RFP document that they had to meet.”*. Coffee/tea machines are rented, however not with circularity in mind (R3-6).

**Electronic items.** The firm provided the option for employees to buy overcomplete IT hardware for a symbolic amount (R3).

**Office furniture.** The firm just had the refurbishment of two buildings done. For one building, time was an issue, so all furniture was bought new. For the other building, time was not an issue and also there everything was bought new: *“We quickly decided to buy everything completely new instead of evaluating what we can still reuse. [...] The producers of the furniture aimed of course very much on circularity and our position on that, because that is a hot topic and good for the environment and CO<sub>2</sub> footprint. But we would not agree on that point, so everything is new.”*. However, they did sell their old furniture to a buyer, so it did not get thrown away (R3). During COVID-19 they tried out ‘home offices as a service’ which was in the form of a renting agreement (R3-6): *“The ownership does not become ours but remains with an external party. When someone leaves the service, they simply pick it up again.”*. However it was cheaper to buy the furniture themselves and sell it afterwards then to rent it, so they went back to that.

**Stationery items.** No examples were mentioned in the interview.

**Transport.** In the coming years, electric vehicles will become more attractive to lease: *“For example, we have a fairly old lease scheme where electric cars are less attractive than diesel. We are now on a turning point that we are going to change that.”*

**Waste.** The streams plastic, paper, small toxic waste, organic (R8), and residual waste (R9) are separated and processed as such by their waste processor. The amount of waste is reported, but no objectives exist for this.

## Case 10

Case 10 concerns an insurance firm. The interviewee is responsible for facilities and also for procurement of facilities: *“alles qua facilities heeft hij bemoeienis mee en in die zin ook adviserend en binnen bepaalde grenzen ook beslissend”*.

### **Product categories**

**Catering.** Their coffee remainders are picked up by a mushroom cultivator (R8).

**Electronic items.** No examples were mentioned in the interview.

**Office furniture.** When buying furniture, suppliers are asked whether or not the furniture is completely recyclable after use (R8): *“We consider it important to us that the furniture is fully recyclable after use. [It is] something we include in the schedule of requirements.”*

**Stationery items.** The firm makes it more difficult to print to reduce their paper usage (R0): *“that pays off.”*. Their clients appreciate it to receive paper letters. However, they will deviate from this and are planning to replace them with an online application (R0).

**Transport.** No examples were mentioned in the interview.

**Waste.** They keep track of how many kilogrammes of waste they produce: paper, organic, small toxic waste, coffee (R8), and residual waste (R9). Every quarter, they communicate this in a report, also the separate numbers of their tenants: *“Every quarter we take stock of the energy consumption of our tenants and also of the volume that waste flows have generated.”* The waste processor was chosen based on circularity, reuse of materials. The residual waste is separated at the waste processor even further, and they make briquettes out of it (R9).

### Case 11

Case 11 concerns an insurance firm. The interviewee is responsible for facility management and for one of the three workflows that concern sustainability: *“What we do there: on all the key points we need to reach our ambitions. So that also means that with procurement, the procurement department works on making procurement policy, screening current procurement contracts in terms of the extent to which the contracts, and ensuring that the products and services of the contracts contribute to our objectives. So in that way, I am also responsible on the procurement side in that area.”*

### Product categories

**Catering.** The firm focuses on health, price and sustainability/circularity criteria for catering. They aim to minimise food waste by offering limited amounts of food (R2) and by minimising plastic waste (R2). The latter is *“something that is still very much in development. We work with [firm], who are intrinsically very busy with this, but it is a matter of balancing along the axis of the price and how sustainable you want and how it can be done”*. Also, paper cups are used and recycled into toilet paper (R8).

**Electronic items.** The firm recently ado their internal operations to deal with longer shipment time, but lower CO<sub>2</sub> emissions than usual when ordering electronic hardware (R2): *“When procuring laptops, they were normally always flown by plane from China to the Netherlands, and we now have a conversation with the supplier that those laptops no longer come by plane but by train. That saves 95% CO<sub>2</sub> on transport, and it is also slightly cheaper, a few euros per laptop, but the transport takes longer. But if you can adjust your planning and your order process to that, then that's completely fine too.”*

**Office furniture.** The firm has bought only second hand (R3) or refurbished (R5) furniture for a while now: *“from now on we no longer buy new furniture. We only buy used furniture: second-hand or refurbished”*. The furniture that they themselves no longer use is sold to the same firm where they shop their ‘new’ furniture (R3). Reused furniture has added value, according to the interviewee: *“that results in very nice interiors because we sometimes buy things that we normally would never have bought with a very nice story. Towards the employees that is a much better story than ‘look here is a nice new desk in front of you’ that does not sound so nice like ‘this desk has already been used at that and that company’ and it looks like new.”*

**Stationery items.** They decreased the amount of physical mail sent to a minimum (R0): *“In any case, we are also very much focused on our output, that is, we send as little paper as possible out the door. Between 2017-2019 we have already reduced 25% of our paper flow [...] by digitisation.”*

**Transport.** No examples were mentioned in the interview.

**Waste.** They separate paper, organic, plastic, paper cups (R8), and residual waste (R9). Every quarter they report on the kilogrammes per waste stream: *“65% is recyclable, 35% is the residual waste.”* Unfortunately, this is a little below their goal. The interviewee states that plastic and

organic gets mixed up in the residual waste stream and that they are working on better signing and alerting employees to fix this.

### **Case 12**

Case 12 concerns an insurance firm. The interviewee is responsible for sustainability in the internal operations of the firm: *“Everything that is relevant to our own business operations in the field of sustainability. So a subject such as solar panels at our head office, that belongs to me”*.

#### **Product categories**

**Catering.** This company also has their coffee remains picked up by a firm that cultivates mushrooms on it (R8). These cultivated mushrooms are used again in their catering as mushroom croquettes. Also, orange peels are collected by a firm which processes these to use in cleaning products (R7). Next to that, they agreed with their caterer to minimise plastic usage (R2): *“As little plastic as possible is also in our new contract with our caterer, we have set those requirements during negotiations.”*. Also, they have coffee cups that can be recycled into toilet paper/tissues (R8).

**Electronic items.** This firm leases the laptops that they use (R3-6): *“Look at the laptops we use, we don't buy them, we lease them. So they go back to the supplier.”*.

**Office furniture.** The firm has established a take-back agreement with the supplier of office furniture (R3-6). The interviewee mentions that it is pretty standard for these types of facility items: *“Office chairs are also returned [...]. But this is fairly standard for that kind of facility services.”*. When redecorating some years ago, they decided on a circular carpet that was taken back at the end of the use phase (R3-6). The interviewee adds: *“Asking suppliers to take back their products has never led to any problems, like that they do not want to do that.”*. Next to this, campaign canvases are used in the office. From these canvases, a social workplace makes bags that the company can use to hand out goody bags (R8).

**Stationery items.** They aim to reduce packaging by establishing a take-back agreement for the wooden pallets that their paper is delivered on (R3-6): *“those pallets are taken back by the suppliers, and we just agree on that with them.”*.

**Transport.** They are altering their mobility plan to more shared cars (R1) and an increased bicycle plan (R0): *“They must therefore ensure that there are shared cars, that the lease policy is adjusted. They have proposed an increase in the bicycle plan.”*. They aim to lease bicycles (R3-6) and ask for a take in agreement for employees' old bikes (R3-6).

**Waste.** For about 20 years, the amount of waste in kilogrammes has been tracked. Although they aim to reduce those numbers, it makes sense that: *“you would strive for a reduction of this, but that is not always realistic, and you cannot keep it up indefinitely.”* Although they have no goals directed at reducing waste kilogrammes, they have goals directed at CO<sub>2</sub> emission reduction. For that purpose, they translate the kilogrammes of waste to CO<sub>2</sub> emissions. They separate organic, plastic, cups, coffee remains (R8), and residual waste (R9). Their cleaning service reports on how many kilogrammes they produce and processes each stream separately.