

# Implementing Sustainable Public Procurement

An  
organisational  
change  
perspective



Jolien Grandia



# **IMPLEMENTING SUSTAINABLE PUBLIC PROCUREMENT**

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## VOORWOORD (PREFACE IN DUTCH)

Hoewel mijn promotietraject natuurlijk zijn hoogte- en dieptepunten heeft gekend, kijk ik er met heel veel plezier op terug. De afgelopen jaren zijn op allerlei fronten ontzettend leerzaam geweest. Ik heb niet alleen een promotieonderzoek mogen uitvoeren, maar ook talloze werkgroepen gegeven en scripties begeleid, een werkplek gehad op het Ministerie van Binnenlandse Zaken en Koninkrijksrelaties (BZK), mijn werk kunnen presenteren op internationale conferenties en deelgenomen aan het PhD programma van de NIG. Dit proefschrift zou echter niet tot stand zijn gekomen zonder de hulp van diverse mensen. Ik wil dan ook iedereen graag bedanken die in enige vorm heeft bijgedragen aan mijn promotieonderzoek. Enkele mensen wil ik hierbij graag specifiek noemen.

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# Chapter 1

# General introduction







## 1.1. PROCUREMENT AS A POLICY TOOL

Governments try continuously to govern developments in society (Bovens, 't Hart, & Van Twist, 2012). Their governance is aimed at ensuring the security and safety of their citizens, but also at stimulating or impeding specific societal developments such as in the fields of education, immigration, animal welfare or climate change (Bovens et al., 2012). The resolutions, choices and actions of government bodies regarding the governance of these specific societal developments are laid down in public policies (Bovens et al., 2012) which give meaning to the way governments try to drive or hinder developments that they deem (un)desirable (Bekkers, 2007). Governments procure goods and services to execute these policies and, for its own operations. These goods and services range from buying paper and pencils to commissioning fighter planes, cleaning services, and public road works.

The public procurement market is regarded as the largest business sector in the world (Hawkins, Gravier, & Powley, 2011). It represents 16% of gross domestic product in the EU (Rolfstam, 2009). The Dutch national government alone has an annual expenditure of 10 billion Euros (Rijksoverheid, a). Governments increasingly use their authority as a large buyer in the market to compel private organisations to contribute to the achievement of their public objectives (Moore, 1995; Rolfstam, 2009). Thus, procurement is no longer just a means to an end, but also a policy tool used to achieve desired outcomes in society. Public procurement in the Netherlands, for example, is used to minimise long-term unemployment, to improve working conditions throughout the (international) supply chain, and to stimulate the market for sustainable goods and services (PIANOo, 2015). Our research focused specifically on the latter; i.e. a policy aimed at stimulating the market for sustainable goods and services via sustainable public procurement (hereafter referred to as SPP).

Despite several decades of studies into the policy implementation process, scholars still tend to underestimate the impact of implementation on the form and success of a policy (Grantham, 2001). Although pressures from government, customers and various stakeholders can trigger organisations to incorporate sustainability issues into their procurement (Nawrocka, 2008; Perez-Sanchez, Barton, & Bower, 2003; Seuring & Müller, 2008; Sharfman, Ellington, & Meo, 1997), these pressures will only be successful if both the individual organisation and the supply chain as a total entity possess or develop the necessary internal resources to implement it (Bowen, Cousins, Lamming, & Faruk, 2001). Sustainable procurement refers to “the acquisition of goods and services in a way that ensures that there is the least impact on society and the environment throughout the full life cycle of the product” (Meehan & Bryde, 2011). Research has shown that the extent and nature of SPP varies greatly across organisations and regions (Brammer & Walker, 2011). In a time of cutbacks and ‘having to do

more with less', it is very relevant to examine the mechanisms behind these variations, so that the full potential of sustainable procurement can be used and value for money achieved.

## 1.2. SUSTAINABLE PUBLIC PROCUREMENT AS ORGANISATIONAL CHANGE

To implement sustainable procurement and apply it in procurement projects organisational routines have to be changed. Organisational routines are "rules that allow people to select elements of a repertoire in order to construct sequences of behaviour that make sense to others in the organisation" (Feldman & Pentland, 2003: 623). For example, procurers have rules in the process of acquiring goods and services that help them procure these in a way that makes sense to them, as well as their supervisors, clients, co-workers, citizens and politicians. The introduction of sustainable procurement requires existing organisational routines, and thus behaviour, to be questioned and, subsequently, altered into a new organisational routine (Becker, Lazaric, Nelson, & Winter, 2005; Jones, 2003). Although sustainable alternatives do not have to be more expensive, simply selecting the most cost-effective option is no longer possible, as other values have to be taken into account. Procurers will thus have to change their existing organisational routine for a new one, which makes sense to them and others. However, previous procurement policies have led to procurers becoming more risk-averse and less likely to partake in innovative projects (Rolfstam, 2012).

The procurement process is considered to be a decision-making process where the decisions of key actors determine whether the full potential of SPP is used (Günther & Scheibe, 2006). To use this full potential procurers thus have to make the right decisions and, to do so, they will have to change their behaviour and become less risk-averse. Therefore, actors, such as procurers, play an important role in the implementation of sustainable public procurement. However, in most studies into SPP this has been overlooked.

The number of studies into sustainable procurement has increased significantly in recent years (Lange, Telgen, & Schotanus, Forthcoming). The majority have focused on the identification of the barriers and drivers of sustainable procurement (Appolloni, Sun, Jia, & Li, 2014) that are important in understanding what causes variations in the implementation and implementation of sustainable procurement. For example, studies show that various factors could increase the uptake of sustainable procurement: e.g. knowledge, incentives and a clear aim (Günther & Scheibe, 2006); top management initiatives and government regulations (Giunipero, Hooker, & Denslow, 2012); national or international legislation, procurement commitment and training (Brammer & Walker, 2011); and supplier availability (Preuss, 2009). However, identi-

fying these barriers or drivers is not enough to utilise the full potential of sustainable procurement.

It is also important to know not only what factors influence the implementation of sustainable procurement, but also why these factors exist; who are involved; and, perhaps more importantly, how they influence the implementation of SPP. For example, we know that commitment is considered to be an important driver of the implementation of sustainable procurement (Erdmenger, 2003; Hoejmosé & Adrien-Kirby, 2012; Michelsen & de Boer, 2009). Yet, few studies have examined thoroughly the role of commitment in the implementation of SPP. Important questions are answered insufficiently, such as: who should be committed? Does commitment actually increase the implementation of SPP? What determines how committed somebody is? And, how can we increase the level of commitment? Assessing how the barriers and drivers of SPP play a role in its implementation should examine also how actors play a role in these barriers and drivers. Which barriers and drivers actually influence their behaviour and decision-making process? The role of actors in the mechanism between the identified barriers and drivers of SPP to a large extent has thus remained hidden.

The overall aim of our research is to gain insight into the implementation of SPP and to explain how factors and actors influence its implementation and uptake. In line with the aim of the research the main research question is:

*To what extent and how do organisational factors and actors influence the implementation of sustainable public procurement in the Dutch national government?*

The next chapter discusses how organisational factors and actors are expected to play a role in the implementation of SPP. In advance of this, we discuss the relevance of our research for theory, practice, and public administration.

### 1.3. THEORETICAL RELEVANCE

Although studies into sustainable or green procurement are on the increase, it remains a field still in its infancy (Appolloni et al., 2014). Most studies to date have focused on only three subjects; two of which are closely related: 1) drivers of and 2) barriers to sustainable procurement; and, 3) the impact of sustainable procurement on the environmental, financial or operational performance of organisations (Appolloni et al., 2014). To mature further, the field of sustainable procurement must move beyond identification of barriers and drivers and examine how and why these factors

influence SPP, as well as who are involved. A theoretical framework derived from the organisational change literature offers help in these respects given this field is much more mature. However, some persistent gaps exist here also, which need to be closed.

First, too little attention has been paid to the outcomes of change processes (Kuipers et al., 2014). We will therefore examine, qualitatively and quantitatively, the outcomes of the change process, either in the form of behavioural change, or as the implementation of sustainable procurement. This will help scholars, procurers, and managers understand what makes the implementation of the change successful. Second, the research examines different aspects of the change process and, thereby, helps to close another gap in the literature: i.e. a lack of research into the process of change (Kuipers et al., 2014).

#### **1.4. PUBLIC ADMINISTRATION RELEVANCE**

Our research is relevant to public administration for two important reasons. First, according to Waldo (1955) “the central idea of public administration is rational action, defined as action correctly calculated to realise given desired goals”. As a way to overcome market failure, governments often take it upon themselves to take action to reach those desired goals (Donders & Gradus, 2007). Reaching these goals means achieving public values and, within public administration, ‘public values’ are considered to be very important (Jørgensen & Bozeman, 2007). Policy on SPP was developed to stimulate the market for sustainable goods and services, and for the government to act as a role model to other (public) organisations. Thus, the policy on SPP was developed to achieve public (sustainable) value through procurement. Procurement, in other words, has become a policy instrument to reach goals desired in society and to achieve public value. However, procurement is not recognised yet within public administration research as an important policy instrument and thus as a valid research subject.

This is a bit odd, since public procurement projects, as such, are often the subject of academic research. However, studies frequently fail to take the role of procurement into account when evaluating projects. This is the case for studies into public private partnerships (Hodge & Greve, 2007; Osborne, 2002); governance networks (Klijn, Steijn, & Edelenbos, 2010; Sørensen & Torfing, 2007); spatial or urban planning projects (Verweij, Klijn, Edelenbos, & Van Buuren, 2013); and, co-creation or co-production (Brandsen & Pestoff, 2006; Voorberg, Bekkers, & Tummers, 2014). All these topics are related inherently to procurement, but often fail to consider the role of procurement. Thus, we can see that sustainable procurement is not yet a key subject within public administration. Most scientific and peer-reviewed articles on SPP, for

example, are published in journals specializing in environmental issues, rather than in journals with a clear public administration background (Lange et al., Forthcoming). Hence, our research into SPP adds to public administration research by examining the implementation of SPP.

Second, the field of public administration has often examined what makes entities in the public sector distinct from their counterparts in the private sector, such as studies into the specificities of public organisations (Antonsen & Jorgensen, 1997; Rainey, Backoff, & Levine, 1976); public organisational change (e.g. By & Macleod, 2009; Coram & Burnes, 2001; Fernandez & Rainey, 2006; Kuipers et al., 2014; Van der Voet, 2014); or public sector employees (e.g. Giauque, Ritz, Varone, & Anderfuhren-Biget, 2012; Moynihan & Pandey, 2007; Vermeeren, 2014). Public procurement is another aspect of public administration that is recognised widely as vastly different from their private counterparts (Harland, Telgen, & Callender, 2013; Thai, 2001). By examining the implementation of sustainable procurement in a public sector context our research also provides insight into the role that factors and actors play in the implementation of a procurement policy in a public sector context and, therefore, is highly relevant for public administration research.

## **1.5. PRACTICAL RELEVANCE**

After the start of the economic crisis in 2009, the Dutch government was forced to take economic recovery measures and begin cutbacks in public expenditure (Kickert, 2012). To date, the Dutch national government, as well as many other public organisations, have been faced with cutbacks and tightening budgets. In times like these, the importance of procurement and the procurement function is heightened, not only because the government has to procure goods and services with fewer resources, but also because procurement itself is a policy tool that can help achieve desired outcomes in society (Brammer & Walker, 2011; Carter & Rogers, 2008; Green, Morton, & New, 1998; Ho, Dickinson, & Chan, 2010; Meehan & Bryde, 2011; Preuss, 2009). Understanding how organisational factors influence the implementation of sustainable procurement and how these factors can be influenced is critical to achieve these desired outcomes. Our research can help public organisations understand how they can increase the implementation of sustainable procurement, drive forward the sustainability agenda, and achieve (sustainable) value for their money.

## 1.6. OUTLINE OF THE DISSERTATION

This dissertation consists of eight chapters. The current chapter has introduced the research question and research objectives. The following four empirical chapters all examine one or more research objectives.

Chapter 2 outlines the theoretical framework and key concepts. The theoretical framework builds mainly on insights from sustainable procurement and the organisational change literature, but also borrows from the public administration and (public) procurement literature.

Chapter 3 discusses the methodology of the research. The design of the research, as well as the rationale behind the mixed-method approach, is addressed in this chapter.

Chapters 4 through 7 present the empirical studies. Each empirical chapter contains the research question, theory, and methodology of each specific study. Three empirical chapters have been published as articles in international peer reviewed journals and one was revised and resubmitted for publication as an article in an international peer reviewed journal. These four chapters are part of the dissertation and the overall research, but can be read separately.

Chapter 4 qualitatively examines the role of organisational factors on the implementation of sustainable procurement in two procurement projects in the Ministry of Defence. The entire procurement process was unravelled and examined in-depth to answer the question: how do organisational factors influence the degree of sustainable procurement in public procurement projects in the Dutch national government?

Chapter 5 qualitatively examines the role of actors and, specifically, the role of change agents in sustainable procurement projects in the Dutch national government. Procurers have to be encouraged to enact new behaviour and procure in a sustainable manner to optimise sustainable procurement (Armenakis & Bedeian, 1999). The organisational change literature suggests change agents should play this encouraging role, as they can increase employees' readiness for change by influencing their beliefs, intentions and, ultimately, their behaviour (Armenakis, Harris, & Mossholder, 1993). Therefore, we compare the role of change agents in seven procurement projects in the Dutch national government.

Chapter 6 seeks to open up the black box between organisational factors and the implementation of sustainable procurement and to test whether individual sustainable procurement behaviour mediates the relationship between organisational factors and the implementation of sustainable procurement.

Chapter 7 examines the behaviour of public procurers to see how it can be influenced even more. Organisational change scholars consider commitment to change the most important determinant of employee behaviour and desirable work outcomes (Choi, 2011; Meyer, Stanley, Herscovitch, & Topolnytsky, 2002) and found it effective in altering environmental behaviours (Lokhorst, Werner, Staats, Dijk, & Gale, 2013). Therefore, we test using a survey whether commitment to change (process) positively mediated the relationship between four other aspects of change.

Chapter 8 discusses the overall findings and provides answers to the main research question. It also discusses the strengths and weaknesses of our research and provides recommendations for future research and practice.





# Theoretical framework





## 2.1. INTRODUCTION

This chapter discusses the organisational change framework used to examine the implementation of SPP in the Dutch national government. However, first, we provide some information about public procurement, the public procurement process, and SPP. Subsequently, we explain why sustainable procurement should be viewed as an organisational change issue. We discuss the issues to be examined when studying organisational change and, then, apply them to sustainable procurement. The chapter concludes with the concepts examined in the four empirical chapters.

## 2.2. PUBLIC PROCUREMENT VERSUS PRIVATE PURCHASING

Public procurement refers to the acquisition of goods and services by government or public sector organisations (Uyarra & Flanagan, 2010). The terms procurement and purchasing often are used interchangeably. However, purchasing often signifies the process of acquisition in manufacturing; while procurement is a term that is used mainly in the public sector (Arlbjørn & Freytag, 2012). As our research examines the process of acquisition in the public sector, we use the term procurement.

The procurement volume and value of public sector organisations is similar to or even greater than many private counterparts (Arlbjørn & Freytag, 2012). Although the boundaries between public and private are blurred, due to developments such as externalization, outsourcing, and public-private partnerships, public procurement is still considered very distinct from its counterpart in the private sector (Harland et al., 2013; Thai, 2001). For example, public procurement is expected to meet higher standards of transparency, integrity, accountability, and exemplary behaviour, as well as having to deal with many different and often conflicting goals (Telgen, Harland, & Knight, 2007). Political goals and the political responsibility of politicians also place demands on public procurement not found in private purchasing (Murray, 2009; Telgen et al., 2007). Furthermore, public procurement faces more stakeholders, such as citizens, management, unions, and taxpayers, with differing objectives that need to be taken into account (Telgen et al., 2007) compared with private organisations.

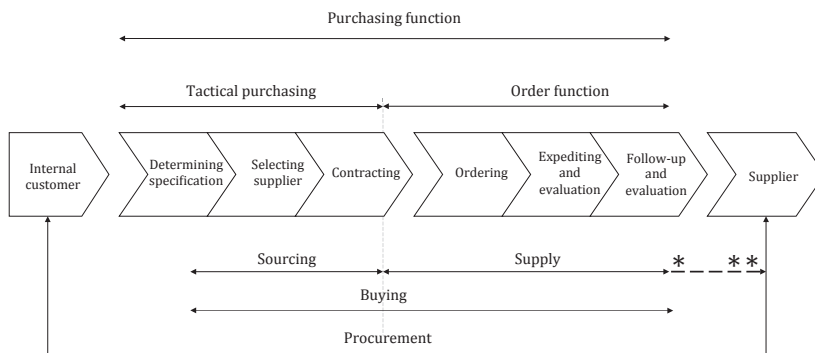
However, perhaps more importantly, public procurement is constrained by rules and regulations that do not apply to private purchasing (Harland et al., 2013). These are laid down in numerous national and international regulatory frameworks, such as the pluri-lateral Agreement on Government Procurement (GPA) of the World Trade Organisation, primary and secondary legislation of the European Union and specific titles in the United States code (Harland et al., 2013). These rules and regulations enforce the high demands regarding, for example, transparency and integrity. Since

public procurers have to comply with rules and regulations, whereas their private counterparts do not (Harland et al., 2013), public procurement is different and more complex than private purchasing.

### 2.3. PUBLIC PROCUREMENT PROCESS

Despite the differences between public procurement and private purchasing, the phases of acquiring goods and services are similar (Caldwell & Bakker, 2008). For example, the process starts with a need for something in both public and private sectors (Caldwell & Bakker, 2008). The general procurement process has been portrayed rather differently between the various scholars and practitioners (Monczka, Handfield, Giunipero, & Patterson, 2009; PIANOo, 2 April, 2013) but the most commonly used model for public procurement is based on Van Weele's approach (Caldwell & Bakker, 2008). Although this approach is not designed specifically for public procurement, it is applicable nevertheless. Van Weele's approach is shown in figure 2.1 and consists of six distinct activities: specification; supplier selection; contracting; ordering; expediting; and, follow-up and evaluation, and the management of the relationship between the customer and supplier (Van Weele, 2005: 13).

**Figure 2.1.** Procurement process.



Note: \* USA \*\* UK

Source: Van Weele (2005: 13)

The first step in the procurement process is determining the procurement requirements. This can be a functional specification describing the functions the good or service should have, for example, to provide light at desks. Or a technical specification describing the technical properties and characteristics of the product (Van Weele, 2005), for example, a black, adjustable desk lamp, with a LED lamp that provides 70 lumens of light. "Determining the specifications is an important phase in the procurement process, as it is harder to justify the awarding of a contract when it is difficult to

write the specifications" (Caldwell & Bakker, 2008). However, it is difficult to improve specifications as EU legislation forbids early engagement with potential suppliers to ensure accountability and competition (Caldwell & Bakker, 2008).

The supplier selection phase begins after the need is determined, using two types of criteria: qualifying criteria and award criteria. Qualifying criteria contain the minimum requirements to be considered at all. The award or winning criteria contain additional offers by which the supplier can make his offering stand out and increase their chances of being awarded the contract (Caldwell & Bakker, 2008). In the case of sustainable procurement, it can be either qualifying criteria (if the coffee cups cannot be recycled, the offer will not be considered), or award criteria (if the coffee cups can be recycled the offer will be regarded higher than offers without recyclable coffee cups). Qualifying and award criteria do not exclude each other; certain aspects can be made into qualifying criteria, while others are award criteria. In addition, not all the award criteria need to be weighted the same. The weights of the different aspects (e.g. price, quality) are awarded based on specific context of the product or service being procured. In certain situations, speed is more important than costs, and the criteria for speed will outweigh the cost criteria. This supplier selection phase is influenced also by national and international rules, regulations, and legislation. For example, the procurers have to check whether the contract has a value above a threshold level set by EU procurement rules that then requires the contract to be advertised in the supplement to the Official Journal of the European Union (OJEU) before being notified elsewhere. This extends the potential supply market to include the entire European Union (Van Weele, 2005). In addition, the procurer should check also whether other national or international rules apply and that may have specific requirements, which, subsequently, will be incorporated into the procurement.

Contracts are awarded in the third phase, either to the bidder with the lowest price, or to the bidder offering the most value for money (Van Weele, 2005). The contract draws up several items including inter alia: price arrangement (e.g. fixed price plus incentive fee, or an agreement with price-adjustment); terms of payment; penalty clauses; warranty conditions; insurance; safety regulations; terms of delivery; and, contracting out to third parties (Van Weele, 2005). The ordering phase begins once contracts are awarded. When goods or services are ordered without having followed these two previous steps this practice is called 'maverick buying'. Maverick buying diminishes not only the efficiency of procurement, but also the possibilities of using procurement as a tool to reach desired outcomes in society, such as sustainable procurement (Caldwell & Bakker, 2008). Many public organisations are switching currently to e-procurement to make the ordering process more efficient and transparent and limit possibilities for maverick buying (Caldwell & Bakker, 2008).

Once the product or service is ordered, the last step of expediting and evaluation begins. As public procurement becomes more focused on value, rather than price, the evaluation phase also becomes increasingly complex. It can be filled with tensions between operational, strategic or policy requirements since different stakeholders might hold very different opinions on which performance is more important (cost performance vs. value performance), and what should be done to improve performance (Caldwell & Bakker, 2008). For example, when procuring coffee machines, the buyer might be very satisfied with the price of the delivered product, while the users find the coffee distasteful and politicians are disgruntled that the coffee is not fair-trade. Hence, the procurement process is not a straightforward or easy process and where including sustainability criteria add complexity to an already complex situation.

The next section discusses the sustainable procurement policy programme in the Netherlands.

## **2.4. SUSTAINABLE PUBLIC PROCUREMENT IN THE NETHERLANDS**

Worldwide, governments are taking sustainability increasingly into account when procuring goods and services (Varnas, Balfors, & Faith-Ell, 2009: 1215). The Netherlands joined this global procurement 'revolution' in 2005 and since then has emerged as a top performer in Europe (Renda et al., 2012).

Sustainable procurement refers to "the acquisition of goods and services in a way that ensures that there is the least impact on society and the environment throughout the full life cycle of the product" (Meehan & Bryde, 2011). Green public procurement; environmentally responsible public procurement; green purchasing; and, eco-procurement are other terms used to describe the same phenomenon or policy. We use the more general term 'sustainable procurement' in our research as it matches most closely with the Dutch name of the policy, 'Duurzaam Inkopen'.

A motion in the Dutch House of Representatives led to the development of a policy programme on sustainable procurement. This set a goal of achieving 100% sustainable procurement by the end of 2010. The Dutch government developed this national initiative to stimulate the market for sustainable goods and services by giving a good example (Kamerstukken II, 2004-2005, 29800-XI-103). All other Dutch public organisations committed themselves also to sustainable procurement to be achieved by 2015. Municipalities aimed to achieve 75% sustainable procurement by 2010, whilst water-boards and provinces aimed for a target of 50% by 2010. Universities and other higher educational facilities aimed for at least 50% sustainable procurement by 2012

(Rijksoverheid, b 2011). Every couple of years the progress is monitored and reported to the Dutch House of Representatives.

Ecological criteria have been developed for more than 70 different product categories, ranging from audio-visual equipment to integration programs and heavy motor vehicles (PIANOo, 2014). The criteria documents are available publicly on a government website and state the ecological thresholds that the supplier has to include. For example, office furniture needs to have a lifespan of at least five years and no dangerous substances may be used in the production of paper (PIANOo, 2014). Some goods or services have few or no sustainable alternatives available or expected (e.g. medical equipment). Thus, ecological criteria have not been developed for all products and services that the government acquires. Public procurers are required to apply all the relevant ecological criteria when procuring goods and services and, if all relevant ecological criteria are met, the goal of 100% sustainable procurement is achieved. The criteria documents are updated every couple of years to ensure the criteria remain efficient, accurate, and innovative.

This compulsory implementation of the ecological criteria under the policy programme on sustainable procurement is matched by a voluntary part. The Dutch House of Representatives wanted the public procurers to go further than the mere implementation of the ecological criteria and include more sustainability in their projects whenever possible. Public procurers could include, for example, additional sustainable award criteria that are not part of the required ecological procurement criteria.

Although the policy programme on sustainable procurement is considered, in general, a success, it has been the subject of discussion (Melissen & Reinders, 2012). A study commissioned by the Dutch Advisory Board on Administrative Burdens (ACTAL) concluded that overlap and a lack of vision created red tape and noted that the criteria documents have become mere checklists which appeared to hinder sustainable innovations, rather than stimulate them (ACTAL, 2011). As a result, the policy programme has been reviewed and slightly adapted in 2012 to shift the focus of the policy a little away from the inclusion of criteria.

The initial focus of SPP in The Netherlands was on the environmental aspect of sustainability. However, in 2011, two policies dealing with the social aspects of sustainability and procurement were added. A policy dealing with social conditions (e.g. child labour, fair wages and working conditions) to make production more socially responsible, together with a policy dealing with the involvement of people with a distance to the labour market (e.g. handicapped or long-term unemployed people) in the execution of large orders (> €250.000), were implemented. These two policies were developed completely independent from the policy regarding sustainable (ecological) procure-

ment and have a separate implementation process. Therefore, they are not included in this PhD research. However, they do add another layer of complexity to the procurement process, as they require procurers to take even more values into account whilst procuring goods and services.

## 2.5. SUSTAINABLE PROCUREMENT AS ORGANISATIONAL CHANGE

Pressures from government, customers, and various stakeholders can trigger organisations to incorporate sustainability issues into their procurement (Nawrocka, 2008; Perez-Sanchez et al., 2003; Seuring & Müller, 2008; Sharfman et al., 1997). However, these pressures will be successful only if both the individual organisations and the supply chain as a total entity possess or develop the necessary internal resources to implement it (Bowen et al. 2001). As stated earlier, at the macro level organisational change is considered to be a comprehensive process where people define goals or a direction that is more desirable than the current state of affairs. The Dutch House of Representatives determined the required goal of 100% sustainable procurement in 2010 to be more desirable than the previous optional approaches to achieving sustainability. To help implement sustainable procurement at the micro level a policy programme was thus developed and ecological criteria were developed.

The transformation from regular procurement towards sustainable procurement might seem a minor change, especially when compared to organisational changes, such as mergers and reorganisations. However, this change requires organisational routines to be adjusted at both the macro and micro level with regard to the resources, competences, and capabilities of the staff, as well as the organisation (Gold, Seuring, & Beske, 2010: 230). It implies that sustainability has to become an integral part of the organisation; otherwise a truly sustainable organisation will not emerge (Keizer & Blom, 2007: 15). For example, a public procurer might find sustainable procurement important, but if his supervisors or financial department do not agree, it will be much more difficult to procure sustainably.

All organisational activities, including the procurement of goods and services, are based on routines (Levitt & March, 1988: 320). Organisational routines are “rules that allow people to select elements of a repertoire in order to construct sequences of behaviour that make sense to others in the organisation” (Feldman & Pentland, 2003: 623). Organisational routines consist of sequences of routine behaviour. Introducing change questions existing routines (and thus behaviour) and leads to new practices (new behaviour) which, if it becomes embedded in the organisation, forms a new organisational routine (Becker et al., 2005; Jones, 2003).



The procurement process is a special type of decision-making process and is full of organisational routines. The decisions of procurers, who work in dedicated project teams, determine whether or not the full potential of sustainable procurement is applied in the procurement projects (Günther & Scheibe, 2006). Although corporate leaders and employees have begun to recognise their role in contributing to sustainability (Lozano, 2012), previous procurement policies have made public procurers develop risk-averse behaviour and less prone to engage in risky innovative projects (Rolfstam, 2012), such as sustainable procurement. Studies conducted in EU countries for example show how purchasers within the public authorities regard the legislation as complicated and, therefore, choose to play it safe in order to avoid situations where bidders involved in a tendering process might appeal a contract (Knutsson & Thomasson, 2014; Schapper, Malta, & Gilbert, 2006). Thus, public procurers are required to change their existing procurement behaviour to fulfil the potential of sustainable procurement and to reach a higher degree of sustainable procurement in their project.

To influence behaviour and routine change requires an understanding of what makes people willing to change their behaviour and organisational routines. Therefore, it is relevant to investigate what and how factors and actors influence the implementation of SPP in procurement projects.

In the next section we discuss the issues related to the implementation of organisational change in the public sector and subsequently apply them to the implementation of SPP.

## **2.6. CHANGE MANAGEMENT ISSUES**

Change management literature identified five issues that play an important role in the management of organisational change: content; context; process; outcome; and, leadership (Kuipers et al., 2014). Factors belonging to these should be examined when studying a change as they all highlight a different aspect of organisational change and can help identify the specific characteristics of an organisational change that influence its successfulness (Kuipers et al., 2014). We use these issues as a framework for examining the role of organisational factors and actors in the implementation of SPP. However, a complete model of change should address not only macro-level forces, such as content, process, and contextual factors, but also micro-level factors, such as characteristics of the individual employees (Walker, Armenakis, & Bernerth, 2007). Therefore, we added an individual level to the framework that we expected also plays a role in the implementation of SPP. In the following sub-paragraphs we

discuss each aspect of the framework in depth, as well as the role of factors and actors in the implementation of SPP.

### 2.6.1 Content

Content issues refer to changes being implemented that are specific to each organisation (Walker et al., 2007). The content of change refers to what changes in an organisation (Van der Voet, 2014) and includes the organisation's strategies, structures and systems (Armenakis & Bedeian, 1999). They are primarily factors that underlie the organisation's long-term relationship to its environment and define its overall character, mission, and direction (Armenakis & Bedeian, 1999). Studies show that, when there is a fit between the content of the change and the organisation's strategic vision, employee commitment to the change increases (Noble & Mokwa, 1999; Parish, Cadwallader, & Busch, 2008). In the case of sustainable procurement, the more congruent the policy on SPP is with the overall strategic vision of the organisation, the more public procurers will be committed to implement SPP.

### 2.6.2 Process

The process of change refers to how organisational change comes about (Van der Voet, 2014). Therefore, process issues refer to the actions taken during the introduction and implementation of the proposed change (Armenakis & Bedeian, 1999; Walker et al. 2007). Process issues can refer to the actions taken by change agents during the introduction and implementation of the proposed change (Walker et al., 2007) such as: actions regarding participation and involvement in the change; communication about the change; and the perceived fairness of the change process (Choi, 2011). In the case of sustainable procurement, the public procurement process is a special decision-making process where the decisions of procurers and project teams determine if the full potential of sustainable procurement is used (Günther & Scheibe, 2006). Key actors should be encouraged to enact new behaviour to optimise SPP (Armenakis & Bedeian, 1999). Organisational change literature awards this encouraging role to change agents, as they can increase employees' readiness for change by influencing their beliefs, intentions and, ultimately, their behaviour (Armenakis et al., 1993). Change agents operate in an organisational change process typically consisting of several phases that take considerable amounts of time to unfold (Armenakis & Bedeian, 1999). A change agent is 'an internal or external individual or team responsible for initiating, sponsoring, directing, managing or implementing a specific change initiative, project or complete change programme' (Caldwell, 2003: 139-140). Any actor, at any level in an organisation, can become a change agent (De Caluwe & Vermaak, 2003). Organisational change literature suggests many possible actions for change agents including: to envision, initiate, sponsor, adapt or carry forward change; to build

support, direct, manage, listen, reflect, cooperate, refine, lead, train or educate; or to provide advice, expertise or process skills (Caldwell, 2003; Kendra & Taplin, 2004). Recent sustainability studies highlight the importance of change agents as potential catalysts of sustainability initiatives (Dunphy, Benn, & Griffiths, 2007; Van der Heijden, Cramer, & Driessen, 2012). However, no study as yet has examined empirically the role of change agents in the implementation of sustainable procurement. Therefore, the role of change agents in the implementation of SPP was examined in the second empirical study of our research.

However, not only the actions by change agents are shaping the process towards more sustainable procurement and, thus influencing, actors to implement SPP. Procedures also influence this process. For example, think of the development of environmental criteria documents. Studies have demonstrated that the perceived fairness of such procedures and policies are related strongly to employees' positive attitudes, values, and supportive behaviour towards the organisation and change (Colquitt, 2001; Foster, 2010). Thus, procedures can shape the reaction of employees to a change and, thereby, influence the implementation process of that change. In the case of sustainable procurement this means that the more that procurers perceive the procedures (e.g. the development of the environmental criteria) used to implement sustainable procurement are just, the more they are favourable towards implementing them. The procedures used and perceived justness is regarded as a process factor likely to influence the implementation of sustainable procurement. The role of procedural justice in the implementation of SPP was examined in the fourth empirical study.

### 2.6.3 Context

Context issues are related to the organisation's internal and external environments (Kuipers et al., 2014). Scholars have emphasised the impact of situational variables on the successfulness of a change (Choi, 2011). Thus, contextual issues refer to pre-existing forces in the organisation's external or internal environment, such as technological advances; levels of professionalism; organisational slack; leadership; and history of change (Armenakis & Bedeian, 1999; Walker et al., 2007), that have been found to influence the change. This may be because, for example, they reduce employee commitment to change (Armenakis & Bedeian, 1999; Choi, 2011). Unfortunately, for organisations it is very difficult to change external context issues (Walker et al., 2007). So, in our research we focus on internal contextual factors that organisations can influence more easily.

In the case of the change towards more SPP how the publicness of the organisation is an important contextual factor. As stated earlier, public procurement is considered to be vastly different from private purchasing due to distinct internal, external, con-

textual, and process demands that exist in the public sector, but that are absent in the private sector (Telgen et al., 2007). Public procurement is subject to public review and, as a result, requires complete transparency (Walker & Brammer, 2009). This need for transparency is enforced via national and international rules, regulations, laws, and procedures, such as the EU Public Procurement Law. This results in public procurement being highly formalised. However, formalization, or the degree to which organisational activities are manifested in written documents regarding procedures, job descriptions, regulations and policy manuals (Hall, 1996; Van der Voet, 2014), can result in negative effects known as red tape (Bozeman & Scott, 1996; Van der Voet, 2014). Red tape is defined as 'rules, regulations and procedures that remain in force and entail a compliance burden, but do not serve the legitimate purposes the rules were intended to serve' (Bozeman, 1993). Formalization only results in red tape when the observed rules do not further the objective of the organisation and resources are wasted (Bozeman & Feeney, 2011). Red tape has always been an issue for public procurement. As early as 1919, a scholar wrote about red tape hampering procurers in bidding, delivering goods and paying bills (Thomas, 1919). Since then, this issue has not lessened (Thai, 2001).

There is little empirical evidence relating red tape to change. Thus, our argument is based on broader literature about organisational change, employee motivation, and commitment. Red tape has been found to play a negative role on employee satisfaction in public organisations (Giauque et al., 2012; Pandey & Scott, 2002) and is related negatively to the implementation of IT innovations (Moon & Bretschneider, 2002). High degrees of red tape can delay and interrupt decisions to implement innovations and, thereby, influence the mind-set that binds the procurers to the action deemed necessary for the successful implementation of sustainable procurement. We examine the role of red tape as a contextual factor in the implementation of sustainable procurement in chapter 7.

#### 2.6.4 Outcome

Armenakis and Bedeian (1999) raise criterion variables that refer to the outcomes of change. The outcomes of change are conceptualised in very different ways by different authors (Kuipers et al., 2014). For example, the attitudes, behaviour and experiences of those involved with the change, as well as objective outputs of the change, are mentioned as outcome criteria of the change (Kuipers et al., 2014). In the case of the implementation of SPP, we identified the following three outcome criteria: commitment to implement sustainable procurement; sustainable procurement behaviour; and, the degree of sustainable procurement in procurement projects.

### *Outcome: commitment to change*

Commitment to change is the first outcome criterion in our research. Commitment to change often is found to be one of the most important aspects in explaining employees' behaviour and desirable work outcomes in general (Choi, 2011; Meyer, Stanley, Herscovitch, & Topolnytsky, 2002). In the field of sustainable procurement, specifically, commitment is considered to be an important factor in determining the degree of sustainable procurement and, where an organisation is placed on the continuum from innovator to laggard (Erdmenger, 2003; Hoejmosse & Adrien-Kirby, 2012; Michelsen & de Boer, 2009). Commitment was conceptualised originally in terms of organisational commitment or 'the relative strength of an individual's linkage to the organisation' (Mowdays, Steers & Porter, 1979: 226 in: Choi, 2011). More recently, Meyer and Herscovitch (2002) build on their general theory of workplace commitment (2001) and proposed a model about commitment to change. They (2002) define commitment to change as 'a force (mind-set) that binds an individual to a course of action deemed necessary for the successful implementation of a change initiative'. They discern three types of commitment each fuelled by a different force. First, there is a desire to provide support for the change based on a belief in its inherent benefits (affective commitment). Second, a recognition that there are costs associated with failure to provide support for the change (continuance commitment) and, third, a sense of obligation to provide support for the change, e.g. due to peer pressure (normative commitment)' (Meyer et al., 2002: 475). In the case of sustainable procurement, commitment to change is a force that binds a procurer or project team to a course of action deemed necessary for the successful implementation of sustainable procurement in procurement projects. This "force" can be fuelled by a desire to support sustainable procurement based on a belief in the benefits of sustainable procurement (affective commitment); a recognition that not procuring in a sustainable manner will be penalised (continuance commitment); or, by peer pressure (normative). Employees do not have to be committed to the change from the start, commitment to change can occur after mandated or coerced involvement with the change (McLaughlin, 1990). Thus, if public procurers are required to implement sustainable procurement in their work, they could become committed in the process. Therefore, we examine in the first, third and fourth study the role of (all three types of) commitment to change in the implementation of sustainable procurement, as well as their relationship with the other outcome criteria.

### *Outcome: sustainable procurement behaviour*

The second outcome criterion is sustainable procurement behaviour. Sustainable procurement behaviour embodies the "actions by the procurer to incorporate (environmental) sustainable procurement in the procurement process". For example, find-

ing additional information about sustainable procurement or stimulating suppliers to develop sustainable solutions. Sustainable procurement behaviour is not routine behaviour. It requires procurers to change their regular procurement behaviour. However, previous policies have made procurers risk averse and less likely to engage in risky innovative projects (Rolfstam, 2012), such as sustainable procurement. For example, to avoid potential legal conflicts, public procurers tend to favour past practices (Palmujoki, Parikka-Alhola, & Ekroos, 2010). Thus, public procurers have to change their procurement behaviour to be able to engage in sustainable procurement.

#### *Outcome: degree of sustainable procurement*

The first, and perhaps most obvious, outcome variable to be examined when we study the change towards more SPP is the degree of SPP. We conceptualised this as the degree in which the procurer uses: A) the compulsory ecological criteria; and/or, B) voluntary additional ecological criteria in their procurement projects. The inclusion of both compulsory and voluntary ecological criteria in their procurement project results in the highest degree of SPP.

This conceptualization is based largely on the Dutch policy on sustainable procurement. This policy contains requirements that have to be applied when procuring goods and services and aspirations for public procurers voluntarily to go beyond those basic requirements and include more sustainability in their procurement projects.

Procurement projects typically take a very long time to finish. Between the moment of determining the award and selection criteria and the actual delivery of the goods, services, or road works project, can be several years. In addition, procurers often are not responsible for the latter part of the project. Within the timeframe of our research it was impossible to examine if the most sustainable offer was indeed selected and delivered. Therefore, we examined the degree of sustainable procurement of the award and selection criteria, as this was the aspect that the policy on SPP focuses on.

#### 2.6.5 Leadership

Leadership has gained increasing attention in the change management literature (Kuipers et al., 2014) and is considered one of the key drivers of organisational change implementation (Herold, Fedor, Caldwell, & Liu, 2008; Higgs & Rowland, 2005; Van der Voet, 2014). Traditional change management literature often points to the pivotal role that top management support play in the implementation of organisational change (e.g., Fernandez & Rainey, 2006; Kotter, 1995; McNulty & Ferlie, 2004).

Within the procurement and sustainable procurement literature, a similar role is given to top management support (Hoejmose & Adrien-Kirby, 2012). For example, a

study by Brammer and Walker (2011) found leadership and management support to be critical in the implementation of sustainable procurement. If managers are supportive and incorporate sustainable procurement in their strategies or goal setting, project teams indeed will procure sustainably (Brammer & Walker, 2011). Ageron et al. (2011) came to a similar conclusion seeing top management support as necessary and a key driver for successful sustainable supply chain management. This importance could be (partly) explained by the fact that top managers facilitate, ensure, and deploy organisational resources to meet the goals of the organisation and individual departments (Hoejmose & Adrien-Kirby, 2012). In the public sector, top management support not only requires support from the political top, but also from top-level civil servants (Fernandez & Rainey, 2006). We examine the role of top management support in the implementation of SPP specifically in our research.

In addition to top management support, the organisational change literature also points to the importance of the leadership style for the successfulness of a change. Transformational leadership is the most frequently studied antecedent of employee commitment to change (Herold et al., 2008; Podsakoff, MacKenzie, & Bommer, 1996). Transformational leaders can communicate a vision and bring employees together to achieve a change goal. Because they have the trust, admiration, loyalty, and respect of their followers and they become motivated to do more than they are originally asked to do (Podsakoff et al., 1996; Yukl, 1999). Thus, transformational leadership is often found to positively influence commitment to change (Herold et al., 2008; Michaelis, Stegmaier, & Sonntag, 2010). Although the role of top or senior managers is highlighted often for the initiation of a change, direct supervisors also have an important role during the implementation of change (Van der Voet, 2014). For example, studies show that employees prefer to receive delicate information related to their job from their direct supervisors (Allen, Jimmieson, Bordia, & Irmer, 2007) who can try to raise awareness for the organisational change, explain what is required of employees and attempt to identify and remove potential resistance to change (Van der Voet, 2014).

In our third study (chapter 6) we examine whether a transformational leadership style of the direct supervisor influences the implementation of sustainable procurement.

#### 2.6.6 Individual

All individuals within organisations have dispositional and personality characteristics. These individual differences may influence their reactions to the change during organisational change efforts (Choi, 2011; Walker et al., 2007). In the case of sustainable procurement, the literature points to two important individual characteristics that could be influencing the implementation of sustainable procurement: knowledge

about sustainable procurement and the environment, and ecological sustainability attitude.

Sustainable procurement is a difficult and often contested concept. Practitioners and scholars frequently mention access to knowledge as a potential driver of or barrier to sustainable procurement (Bowen et al., 2001; Meehan & Bryde, 2011; Walker & Brammer, 2009). For example, 80% of (both public and private) purchasers lack a clear understanding of the term sustainable (Snell, 2006). Lacking an understanding of what sustainable procurement is and what it can do, makes it difficult for procurers to see its potential, such as the potential to realise economic benefits (Bowen et al., 2001). Studies in the more general field of ecological behaviour show that knowledge directly influences the behaviour of people. For example, one study showed that consumers tended to stay away from situations where they have too little knowledge to act as a framework for their behaviour (Kaplan, 1992). In another study, hotel employees were more willing to implement green practices in their hotels when they were knowledgeable and showed more ecological behaviour (Chan, Hon, Chan, & Okumus, 2014). In the case of sustainable procurement a lack of knowledge means that the procurers have to interpret information based on their existing knowledge and old routines, which are no longer appropriate to the situation, causing them to make safe and traditional choices (Meehan and Bryde, 2011) and not use the full potential of sustainable procurement. The several studies mentioned above point to knowledge as an important barrier or driver of sustainable procurement. Yet, no study so far has shown how it is impacting on the implementation of sustainable procurement. We examine the role of knowledge about sustainability and the environment in the implementation of sustainable procurement in the first and third empirical study, in chapters 4 and 6.

Sustainability is a subject which people have very different personal attitudes towards. Various studies show that people actively select and believe information that matches their personal values (value congruence). For example, a public procurer who loves nature and tries to be very environmentally friendly in his personal life might be more committed to implementing sustainable procurement than a procurer who ignores nature and the environment and does nothing environmentally friendly at home. We therefore try to find out whether personal values and attitude towards sustainability play a role in the implementation of SPP, in chapter 7.

### 2.6.7 Factors and/or actors?

Previously, we discussed several factors that influence the change towards sustainable procurement behaviour. We identified important factors for each issue of change that were expected to play a role and which we would assess in one or more of the



empirical studies. It becomes apparent that it was not just organisational factors that are important in the implementation of sustainable procurement (e.g. red tape and fit with vision), but that actors are important also, as the factors studied (change agents, top management support and transformational leadership) all refer to actions carried out by actors (e.g. specific individuals) who are expected to play a role in implementing sustainable procurement. However, change agents or managers are not alone in this as public procurers themselves are perhaps the most important actors. Their commitment and behaviour are, according to the literature, two important outcome criteria for the implementation of sustainable procurement. Thus, it is not possible to examine the role of factors in the implementation of SPP without also looking at the role of actors. We look at both the extent and role of organisational factors and actors in the implementation of SPP in this research.

## 2.7. CONCLUSION

Procurement in the public sector is vastly different from private purchasing as a result of its own very specific demands. One key distinction is the notion that public procurement is used as a policy tool to reach desired outcomes in society. The Dutch national government wants to stimulate the market for sustainable goods and services and act as a role model. However, they add complexity by implementing sustainable procurement to an already complex procurement process. Implementing sustainable procurement requires organisational routines with regard to the resources, competences, and capabilities of the staff as well as the organisation to be changed (Gold et al., 2010: 230). Therefore, the implementation of sustainable procurement should be viewed as an organisational change. Six different issues should be examined when studying a change: process; content; context; leadership; and, outcome and individual level issues (Kuipers et al., 2014). In implementing sustainable procurement both factors and actors play a role in enacting this change. Based on the literature from both sustainable procurement and change management the most prominent factors for the implementation of SPP are identified for each issue: change agents and procedural justice (process); red tape (context); fit with vision (content); top management support; transformational leadership (leadership); commitment to change; sustainable procurement behaviour; and, degree of sustainable procurement (outcome).

Many factors are inherently tied to actors (e.g. change agents, transformational leadership, top management support) or involve behaviour, attitudes, or commitment to change of actors. Thus, it is also necessary to examine the role of actors in these five change issues to gain a full insight into the implementation of sustainable procurement. Adding individual level factors to the research (knowledge and ecological sus-

tainability attitude) allows us to examine whether personal characteristics and issues also play a role in the implementation of sustainable procurement.

In four different empirical studies we will examine the role of these factors and the actors involved in the implementation of sustainable procurement. The first is a comparative case study (chapter 4) that looks at the role of top management support, commitment to change, and knowledge. The second is also a comparative case study (chapter 5) examining the role of change agents in seven procurement projects. The third study (chapter 6) surveys public procurers working in the Dutch national government and the influence of commitment to change, knowledge, and sustainable procurement behaviour on the application of sustainable public procurement. The fourth study (chapter 7) uses the same survey sample to examine whether procedural justice, red tape, commitment to change, fit with vision, and ecological sustainability attitude influenced the sustainable procurement behaviour that procurers working in the Dutch national government show.





# Chapter 3

# Methodology





### 3.1. INTRODUCTION

The previous two chapters have introduced the research problem and the theoretical perspectives. This chapter explains how we examine the research problem. First, we review the design of research in the field of sustainable procurement. Second, we explain what kind of research design was used in our research. This is followed by a discussion of our research methods. The four subsequent empirical studies at the heart of this research are then discussed and the chapter concludes with a short summary.

### 3.2. REVIEW OF RESEARCH DESIGNS OF EXISTING RESEARCH

As explained previously, our research aims to add to the existing literature on sustainable procurement. We examine existing research designs in order to fully benefit from these existing insights and to progress the field methodological further. Therefore, we review these research designs in the field of sustainable procurement first.

#### 3.2.1 Existing sustainable procurement research

Recently research into sustainable procurement has been growing fast. Despite this growth, a number of methodological limitations are clear.

The first limitation is a lack of explanatory studies. Most studies into sustainable procurement are descriptive or exploratory, regardless of the research design used. Several studies describe what kinds of sustainable procurement practices are present, or what the biggest barriers to sustainable procurement are. However, these fail to explain how these barriers can be influenced or what causes the sustainable procurement practices to be present (Ho et al., 2010; e.g. Meehan & Bryde, 2011; Parikka-Alhola, 2008). Sometimes, the studies will try to explain what problems are and what is causing the problem, but fail to show what research their findings are based on (e.g. Qiao & Wang, 2011). If the field of sustainable procurement research is to mature we need not only what questions, but also how and ‘what can we do’ questions, and to be sure that these questions are answered based on rigorous research.

Lately, there have been some studies that try to explain or test the relationship between variables (Brammer & Walker, 2011; Testa, Iraldo, Frey, & Daddi, 2012; Zhu, Geng, & Sarkis, 2013). Most studies have focused on the national, regional, or organisational level, rather than on the level of the procurement project, or the individual procurer. Most qualitative and mixed-method studies also focus on the macro level of the organisation, region or country. But, as actual procurement takes place inside

projects, the implementation of sustainable procurement should be examined at higher organisational levels.

The second limitation is the lack of both qualitative and quantitative studies into sustainable procurement at the project or individual level. Researchers have overlooked and underestimated the importance of actors at these levels by examining just the implementation of sustainable procurement at the organisational, national, or even international level. This makes it impossible to make statements about the role of actors in the implementation of sustainable procurement.

Third, there are limited possibilities for statistical generalization of research findings. A large number of studies are conducted in the private sector or are specifically aimed at businesses. However, as explained in the previous chapter, public procurement is considered to be vastly different from private purchasing (Harland et al., 2013; Thai, 2001). These differences mean it is difficult to generalise findings from the private sector across to the public sector and vice versa. Our research tries to increase the statistical generalizability of these findings to public sector organisations by using insights from sustainable procurement research in general and applying them to the Dutch national government.

The fourth and final limitation of research involves the limited amount of analytical generalization (Yin, 2009). Few studies use previously developed theory as a template to compare the empirical results of the study (Yin, 2009). For example, most studies do not account theoretically for the characteristics of the organisation or country that could influence the implementation or uptake of sustainable procurement. It was difficult to analyse and generalise the findings from existing studies. This poses a limitation for the development of the field.

The main conclusion from the above discussion on limitations is that most studies are descriptive and exploratory and fail to test relationships between the variables that they deem important for the implementation of sustainable procurement. We argue in the next section that, due to the lack of generic studies into the role of factors and actors in the implementation, a mixed-method design was the most appropriate as this allow us to explore first the role of factors and actors in the implementation of SPP in qualitative case studies and, subsequently, to test some findings in a quantitative study.

### **3.3. DESIGN OF OUR RESEARCH**

Sustainable procurement has been studied using quantitatively, qualitatively and mixed-method research designs. Qualitative research is defined as “the non-numer-



ical examination and interpretation of observations, for the purpose of discovering underlying meanings and patterns of relationships” (Babbie, 2010: G9). Whereas, quantitative research is defined as “the numerical representation and manipulation of observations for the purpose of describing and explaining the phenomena that those observations reflect” (Babbie, 2010: G9). Quantitative and qualitative research are often considered to be part of different epistemologies. Quantitative research is often associated with objectivist research, which presumes that reality exists independent of the researcher (Gray, 2009). Whereas qualitative research is associated with constructivist research, which sees truth and meaning as constructed and interpreted by individuals (Gray, 2009).

Although these research methods might often be based on different epistemologies, this does not mean that they are mutually exclusive. Both qualitative and quantitative research methods are used in mixed-method research where a more pragmatic research epistemology is used “that views knowledge as being both socially constructed and based upon the reality of the world we experience and live in” (Johnson et al., 2007, in: Gray, 2009). Mixed-method research is defined as “the collection or analysis of both quantitative and qualitative data in a single study in which the data are collected concurrently, or sequentially, are given a priority, and involve the integration of data at one or more stages of the process of the research” (Creswell & Clark, 2011).

The choice for a research design should be based on the objectives of the research, as well as the characteristics of the empirical phenomenon being studied and the research question being asked (Gerring, 2007; Swanborn, 2002). A mixed-method research design was deemed the most fitting design for our research for the following three reasons:

*First*, a mixed-method research design allows us to combine exploration with generalization. Given the relative ‘newness’ of the field of sustainable procurement research and the subsequent lack of research at the project level, a mixed-method design lets us begin with a qualitative phase where we can explore the organisational factors that could influence the implementation of sustainable procurement at the project level, and then follow-up with a quantitative phase to test whether the qualitative results can be generalised (Creswell & Clark, 2011). Therefore, an exploratory sequential design was selected where the research starts with qualitative data collection and analysis in phase 1. This was followed by quantitative data collection and analysis in phase 2 that builds on phase 1 (Creswell & Clark, 2011). Combining qualitative and quantitative research methods allows us to go beyond exploration and description and towards explanation and confirmation. The mixed-method design helps overcome the limitation in the field of a lack of explanatory studies, while also paying attention

to overcoming the limitation of limited analytical generic applications and outcomes (compare the preceding section).

A case is defined in this research as a 'procurement project where goods and services that fall under the sustainable procurement policy are procured by a dedicated project team, consisting of procurement professionals working within the Dutch national government'.

*Second*, the exploratory sequential design fits the overall research design as it allows us to answer different research questions. For each empirical study a different research question was answered.

*Third*, by combining qualitative and quantitative research methods we can triangulate the findings and see if they are mutually corroborated (Creswell & Clark, 2011). Every type of research method offers its own perspective on the problem. We can provide a better and more substantive picture of reality by combining several research methods and, thus, lines of sights (Berg, 2009).

Our research examines the question of how organisational factors and actors influence the implementation of SPP using multiple research methods. The role of three organisational factors was explored in the first empirical study (chapter 4) using qualitative methods, followed by a qualitative comparison of the role of change agents in seven cases of SPP in the second empirical study (chapter 5). The third and fourth empirical studies (chapter 6 and 7) build on findings from the first exploratory and qualitative study (chapter 4) and study the relationship between commitment to change, knowledge, behaviour and the degree of SPP using quantitative methods. Thus, the quantitative studies are largely shaped by the findings from the qualitative studies.

### 3.4. OVERVIEW OF THE FOUR EMPIRICAL STUDIES

The overall aim of this research is to gain insight in the implementation of SPP and explain how factors and actors influence the implementation and uptake of SPP. In line with the aim of the research, the main research question is: *To what extent and how do organisational factors and actors influence the implementation of sustainable public procurement in the Dutch national government?*

As stated earlier, a sequential mixed-method design was selected for this research. This design allows us to combine the necessary exploration (due to gaps in the literature and a lack of generalizability of research) with the explanation that was required

to answer, not only the research question, but also to fill gaps in the literature and help advance the field.

The role of different factors and actors were examined in four empirical studies. The first two are qualitative exploring the role of three specific factors and change agents on the implementation of SPP and the degree of sustainable procurement in seven different cases of SPP. The insights generated were incorporated in the two final quantitative studies where all procurers working in national government were sent a questionnaire. This approach tested hypothesised relationships among variables to allow us to generalise the findings further and allow us to deal with the limitations of existing research as discussed in section 3.2.1. The next sections discuss the methodology of each empirical study in-depth.

#### 3.4.1 Chapter 4: exploring the role of organisational factors

The first empirical study has a qualitative research design to explore and explain the role of three organisational factors in sustainable procurement projects. The main research question of this study is: *How do organisational factors influence the degree of sustainable procurement in public procurement projects in the Dutch national government?* A combined case study approach was used to reconstruct the process towards sustainable procurement and to explain the difference between the degrees of sustainable procurement between the cases. A case study was deemed the best approach, as this allowed us to research both “how” and “why” the degree of sustainable procurement was influenced by organisational factors. We were able to trace a process that leads to a certain degree of sustainable procurement by combining a causal process tracing approach and a co-variational approach thus enhancing the internal validity of the claim that the organisational factors matter (Blatter & Haverland, 2012; Gerring, 2007). Using a causal process tracing approach required that we selected our cases based on the dependent variable (degree of sustainable procurement). Selecting two cases within the same organisation allowed us to control for other organisational factors (e.g., organisational culture), while still varying the dependent variable. In addition, projects were comparable in size and duration, a dedicated project team procured them, and they were at the same stage of the procurement process. In total, ten semi-structured interviews were conducted with key actors in the procurement projects. The interviews were recorded and transcribed verbatim and coded according to the study’s central concepts using Atlas.ti software.

### 3.4.2 Chapter 5: exploring the role of change agents in sustainable procurement projects

The study objective discussed in chapter 5 was to explore the role of change agents in sustainable procurement projects and their influence on the degree of sustainable procurement projects. Recent sustainability studies highlight the importance of change agents as potential catalysts of sustainability initiatives (Dunphy et al., 2007; Van der Heijden et al., 2012). However, the sustainable procurement literature has not studied the role of change agents in depth. Our study has tried to close this gap in the literature by answering the following research question: *What role do change agents play in sustainable procurement projects in the Dutch national government?* The study used a co-variational design and semi-structured interviews were the main source of data. This design and method allowed us to explore whether and how change agents were involved in sustainable procurement projects. Seven relevant cases of sustainable procurement were selected via a snowball procedure within two public organisations: the Dutch Ministry of Defence and the Dutch Agency of Public Works and Waterways.

A case is defined as a procurement project procured in 2012-2013 and carried out by a dedicated project team consisting of procurement professionals working in a procurement department of a ministry or agency. A case was considered relevant if it fell under one (or more) of the 52 product categories of the Dutch SPP policy, and if the degree of sustainable procurement could be determined. The cases were selected based on an expected variance in their degree of sustainable procurement. Organisational and project characteristics were kept similar regarding, for example, the type and size of the organisation and procurement department, as well as the size (> 1 million Euros) and duration (> one year) of the project. In total, 35 interviews were held (on average five per case). The interviews lasted, on average, between 1 and 1.5 hours and were recorded and transcribed verbatim. All the transcripts were systematically and manually analysed on a case-by-case basis to facilitate the analysis and to allow for a systematic comparison of variables in and across the cases. A log containing the origins of all the quotations was kept. The analysis was based on a co-variational approach (Blatter & Haverland, 2012) in which the roles and activities of the change agents and their influence on the degree of sustainable procurement were compared across the seven cases.

### 3.4.3 Chapter 6: sustainable procurement behaviour as a mediator

The objective of the third empirical study discussed in chapter 6 was to propose and to examine a conceptual framework about sustainable procurement behaviour. The model incorporated insights from the first study into the conceptual model.

The main research question of this study is *Does the individual sustainable procurement behaviour of public procurers influence the implementation of sustainable public procurement in public procurement projects and what influences their behaviour?* A quantitative survey was deemed the best research method as it allowed us to test the proposed conceptual model. Public procurers working in the Dutch national government filled out the web-based survey concerning the study's main concepts. The overall number who responded was 288 persons; a response rate of 31.3% out of the total population sampled of 919 persons. The conceptual model hypothesised that sustainable procurement behaviour mediates the relationship between affective commitment to change, knowledge, and the degree of sustainable procurement behaviour. As such, a software program and data analysis method were needed to test both the significance of the mediation and the fit of the conceptual model to the data. A structural equation model (SEM) that posits causal relations among the variables with AMOS Graphics version 20 was tested. The overall fit of the models was used using a combination of absolute and relative fit indices (Kline, 2011): relative chi square (CMIN/DF); a goodness of fit index (GFI); a comparative fit index (CFI); a root mean square error of approximation (RMSEA); and, the P of Close Fit (PClose). As the conceptual model includes mediation effects, a bootstrapping method was also employed via AMOS (Hayes, 2009) where 5,000 samples (with replacement) were created for the available observed sample. The significance of the indirect relations was calculated via these samples. The descriptive statistics and basic inferential statistics were calculated with IBM SPSS Statistics version 21.

#### 3.4.4 Chapter 7: determining the antecedents of sustainable procurement behaviour

The objective of the fourth empirical study discussed in chapter 7 was to propose and to test empirically a conceptual framework about commitment to change and sustainable procurement behaviour. The conceptual framework suggests that the degree of sustainable procurement behaviour is influenced by commitment to change that, in turn, is influenced by different aspects of the organisational change. Insights from the previous case study discussed in chapter 4, as well as the quantitative study discussed in chapter 6, are incorporated in this conceptual model and hypotheses.

The main research question of this study is: *Is the sustainable procurement behaviour of Dutch public procurers influenced by commitment to change and what are the antecedents of their commitment to change?* In this chapter a survey was deemed the most fitting research method as it allows us to test whether there was a causal relation between commitment to change, sustainable procurement behaviour and the hypothesised antecedents. This study was based on the same sample as employed in

study 3 in which public procurers working in the Dutch national government were asked to fill out a web-based survey concerning the study's main concepts. The overall response was again 288 persons and a response rate of 31.3%. Regression analyses were conducted with IBM SPSS Statistics software (version 21) to test the hypotheses laid down in the conceptual model. In addition, a bootstrap analysis was conducted to test the significance of the hypothesised indirect effects.

### 3.5. SUMMARY

The mixed-method research design allowed us to combine exploration with generalization to answer different research questions and to triangulate the findings and see if they are mutually corroborated (Creswell & Clark, 2011). It also let us to deal with existing limitations in SPP research, such as the lack of explanatory and confirmatory studies and limited generalizability.

Four empirical studies were carried out to examine the two research objectives and answer the research questions. The next table shows the different designs, methods, case selection, and data analysis techniques of the four empirical studies.

**Table 3.1:** Outline of the empirical studies

Chapter	Design	Method	Case / Population	Data analysis techniques
4	Qualitative: case studies (co-variation & causal process tracing)	Semi-structured interviews	1) Vehicles (Ministry of Defence) 2) Quay (Ministry of Defence)	Back-and-forth coding (Atlas.ti)
5	Qualitative: case studies (co-variation)	Semi-structured interviews	1) Highway (RWS) 2) Sluice Eefde (RWS) 3) Sluice Limmel (RWS) 4) Cleaning, catering & Security services (RWS) 5) Hot beverage machines (Ministry of Defence) 6) Vehicles (Ministry of Defence) 7) Quay (Ministry of Defence)	Systematic analysis (manual)
6	Quantitative: survey	Survey	Dutch national government	SEM (AMOS)
7	Quantitative: survey	Survey	Dutch national government	Regression analysis & Bootstrap (SPSS)







# Sustainable procurement in practice

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## 4.1. INTRODUCTION

Since the 1980s, sustainable procurement has been applied worldwide as a mean of addressing and reducing negative environmental impacts related to the production and consumption of products (Ho, Dickinson, & Chan, 2010). In 2005, sustainable procurement was high on the Dutch political agenda with the acceptance of a motion in the House of Representatives. The Dutch national government wanted to use their annual spending of more than 10 billion euro to stimulate the market for sustainable goods and services and to act as a role model. Research on sustainable procurement indicates that procurement is indeed a policy tool that can help achieve desired outcomes in society and is critical in driving forward the sustainability agenda (Brammer & Walker, 2011; Carter & Rogers, 2008; Green, Morton, & New, 1998; Ho et al., 2010; Meehan & Bryde, 2011; Preuss, 2009). External pressures are often crucial in kick-starting the engagement of organisations in sustainable procurement; however, for it to become truly successful, certain organisational factors are needed (Hoejmosse & Adrien-Kirby, 2012). It is inside the organisation that changes have to be made and barriers removed to achieve the desired outcomes in society.

The sustainable procurement literature has given much attention to the identification of barriers to sustainable procurement (Ageron, Gunasekaran, & Spalanzani, 2011; Giunipero, Hooker, & Denslow, 2012; Günther & Scheibe, 2006; Meehan & Bryde, 2011; Michelsen & de Boer, 2009; Preuss, 2009; Varnas, Balfors, & Faith-Ell, 2009; Walker & Brammer, 2009). According to our reading of the literature, these barriers are part of three organisational factors: commitment, top management support, and expertise. Although the literature on sustainable procurement clearly identifies these factors as being influential (Meehan & Bryde, 2011; Preuss, 2009; Walker & Brammer, 2009), no attention has been given to how these factors actually influence the degree of sustainable procurement. This chapter addresses this issue and answers the question: *how do organisational factors influence the degree of sustainable procurement in public procurement projects in the Dutch national government?*

To answer this question, two cases of sustainable procurement in the Dutch national government are studied from an organisational perspective. The organisational change literature focuses on how organisational factors influence the outcomes of change initiatives. Thus, by studying sustainable procurement from an organisational perspective, it becomes possible to go beyond the identification of organisational factors and explain how the degree of sustainable procurement is actually influenced by organisational factors.

The conceptual model is developed in the next section; in section 4.3, the research design and methods are discussed; in section 4.4, the results of the case studies are

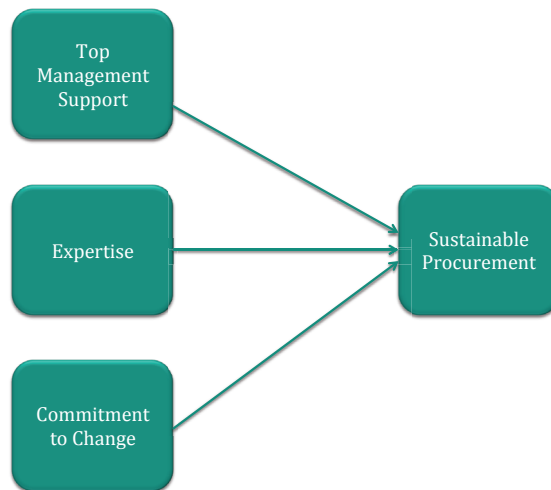
presented; section 4.5 concludes; and section 4.6 discusses future research and limitations.

## 4.2. THEORY

Based on a review of sustainable procurement literature, the factors commitment, expertise, and top management support were identified as potentially influencing the degree of sustainable procurement. Whereas commitment and top management support are considered important factors of successful change in both sustainable procurement and organisational change literature, expertise as an influencing factor is derived from the sustainable procurement literature only.

The conceptual model below (figure 4.1.) shows how these three factors are expected to influence the degree of sustainable procurement.

**Figure 4.1.** Conceptual Model.



The commitment of project teams engaged in procurement to embrace policy objectives or strategies is considered essential to generating the effort and energy necessary for a successful project, and it determines where an organisation places itself on the continuum of innovator to laggard (McLaughlin, 1990; Meyer & Herscovitch, 2001; Meyer, Stanley, Herscovitch, & Topolnytsky, 2002; Parish, Cadwallader, & Busch, 2008; Preuss, 2009). A study of Brammer and Walker (2011: 472) showed top management support to be a significant factor in the implementation of sustainable procurement. If managers support sustainable procurement and incorporate it into

their planning, strategies or goal setting, the project teams will execute it (2011: 475). In their literature review, Fernandez and Rainey (2006) state that there is considerable evidence that top management support and commitment play an essential role in successful change in the public sector. Expertise is an organisational factor that is not (yet) considered important in organisational change theory. However, several studies on sustainable procurement have shown that without relevant expertise public procurers interpret the new situation based on their old routines, which are no longer appropriate to the situation, making traditional choices and diminishing the degree of sustainable procurement (Meehan & Bryde, 2011; Michelsen & de Boer, 2009).

#### **4.3. RESEARCH DESIGN AND DATA COLLECTION**

In this chapter, a combined case study approach was used to reconstruct the process towards sustainable procurement and to explain the difference between the degrees of sustainable procurement between the cases. A case study was deemed the best approach, as this allows us to research both “how” and “why” the degree of sustainable procurement is influenced by organisational factors. To understand how organisational factors influence the degree of sustainable procurement, it is necessary to study the process leading up to a certain degree of sustainable procurement. By combining a causal process tracing approach and a co-variational approach, we were able to trace a process that leads to a certain degree of sustainable procurement, enhancing the internal validity of the claim that the organisational factors matter (Blatter & Haverland, 2012; Gerring, 2007). Using a causal process tracing approach requires that we select our cases based on the dependent variable (degree of sustainable procurement). Selecting two cases within the same organisation allowed us to control for other organisational factors (e.g., organisational culture), while still varying on the dependent variable. Contact with policy advisors about sustainable procurement led to the identification of two procurement projects that were expected to differ in their degree of sustainable procurement. Due to confidentiality – the procurement process is on going – not all details regarding the cases can be made public, such as the exact budget or the number of vehicles that will be procured. However, both projects are comparable in size (both are large-scale projects involving millions of euros) and are procured by a dedicated project team, and the procurement process has a duration of longer than one year. Both projects were at the same stage of the procurement project: the selection and award criteria were determined, but the actual awarding of the contract had yet to occur.

Studying how the degree of sustainable procurement is influenced by organisational factors requires multiple levels of analysis. Whereas top management support is an

organisational level variable (as the top management covers the entire organisation), commitment, and expertise are project level variables (as they are unique to each project). The multilevel character of the research problem requires that we choose nested cases. Hence, a case consists of a procurement project carried out by a project team working in a procurement department that is part of a ministry.

#### 4.3.1. Data collection

The data collection was mainly based on interviews and internal documents concerning the procurement projects. Ten interviews (five per case) with key actors in the cases were carried out. The interviews were semi-structured. An extensive topic list formed the foundation for the interviews; however, the interviewees were given plenty of room to elaborate on matters or bring in subjects they felt were related to the degree of sustainable procurement of the project. The topic list contained questions regarding the implementation of sustainable procurement, commitment, the role of the top management, the existence of expertise on sustainable procurement and the implementation process of sustainable procurement. The topics were at both the project and organisational level.

Interviews were held with key actors in the projects. A snowball procedure was used to identify the key persons. Somebody was considered a key actor if he or she had a leading role in the project (e.g., project leader or procurer) or was identified as key actors (with regard to sustainable procurement) by others. In each case, the project leader, procurer, sustainable procurement policy advisors, and their supervisors were considered key actors and were subsequently interviewed. Interviews were carried out until no new respondents were suggested. The interviews, on average, lasted between 1 and 1.5 hours. All interviews were recorded and transcribed verbatim using both a word processor and speech recognition software.

#### 4.3.2. Data analysis

The main data sources for the analysis were the interview transcripts. However, internal documents and publicly accessible information about the procurement projects were also studied. To facilitate the analysis process and allow for a more systematic comparison of variables in and across the cases, all the interview transcripts were coded. The transcripts were coded using Atlas.ti. The codes were based on the topic list. During the coding process, however, additional codes were added (back and forth coding). For example, when it became obvious that certain actors were considered to be driving the change, an additional code “actor driving change” was created.

#### 4.4. TWO CASES OF SUSTAINABLE PROCUREMENT

The following sections discuss each case in depth. Each case starts with a short description of the project, followed by our assessment of the degree of sustainable procurement and the process of moving towards this degree.

The first case is the procurement of a large number of vehicles by the Defence Materiel Organisation (DMO) as a replacement for the current vehicles. The vehicles will be used in heavy terrain, but not in dangerous situations. In addition to the procurement of the vehicle itself, maintenance will be outsourced for a period of ten years. The degree of sustainable procurement varied throughout the project, starting at a second degree, falling to a first degree, and eventually ended up a mix of first, second and third degrees of sustainable procurement. That the degree of sustainable procurement fluctuated throughout the project shows that the degree of sustainable procurement is a variable that can be influenced.

In the second case, the Ministry of Defence gave the Department of Defence Real Estate (part of the Support Command Shared Service Centre) the assignment to procure the design and development of a real estate project. The design and development was executed via a public tender and was awarded to the candidate with the most economically advantageous tender (MEAT). The degree of sustainable procurement increased throughout the project from a second degree (implementation of the compulsory criteria), to a third degree (sustainable award criteria) to a fourth degree (adding value).

##### 4.4.1. Vehicles

The Dutch Ministry of Defence has highly formalised the procurement process. At each stage of the procurement process, forms have to be filled out. For example, at the beginning of the procurement project the “request to procure” form has to be filled out by the project team. To ascertain that in all procurements the compulsory ecological criteria are applied, a question on the applicability of the criteria is inserted in the form. To complete the (digital) form, the question has to be answered; not answering it will raise questions later in the process. One respondent explained, *“You can of course avoid the question, but then further ahead in the project you will get that question again. If you offer the dossier up for the financial round, you will get a “hey, why didn’t you do anything with sustainable procurement?” So sooner or later you will get caught”*.

However, the project team showed normative commitment to apply the compulsory ecological criteria. The project team felt they were obligated to do so; the organisation had committed itself to this policy and, therefore, would do what they were expected to do. One respondent explained: *“In the program of demands, we of course, this is*

*more or less standard procedure, include the sustainable procurement criteria. This is also what happened now".* That the project team felt they were obligated to apply the criteria is a clear indication of normative commitment to sustainable procurement, as the following quote from a project member demonstrates: *"There is no other way; it just has to be done".*

However, when it became apparent that some of the compulsory ecological criteria clashed with the required operational uses of the vehicle, it became a different story. In exceptional situations (regarding the unique situations in which the materiel of the Ministry is used), the Ministry of Defence is formally allowed to forego the ecological criteria. The project team felt that this was the case here. They explained that the off-road usage of the vehicles prohibited the use of sustainable tyres. One respondent explained, *"I can tell you one thing, as soon as you drive into the terrain with that, you won't get very far. [..]. It requires a tread design with larger blocks and greater void, which is less optimal for the other uses. Therefore, we make concessions there. Because you have to be able to drive into terrain with it".* Even though only 5% of the time the vehicles will be driving off road, the project team decided to forego the prescribed criteria with regard to the tyres, thereby decreasing the degree of sustainable procurement.

For some time, it appeared as though the degree of sustainable procurement would remain low. However, later during the evaluation of the formal specification, the low degree of sustainable procurement was noticed. A sustainability advisor noted that the project team had not given enough attention to the sustainability of the vehicles. One of the respondents explained, *"He pointed the sustainability aspects of the vehicle out to us. At a certain moment, he said "there is nothing about sustainability in there anymore". So we fixed that, based on his advice".* The project team received this advice unsolicited. Project teams within the Ministry of Defence consist of generalists rather than specialists. If a project team requires expertise on a matter, they seek expertise outside the project team in the organisation. In this project, the project team did not seek expertise on sustainable procurement. They did, however, seek advice on the health and safety aspects of the formal specification. Nevertheless, the health and safety advisor not only advised them, but also forwarded the formal specification to a sustainability advisor in his team. The sustainability advisor wrote a memo and pointed out a number of possibilities to increase the sustainability of the vehicles. Although the project team was not required to adopt these recommendations, they did adopt most of them. For example, a number of tools to increase the fuel efficiency of the vehicles were introduced as award criteria for the MEAT approach. One respondent explained, *"They are also the people who point out to us what we could include in our formal specification. They often refer us to their site; I do not remember the name*



*now. However, just a national or European site with sustainability tips that you could include in projects. We have also looked at that site. Because of that we have, next to the requirements, added award criteria. This means that if the industry offers us that, they can get extra points*". Although the project team had not solicited additional expertise, receiving it showed them possibilities for sustainable procurement that they had not realised themselves, which shows that they lacked expertise on the matter. Receiving the advice from the advisor, an expert on sustainable procurement, increased their knowledge and thereby increased the degree of sustainable procurement of the project to a mix of first and third degrees of SPP.

However, not all offers of advice were adopted. For example, the advisor suggested purchasing two types of tyres: sustainable tyres for 95% of the time the vehicles were driving on the road and high-traction tyres for when *the vehicles were driving off road*. *This advice was not heeded. One respondent explained, "You can't keep changing tyres. So, well, that's the choice you make. [...] This vehicle also has these kinds of requirements. And then your sustainability principles diminish a bit"*. Had they followed this advice, the degree of sustainable procurement would have been higher.

Interestingly, the contact between the project team and the advisor was highly formalised. There was no direct contact between the project team and the sustainability advisor, as the two documents (formal specification and memo) were exchanged via the health and safety advisor. The project team did not even know the name of the sustainability advisor, and the advisor had no idea whether the project team adopted his advice. Thus, although the project team did receive additional expertise, the way this was exchanged was rather passive.

During the procurement, the top management was perceived as being silent, although the project team management required them to procure sustainably. One respondent said, *"We do get guidelines. In this procurement, we did get them, via the staff, but they are an addition to the guidelines from the minister and/or secretary general, or from the secretary of state. I do not know how it gets here. We were told to procure sustainably. They also send pamphlets about that, so it is definitely a guideline here"*. However, the information they received about sustainable procurement was generally aimed at the department, and the pamphlet had been placed on the intranet prior to the start of the project. It can thus be concluded that the top management was not actively involved in this project and was neither supportive nor unsupportive.

In the end, nearly all compulsory ecological criteria were applied. The project team showed a normative commitment to apply the compulsory ecological criteria as long as they did not clash with the operational requirements of the vehicles. However, in these situations the Ministry is allowed to forego the compulsory criteria due to the

specific usage of their materiel. Therefore, the project team felt that they were allowed to forego the criteria. The degree of sustainable procurement was increased after receiving expert advice on the sustainability of the vehicles. They had not sought after additional expertise themselves, as they felt that they had enough expertise. However, when the expert advice showed them other possibilities, they did feel compelled to adopt this advice and include fuel efficiency tools as award criteria for the MEAT approach.

#### 4.4.2. Real Estate

The initial assignment and preparations for the real estate project started a long time ago. Unfortunately, cutbacks stalled the project. After a number of years, the project team received approval to start preparing for the tender again. Many documents had to be rewritten, as circumstances and guidelines had changed since the initial start of the project. However, this made it possible to include new ambitions. Soon after the restart, the project team decided that they wanted to include sustainable award criteria in the MEAT approach, thereby increasing the degree of sustainable procurement. One respondent explained, *"In this case we, as a team, had already come up with that idea, and we as a team were supporting using that. And to not just go for the minimum criteria, but use sustainability as award criteria"*. The project team itself had the ambition of reaching a high degree of sustainable procurement, thus showing affective commitment to sustainable procurement in this project.

Shortly after the project team decided to include sustainable award criteria, a sustainable procurement policy advisor from their department approached them. Within the infrastructure sector, a joint initiative from several public organisations called "ustainable Infrastructure" had been launched. The superior of the advisor has a seat on the board of directors of the initiative and would soon chair a meeting on sustainability. They wanted to show that the Ministry of Defence had put sustainable procurement high on the agenda and were looking for a pilot project.

The advisor explains: *"We just really want to do it! Of course, I could write more about it, but we also needed actual projects. Therefore, we started to look for projects. I also asked around in our regional offices. At a certain moment, a head of technique in one of our regional offices approached me and said: "this might be a good project". So, I went down to talk to the project leader. We also had a "sustainable infrastructure day". We organised this in June, and I invited him to come, to see what it all meant".* During this day, the director of the advisor also spoke to the project leader. The director stated, *"I find it important to be there at that moment. To show people "hey, the management team of the real estate department finds this important", and to support the frontrunners"*.

Both the advisor and his superior were actively trying to get more people involved in the sustainable infrastructure initiative. Each of them was trying to achieve this at their own level. Whereas the director was working with directors from other organisations to develop the sector-wide initiative, the advisor was trying to spread the initiative within the department. The director explains, *“Well, you always have frontrunners and boosters within the policy department. You always have boosters and people who have that task within our Defence Real Estate Department. My advisor is one of them, and I consider it my task as well to do that”*. He explained that he could do this more easily because of the sector-wide initiative: *“For me it is also easier to convince my principals. Showing them that we are doing it together with other public organisations and the market. If you do it together, you get a lot more done than when you’re trying to draw attention by yourself”*. As the project team had already decided to include sustainability in their MEAT approach, they agreed to become a pilot project for the sustainable infrastructure approach.

Because the project is a pilot project for the sustainable infrastructure approach, building and sharing the expertise gained through this project is an important aspect of the job of the advisor within the project team. By organising workshops, presentations and writing pieces on the intranet, he tried to increase the expertise of the civil servants working in the department on sustainable infrastructure. Later on in the project, the project team became actively involved in the attempts of the advisor to make the department more knowledgeable about the sustainable infrastructure initiative by giving presentations at a workshop organised by the advisor to spread their newly acquired expertise. However, the advisor is also using the experience from the pilot as input for the new version of the Defence Sustainability policy, for which he was asked to write a number of chapters. Thereby, the advisor not only influenced the degree of sustainable procurement within this real estate project but also the degrees of procurement of future real estate projects.

Not only did the affective commitment of the project team influence the degree of sustainable procurement, but also later on in the project a personal initiative from a technician working for the project also directly increased the degree of sustainable procurement. This technician wanted to reuse excess electricity and reduce electricity spillage and costs. One of the respondents explained: *“So they transport the excess electricity back to the electricity grid. How simple can it be? It is very reasonable. However, it was one person who stuck his neck out for it. [...] He just felt that way. Moreover, in the end, he made it feasible. We were going to need some extra cables, but it turned out we were able to change the function of leftover cables in the ground, and they could reuse existing underground high-voltage cables on the terrain for the transportation of the electricity”*. The technician also showed affective commitment to sustainable pro-

curement by developing a plan on how the project could add electricity (and thereby value) rather than waste it.

The project team indicated that their direct supervisors were not always supportive of their sustainability ambitions and plans. One respondent explained, *“Well, it might be indirectly, but you’re still being slowed down. Despite all the ambitions you might have for a project, you are the one who has to realise it. So, the challenge remains yours at all times. And if you stick your neck out, you are also the one who has to make sure it doesn’t get chopped off”*. The support from the top was more mixed. On the one hand, the project team felt that the top was neutral about it and were communicating about other matters, but on the other hand they also received indications that they were supportive. For example, one respondent said, *“Well, that is quite difficult to answer, because I’ve actually never heard anybody in the top mention anything about it”*. Another respondent mentioned a top manager who heard about their project and asked them to write an article about it for their internal magazine: *“Yes, one of our national directors asked us to do that. He asked us if it was not possible to do that. Earlier I said that our national organisation supports it, and this surely happens via this director”*.

To conclude, throughout the project the degree of sustainable procurement was increased from a second degree to a fourth degree of sustainable procurement. The increases in the degree of sustainable procurement can be related to the affective commitment of the project team. A sustainable procurement advisor tried to increase both commitment and expertise about sustainable infrastructure, for example, by inviting them to workshops. Later, the project became actively involved in the workshops to spread their newly acquired expertise. The top management was perceived as silent, although one top manager did show support for their high sustainability ambitions in the project.

## 4.5. CROSS CASE COMPARISON

In the previous paragraphs about each case, the process of their degree of sustainable procurement was discussed. To explain what (might) have caused the differences in the degree of sustainability, the cases need to be compared. In the following paragraphs, first the dependent variable (degree of sustainable procurement) is compared, followed by a cross-case comparison of the independent variables.

### 4.5.1. Degree of Sustainable Procurement

The dependent variable “degree of sustainable procurement” varied both during and across the cases. In the end, the real estate case had a higher degree of sustain-

able procurement than the vehicle case. The real estate started at a second degree of sustainable procurement (implementation of the criteria); with the decision to include sustainable award criteria, the project reached a third degree of sustainable procurement. Initiatives later in the project increased the degree even further when it became possible to transport excess energy back to the electricity grid and thereby add value to the environment. The vehicle case started at a second degree of sustainable procurement. However, when certain compulsory ecological criteria clashed with the operational requirements of the vehicles, the degree of sustainable procurement decreased. After receiving unsolicited sustainability advice, sustainable award criteria were added (third degree), and the degree of sustainable procurement was increased to a third degree.

#### 4.5.2. Top Management Support

With regard to sustainable procurement, in both cases top management was perceived as silent. Respondents felt that the top is communicating about other issues. This is no real surprise, as both cases share the same top management. However, in the real estate case the project team also felt that the top was neutral and were communicating about other matters. On the other hand, they also received indications that the top was supportive of their initiative to achieve a high degree of sustainable procurement. A top manager who asked them to write an article about the initiative is an example of this support. It can be concluded that the top management is generally perceived similarly in both cases. However, in the case with the highest degree of sustainable procurement there was a positive comment from an individual top manager about their project. Nevertheless, it is unlikely that this factor caused the difference between the degrees of sustainable procurement because the perceptions of the top management are too similar.

In Walker and Brammer's (2009) research, top management support was the most frequently cited facilitator of sustainable procurement. This support was considered crucial for the incorporation of sustainable procurement in procurement processes and procedures and in government policy. In our two cases, sustainable procurement had already been incorporated into government policy and the internal procurement procedures (e.g., the digital procurement form), and the top management had committed themselves to it. Perhaps this is an indication that top management support is important in the beginning at the organisational level (to incorporate it into the organisation), but once this is arranged the degree of sustainable procurement is further affected at the project level by other factors and individual actors.

#### 4.5.3. Commitment

In both cases, the respondents showed commitment to sustainable procurement in their projects. However, the type of commitment did vary across the cases. In the vehicle case, the project team showed a normative commitment to sustainable procurement, whereas the project team of the real estate case showed affective commitment. The sustainability advisors and supervisors involved in each case showed similar commitment. In the vehicle case, the advisor and supervisor showed normative commitment, and their counterparts in the real estate case showed affective commitment.

If the type of commitment is linked to the degree of sustainable procurement, we see that in the case with the lowest degree of sustainable procurement the project team has a normative commitment. However, in the case with the highest degree of sustainable procurement, the project team has affective commitment to sustainable procurement. This is an indication that it is not merely the existence of commitment that matters; the type of commitment is also important. A closer look at how the degrees of sustainable procurement were reached explains this fact. Normative commitment is about feeling obligated to a change rather than believing in the change itself. Comparing the cases, we see that in the vehicle case very little attention to sustainable procurement was paid until an advisor pointed it out to members of the project team. When they received his advice, they felt an obligation to adhere to it, but had they not received it they would not have had the drive to ask for it themselves. This is the opposite of what happened in the real estate case. There, the project team had already set their ambitions high with regard to sustainable procurement. Prior to their contact with the advisor and throughout the procurement process, their actions were driven by their inherent belief in how their project would benefit from a higher degree of sustainable procurement, even if it meant putting in more time and energy.

It can thus be concluded that the presence of affective commitment (in these cases) can be related to a higher degree of sustainable procurement. It appears that normative commitment does not have the same effect. This is an important addition to existing studies on sustainable procurement and commitment (Michelsen & de Boer, 2009; Walker & Brammer, 2009) that found commitment to be an important factor, but did not distinguish between different types of commitment.

#### 4.5.4. Expertise

In both cases, the project teams consisted of a number of generalists rather than specialists. In the vehicle case, this tendency is heightened by the fact that a number of project team members are militaries that are reassigned to a new department every couple of years. If the project team requires expertise on a matter, they seek it outside the project team, but inside the ministry. The type of experts that can be consulted is

diverse and ranges from technicians and engineers to lawyers. In the real estate case, at least 27 other civil servants from the ministry assisted and advised the project team.

In both cases, the project teams received expertise from a sustainable procurement policy advisor, and in both cases the advisor approached the project team rather than the other way around. However, the way the expertise was shared was vastly different between the cases. In the vehicle case, the project team had requested additional expertise on the health and safety aspects of the vehicles and additionally received (unsolicited) advice on sustainable procurement. Although they had not requested the advice, upon receiving it they learned that there were a number of ways in which they could increase the sustainability of the vehicles. Had they not received this advice from the expert, they would not have included it in the procurement, and thus, the project team would not have sufficient expertise on sustainable procurement and the expert could not have pointed out several additional sustainability options. The contact between the expert and the project team was highly formalised. The project team and advisor did not meet, call or e-mail; they only exchanged formal documents. The advisor did not even know whether the project team had taken up his advice.

This was vastly different in the real estate case, where a sustainable procurement expert also contacted the project team. However, unlike the vehicle case, this case was a pilot for a sustainable infrastructure approach and was part of a larger learning process. The sustainable procurement policy advisor organised a meeting, presentations, and workshop to educate the entire department on the possibilities of sustainable infrastructure and real estate. At the beginning of the project, the advisor focused on increasing the expertise of the project leader and project team, for example, by inviting them to workshops. Later in the project, the project team itself gave presentations during a workshop organised by the advisor to share their (newly) acquired knowledge about sustainable procurement to their colleagues. The project team had gone from sustainable procurement apprentices to experts.

The project teams were not experts on sustainable procurement in either case. During the real estate case, however, the project team learned much and became involved in spreading their newly acquired expertise. However, there are no indications that the level of expertise of the project team can explain a difference in the degree of sustainable procurement between the cases. Thus, looking at the three factors in the conceptual model, only (affective) commitment appears to be a determinant of the degree of sustainable procurement. This conclusion, however, seems too simple; something else appears to be at hand here.

#### 4.5.5. The Importance of Actors: The Change Agent

Fernandez and Rainey (2006) found considerable evidence that top management support and commitment play an essential role in the success of change initiatives. These two organisational factors were included in the conceptual model. However, only affective commitment appears to be a determinant of the degree of sustainable procurement in these two cases. Moreover, when we compare the process descriptions of the two cases the importance of individual actors becomes apparent. The actions and attitudes of the two actors were especially prominent in the real estate case. This supports the view of Fernandez and Rainey (2006), that change agents can play an important role in commitment and top management support. The change agent is defined as an individual who influences clients' innovation decisions in a direction deemed desirable by a change agency (Rogers, 1995).

The director and his supervisor can be identified as change agents who were actively trying to implement a sector-wide initiative on sustainable infrastructure within the Defence Real Estate Department. The director was a linking pin between the board of directors of the sector-wide initiative and the Defence Real Estate Department. He tried to implement the ideas and plans from the sector-wide initiative in the Defence Real Estate Department. He also supported the actions of the advisor, for example, by talking to the project leader of the real estate case to convince him to become a pilot project for the sustainable infrastructure approach. The advisor is more focused on implementing the approach within the organisation itself. He is not only approaching project teams to ask them to become pilot projects but is also trying to educate the department about the possibilities of sustainable infrastructure as well as institutionalise it in the organisation by making it part of the new organisation-wide Defence sustainability policy. In the vehicle case, a sustainable procurement advisor was also involved. However, his role was passive and focused on giving advice one project at a time, whereas the advisor in the real estate case is actively trying to change the entire department.

With regard to the degree of sustainable procurement, the change agents were responsible for getting the project team involved in the sector-wide initiative and including a number of tools as award criteria that would greatly increase the sustainability of the project. The three factors (top management support, commitment and expertise) can all be related to the actions of the change agents. With regard to top management support, the director felt that top management support was necessary for them to be able to implement the initiative. In his efforts to convince his superiors of the necessity of the approach, he felt backed by his fellow board of director partners in the sector-wide initiative. Although he also perceived the top as silent on the matter, they were giving him permission to use resources to implement the approach and



take part in the sector-wide initiative. Both change agents stated that they needed enthusiastic people in procurement projects to help them implement the initiative, and their actions were aimed at increasing the commitment. To increase commitment, the advisor, for example, organised workshops, meetings, and presentations and wrote articles for both the intranet and the internal magazine. Sharing expertise and increasing the expertise of the department with regard to sustainable procurement and sustainable infrastructure, was one of his key activities. Thus, by increasing the expertise of people within the department, about the possibilities of the sustainable infrastructure initiative, he also tried to increase their commitment. This could be an indication that expertise is a moderating variable rather than an independent variable.

It can be concluded that in the case with the higher degree of sustainable procurement there were two people acting as change agents. In the other case, such actors could not be identified. The actions of the change agents were oriented at the three organisational factors within the conceptual model, indicating that the existence of these factors is not static but can be influenced by active change agents.

#### 4.6. SUMMARY AND CONCLUSION

In the literature on sustainable procurement, much attention is focused on identifying factors that pose barriers to sustainable procurement. However, little attention is paid to how these factors influence the degree of sustainable procurement. In this chapter, we tried to fill that void by using an organisational perspective to answer the question of how organisational factors influence the degree of sustainable procurement in procurement projects in the Dutch national government. Based on our empirical results, we can draw three conclusions.

*First*, the causal process tracing showed that the degree of sustainable procurement fluctuated during both procurement projects. This shows that the degree of sustainable procurement is not static and, even late in the procurement process, can be increased, or decreased. In organisational change literature, several scholars have noted that paying too much attention to single change events prohibits the identification of clear insights (Kuipers et al., 2014; Pettigrew, 1990). Thus, a process approach is crucial to understanding how the organisational factors and the degree of sustainable procurement are related.

*Second*, our analysis indicates that affective commitment indeed appears to be a determinant of the degree of sustainable procurement. For the other two factors, such a conclusion cannot be drawn. The factor top management support did not vary enough to state that it can influence the degree of sustainable procurement, nor showed the

causal process tracing an increase of the degree of sustainable procurement of the real estate case after the positive remark of the top manager. In both cases, the project team lacked expertise and received advice from a sustainable procurement policy advisor. Although the degree of sustainable procurement increased after the project teams received advice from sustainable procurement policy advisors, this cannot explain the differences in the degrees of sustainable procurement. Simply concluding that only affective commitment is a determinant of the degree of sustainable procurement is too simple and brings us to our next conclusion.

*Third*, although the process tracing approach showed that the organisational factors matter, it also became apparent that individual actors play an important role in determining the degree of sustainable procurement. In the case with the high degree of sustainable procurement, two important actors were identified. These actors were actively trying to increase commitment, expertise, and top management support for a sustainable procurement initiative. The actions of the change agents were aimed at all three organisational factors: increasing individual commitment, expertise, and top management support. This is in line with Fernandez and Rainey's (2006) conclusion that change agents can play an important role in commitment and top management support in change initiatives. By increasing expertise, they wanted to increase the commitment of individuals, which could be an indication that expertise is a moderating variable rather than an independent variable. In the case with the lower degree of sustainable procurement, such actors could not be identified. In this research, the process approach uncovered the importance of actors in determining the degree of sustainable procurement.





# The role of change agents in sustainable public procurement projects



## 5.1. INTRODUCTION

Governments are trying to reduce the negative environmental impact of production and consumption by leveraging their influence as major procurers of goods and services (Brammer & Walker, 2011; Ho et al., 2010). Sustainable procurement is a policy tool that helps achieve such desired outcomes in society (Brammer & Walker, 2011; Murray, 2000; Preuss, 2009). It is defined as “the acquisition of goods and services in a way that ensures that there is the least impact on society and the environment throughout the full life cycle of the product” (Meehan & Bryde, 2011).

The procurement process is a special decision-making process where the decisions of project teams determine whether the full potential of sustainable procurement is used (Günther & Scheibe, 2006). Sustainable procurement therefore varies across projects and is not a constant in organisations (Grandia, Groeneveld, Kuipers, & Steijn, 2013; Meehan & Bryde, 2011). Although people might verbally endorse a policy such as sustainable procurement, this does not necessarily lead to behaviour change (Meehan & Bryde, 2011). To optimise sustainable procurement, key actors should therefore be encouraged to enact new behaviour (Armenakis & Bedeian, 1999). According to organisational change literature, change agents should play this encouraging role, as they can increase employees’ readiness for change by influencing their beliefs, intentions, and ultimately their behaviour (Armenakis et al., 1993).

Recent sustainability studies highlight the importance of change agents as potential catalysts of sustainability initiatives (Dunphy et al., 2007; Van der Heijden et al., 2012). Moreover, a recent study indicates that actors in sustainable procurement projects might be acting as change agents (Grandia et al., 2013). However, sustainable procurement literature has not studied the role of change agents in depth. This chapter closes this gap in the literature by showing that change agents are present in procurement projects and that their actions influence the degree of sustainable procurement. We do so by examining what role do change agents play in sustainable procurement projects in the Dutch national government? To answer this question, seven cases of sustainable procurement projects in two Dutch national government organisations were compared, for which 35 key actors were interviewed. The Netherlands is a relevant case, as a motion in the Dutch House of Representatives led to the development of a sustainable procurement programme, and the political leaders subsequently agreed to implement this programme in all parts of the national government.

The theoretical framework is discussed in the next section. In section 5.3, research design and methods are discussed. In section 5.4, the results of the case studies are presented; section 5.5 concludes.

## 5.2. CHANGE AGENTS IN SUSTAINABLE PROCUREMENT

A change agent is defined as “an internal or external individual or team responsible for initiating, sponsoring, directing, managing or implementing a specific change initiative, project or complete change programme” (Caldwell, 2003: 139-140). They were originally considered to be top or senior managers, but any actor, at any level of the organisation, can become a change agent (De Caluwe & Vermaak, 2003). Organisational change literature provides many possible actions for change agents. Change agents could for example envision, initiate, sponsor, adapt or carry forward change; build support, direct, manage, listen, reflect, cooperate, refine, lead, train or educate; or provide advice, expertise or process skills (Caldwell, 2003; Kendra & Taplin, 2004).

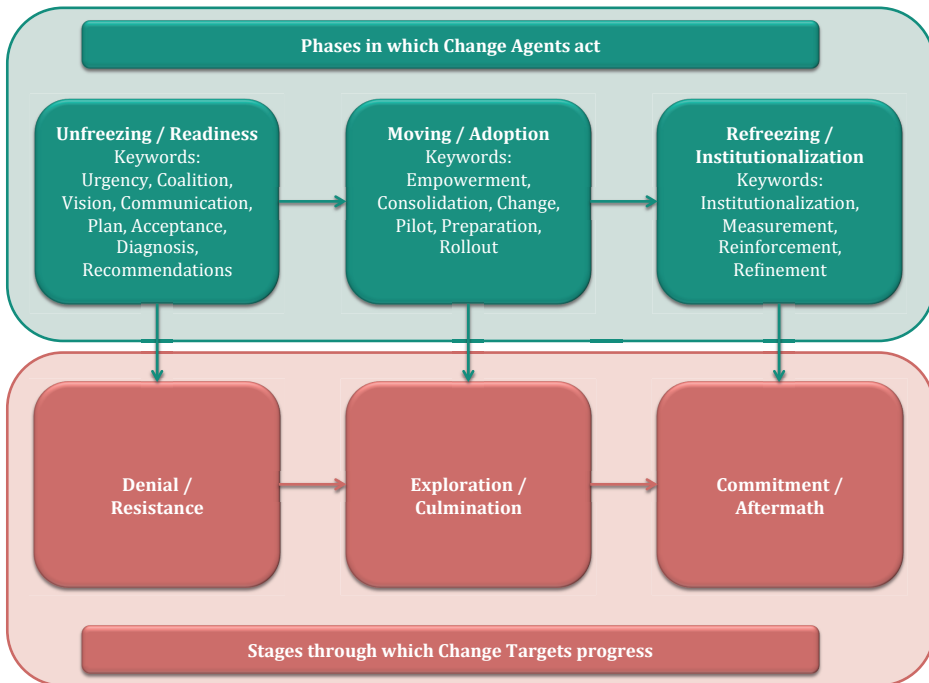
Change agents operate in an organisational change process typically consisting of several phases that take considerable time to unfold (Armenakis & Bedeian, 1999). Kurt Lewin’s three-step model (unfreezing, moving and refreezing) is the base for a planned approach to change. Based on this and other models of change, Armenakis and Bedeian (1999) developed a framework (see figure 5.1) “that matches recommended phases for change agents to follow in implementing change (i.e. phases within which change agents act) with stages in understanding change (i.e. stages through which change targets progress).” Although sustainable procurement is an organisational change, it is at the project level that the decisions of project teams determine whether the full potential of sustainable procurement is attained. In this research we therefore study the role and actions of change agents at the level of the procurement project. We use the model by Armenakis and Bedeian (1999) to frame change at the project level and position the activities of the change agent within the different phases of organisational change, relating them to the stages through which the project team progresses. For example, if a change agent is implementing sustainable procurement and encounters resistance, he could organise a workshop to ‘unfreeze’ the project team and move them to the ‘moving/adoption’ phase.

Based on previous empirical data<sup>1</sup>, two degrees of sustainable procurement have been developed: A) compulsory and B) non-compulsory. Compulsory sustainable procurement can entail A1) no implementation, A2) partial implementation or A3) full implementation of ecological criteria. Non-compulsory sustainable procurement can entail B1) non-compulsory ecological criteria (e.g., ecological award criteria) and/or B2) a design that adds value to its surroundings (e.g., generating electricity). In this research these degrees of sustainable procurement are used to categorise the implementation of sustainable procurement in a specific project.

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1 See chapter 3 and 4 for the conceptualization of the degree of sustainable public procurement.



**Figure 5.1.** Change agent phases and change target stages.

Source: Armenakis & Bedeian (1999).

### 5.3. METHODS AND CASE SELECTION

The roles of change agents in seven sustainable procurement projects in two Dutch national government organisations were examined. Because we wanted to learn whether and how change agents are involved in sustainable procurement projects, a case study was deemed the best design. Via an expert survey the Ministry of Defence and the Department of Waterways and Public Works (RWS) were identified as two organisations where variance in the degree of sustainable procurement within procurement projects could be expected.

Policy advisors in both organisations were contacted and, via a snowball procedure, seven relevant procurement projects were identified. A case is defined as a procurement project procured in 2012-2013 and carried out by a dedicated project team consisting of procurement professionals working in a procurement department of a ministry or agency. A case was considered relevant if it fell under one (or more) of the 52 product categories of the Dutch sustainable public procurement policy, and if the degree of sustainable procurement could be determined. At the start of the project, cases with variation in the degree of sustainable procurement were selected. However,

during interviews, it often became apparent that a project had a higher degree of sustainable procurement than initially thought. Organisational and project characteristics, such as the type and size of the organisation and procurement department as well as the size (> 1 million Euros) and duration (> one year) of the project, were kept similar<sup>2</sup>.

Interviews were the main source of data. However, internal documents and publicly accessible information about the procurement projects were also studied. Interviews were held with key actors. An actor was defined as a key actor if he or she had a leading role in a project (e.g., project leader or procurer), was able to influence the degree of sustainable procurement, or was identified by other key actors as a key actor. A snowball procedure was used, and interviews were carried out until no additional key actors were suggested. In all cases the project leader, procurer, and sustainable procurement policy advisors were considered key actors and were subsequently interviewed (with the exception of one procurer who refused to cooperate). In total, 35 interviews were held (on average five per case). The interviews lasted, on average, between 1 and 1.5 hours and were recorded and transcribed verbatim. To facilitate the analysis and allow for a systematic comparison of variables in and across the cases, all the transcripts were systematically and manually analysed on a case-by-case basis. A log containing the origins of all the quotations was kept.

To identify change agents in the procurement projects, the definition of Armenakis and Bedeian (1999) was operationalized. In this research an actor is considered to be a change agent if he or she performed observable actions to initiate, sponsor, direct, manage or implement sustainable procurement during a procurement project and if these actions were recognised by key actors within the project.

## 5.4. FINDINGS

In the following, we first provide a short description of what is procured in each case and then an in-depth case comparison of the role of the change agents in the cases.

### 5.4.1 Cases of Sustainable Procurement

The *first* case involves the procurement of a quay for a marine harbour in the Netherlands by the Defence Real Estate Department. The *second* case involves the procurement of vehicles plus ten years maintenance by the Defence Materiel Organisation.

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2 At the time of writing, not all projects are finished, and therefore not all details (e.g. exact amounts, names or details of the procurement criteria) can be published, as publication of these details could hinder the procurement process.

The vehicles will be used in heavy terrain but not in dangerous situations, and are bought 'off the shelf'. The *third* case is a combined procurement by the Ministry of Defence and FMH<sup>3</sup> for more than 2,000 warm beverage machines (WBM). WBM fall under category management and are therefore procured by the Ministry of Economic Affairs<sup>4</sup>. The *fourth* case involves the reconstruction of 23 kilometres of highway. Replacing intersections with roundabouts and constructing central reservations, bike paths, flyovers and a bike tunnel should improve the safety of this dangerous road. The *fifth* case involves replacing a sluice in a canal. It is a special project because it is the first design, build, finance, and maintain<sup>5</sup> contract for a wet works project. The *sixth* case also involves the renovation of a sluice but also includes the construction of a second lock chamber and widening of the canals to increase its capacity and diminish waiting time. The *seventh* case involves the combined procurement of cleaning, catering, and security services for all RWS locations. Integrating these three services into one contract allows RWS to outsource the management of these services.

#### 5.4.2 Case Comparison

To facilitate the case comparison, more comprehensive information about the presence, position, and activities of the change agent, the different phases within which change agents act, the stages through which change targets progress and the degrees of sustainable procurement are presented in table 5.1. Interesting patterns become visible when we compare the seven cases. These will be discussed in the next paragraphs. However, first we will clarify the content of the table via a short description of the first case.

According to row 1 in table 5.1 in the Defence real estate case (column 1) a change agent can be identified (column 2). This change agent is a sustainability advisor (column 3) employed by the Ministry of Defence. As a change agent he carried out several activities (column 4) including advising, organising and presenting. He for example wrote articles for the corporate magazine and brought in external experts to inform people about the possibilities of sustainable procurement.

He carried out these activities in all three phases of the change process (column 5) to help the project team progress from possible resistance through exploration to the

3 FMH is part of the Ministry of the Interior and Kingdom Relations and provides facility services (including procurement) for multiple ministries.

4 Facility goods procured by the government are categorised (e.g. office supplies, energy, catering) and subsequently appointed to a specific ministry responsible for developing a government-wide procurement strategy and often procurement. Warm beverage machines are part of the catering category, which is assigned to the Ministry of Economic Affairs.

5 In a DBFM-contract the entire construction process (design, build, finance and maintenance) is integrated in one contract for which the supplier is responsible.

Table 5.1. Case comparison

1) Case	2) Change Agent?	3) Who	4) Activities	5) Phase	6) Stage	7) Degree of SPP
Defence <i>Real estate</i>	Yes	Sustainability Advisor	Advising; Being Assertive Facilitating; Initiating Organising Providing Expertise Speaking Presenting Writing	1: Unfreezing 2: Moving 3: Freezing	2: Exploration 3: Commitment	A3: Full Application B1: Sustainable Award Criteria B2: Adding Value
Defence <i>Vehicles</i>	Yes	Sustainability advisor	Advising Writing	3: Freezing	3: Commitment	A2: Partial Application B1: Sustainable Award Criteria
Defence <i>Warm Beverage Machines</i>	No	N/A	N/A	3: Freezing	3: Commitment	A3: Full Application B1: Additional Ecological Criteria
RWS <i>Highway</i>	Yes	Sustainability Advisor	Advising Educating Problem solving & Adapting Providing Expertise	2: Moving 3: Freezing	2: Exploration 3: Commitment	A3: Full Application B1: Sustainable Award Criteria
RWS <i>Sluice 1</i>	Yes	Sustainability Advisor (2x)	Advising Coordinating Problem solving Providing Expertise	2: Moving 3: Freezing	2: Exploration 1: Resistance 3: Commitment	A3: Full Application B1: Sustainable Award Criteria
RWS <i>Sluice 2</i>	Yes	Technical Manager	Being assertive Building support Carrying forward Change Envisioning Initiating Problem solving & Adapting	1: Unfreezing 2: Moving	1: Resistance 2: Exploration	A3: Full Application <sup>1</sup> B1: Sustainable Award Criteria B2: Adding Value
RWS <i>Cleaning, Catering &amp; Security</i>	Yes	Sustainability Advisor	Advising Being assertive Monitoring Providing Expertise	1: Unfreezing 2: Moving	1: Resistance 2: Exploration	A3: Full Application B1: Additional Ecological Criteria

1 This project is in the planning phase; therefore, the contract has not been drawn up. The reported degree of sustainable procurement reflects what the project team has prepared and researched and plans to include in the contract.

commitment stage (column 6). He for example invited the project leader to a 'sustainable infrastructure day' he organised. By inviting the project leader, he hoped to spark his interest in sustainable procurement and motivate him to explore the possibilities of sustainable procurement. Ergo, via his actions he was trying to bring the project leader from the first to the second stage. It soon became apparent that (even prior to his action) the project team was very willing to explore the possibilities of sustainable procurement and be a pilot case. He subsequently assisted them in this exploration process towards commitment. For example, he acquired software for the project team to calculate the environmental effects of the design of the quay.

With his actions in the three different phases of the change process, he assisted the project team in progressing towards the commitment stage. This commitment resulted in a project with full implementation of the ecological procurement criteria, sustainable award criteria that also add value to their surroundings by reusing excess energy (column 7).

#### *Are there change agents and what are they doing?*

According to table 5.1 in six of the seven cases a change agent could be identified (column 2). All change agents are male civil servants employed by the Ministry of Defence or RWS. In all but one case (Sluice 2), the change agent was a sustainability advisor and thus not formally part of the project team. In the Sluice 2 case, he was the technical manager and thus a formal member of the project team.

The activities (column 4) that the change agents carried out varied across the cases. For example, the change agent in the real estate case regularly organised workshops about sustainable procurement, while the change agent in the Sluice 1 case posted information on the intranet. However, all change agents were advising the project teams to help remove knowledge barriers. Example activities included answering specific questions, providing up-to-date information about developments in the market or assisting in calculating the environmental effects of their projects. A key actor in the Sluice 1 project explained, *"Whenever I run into something and wonder how I am going to deal with it, I plan a meeting with [the change agent], and he explains it to me"*. The change agents do not implement sustainable procurement themselves but help the project teams implement sustainable procurement by providing them with advice, knowledge, tools or a helping hand – or, as one of the respondents stated: *"They say, 'I'll help you get on your way and show you how you could handle it, but you'll have to do it yourself'"*

In addition to their activities at the project level, the change agents also carried out activities at the departmental and sometimes organisational and inter-organisational

levels to further the change process. They for example had meetings with change agents from other organisations, gave presentations about their work in other departments or tried to motivate other organisations to take part in the change process. One change agent said: *"This afternoon I am going to another location, where I rarely go. I am going in a different role, but I am still casually going to ask 'what are you doing with sustainability'?"* However, their activities at the different levels are often intertwined, as the projects often serve as pilots. One change agent explains: *"At the moment we have 5 or 6 forerunner projects and we are already seeing that it can make a difference. That's why we are going to expedite the roll out. Because we could prove it."*

### Comparing the phases and stages

When we take a further look at the phases (column 5) and stages (column 6) of the change process, we see that in three cases, the change agents needed to "unfreeze" the situation and create willingness to change. In the Sluice 2 case, one of the team members said: *"I did notice that it is very difficult, even within such a team. He might also say that. He often felt like he was the only one who wanted it. [...] There certainly was a lack of enthusiasm. Opposition, he might have seen it that way. It was more that people reasoned, 'we are busy enough; let us focus on what we really have to do. And then if we have time and money left for sustainability, we can do that too.'"* The change agent however refused to let it go and put all of his time and energy into removing resistance and encouraging the project team and other key actors to be willing to explore the possibilities for developing the most sustainable sluice in the world. He, for example, regularly sent them examples of comparable projects in which non-compulsory sustainable procurement practices were successfully implemented; for example: *"In Zealand, they created an entire sluice with dimmable LED lights, making it dark at night rather than completely lit. I send that into the organisation to show them good examples of what can be achieved. [...] I just try it again every time. Once a month, I send something and say: 'This has been achieved; we could use that in our sluice.' I try to keep the idea warm, to keep it in their minds. We do have to build that second lock chamber! I hope that they will eventually pick it up."*

In the real estate project, the project team was already convinced of the need for more sustainable procurement and had reached the second phase. Although the project team was willing to explore the possibilities of sustainable procurement, the change agent needed to unfreeze the situation to remove resistance at the departmental and organisational levels. One of the key actors explained, *"I get the idea that it is not hugely expressed as a priority. My colleague [the change agent] is more or less the only advisor dealing with it. It really is his, how do you call it, mission. And it apparently is really difficult to get the rest of the organisation engaged. You are truly relying on project lead-*

*ers and project teams that are willing to apply it.” The change agent therefore sought good projects with project teams that were willing to explore and help him move the change process further. One of the team members explained: “We were merely toying. He wants to launch it on a larger scale. For now, it is a project in which we applied several facets, or will apply I should say, because we have not put out the tender yet. But, he of course wants to get much more support for it.”*

In the cleaning, catering, and security case, the change agent felt that there was too much resistance (including at the management level) and that there was little to gain. He thus chose just to advise the actors in the project, appreciate the sustainable procurement practices that were implemented in the project, and spend his time and energy on other projects in which he could have a greater impact. One of the project members stated: *“We sat with him and said, ‘Gee, I’m afraid we will have to stay at the lowest threshold, difficult as it might be. But we will make sure we grow each year’. And that was a positive point for him. Well, ok, then we are at least doing that.”* This shows that change agents make conscious choices regarding the specific projects in which to invest their time and energy in order to optimise the implementation of sustainable procurement at a higher (e.g., organisational) level. In all the other cases, project teams were already aware of the need to implement sustainable procurement and were willing to explore sustainable procurement practices in their project.

In the other cases the second phase of moving and the second stage of exploration had already been reached. If we compare these cases, we see that the change agents in these cases mostly focused on assisting the project teams in exploring sustainable procurement practices and on removing barriers to sustainable procurement implementation such as a lack of knowledge or tools. For example in the highway case, a team member explained: *“I said, ‘I need a good advisor, somebody who really has a lot of knowledge about it, because I am not going to experiment. It is too important for that.’”* Consequently, his director arranged some time for the change agent to assist them. In these projects the change agents no longer had to focus on motivating or initiating, but were able to focus on ensuring that exploration would lead to commitment by advising, problem solving or coordinating.

#### Comparing the degrees of sustainable procurement

When we look at the degrees of sustainable procurement (column 7), we notice that in the vehicle case not all compulsory ecological criteria are applied. However, given the unique circumstances under which the Ministry of Defence is operating, they are formally allowed to forego the compulsory requirements if they conflict with operational requirements. All projects however do have non-compulsory sustainable procurement. In five cases non-compulsory criteria are included, and in two cases

(one in each organisation), value is added to the surroundings. The fact that all cases include more sustainability than required is an indication that sustainable procurement is becoming institutionalised and emergent sustainable procurement initiatives are relatively common in both organisations. One of the respondents explained: *"It actually became something we find normal, that you have to include. It might seem like the attention is gone, but it's actually just embedded in the organisation. It's standard; you automatically include it."*

The respondents indicated that the change agents played an important role with regard to sustainable procurement. However, it is difficult to determine the extent to which their activities directly influenced the degree of sustainable procurement. In most cases the change agent was so embedded in the project that it is difficult to unravel what activity led to what. Nonetheless, in all cases activities were identified that the change agent carried out to help further the change process and progress the project team towards commitment.

If we relate the degrees of sustainable procurement (the outcome of the project) to the activities of the change agents, we note that in the cases with the highest degree of sustainable procurement, the change agent was the most embedded and pro-active (Real Estate and Sluice 2). In the case with the lowest degree of sustainable procurement, the change agent was the least embedded and least pro-active. The change agent in the latter case explained that he generally only became involved in a project when asked to do so: *"It is the intention that we do all projects. But it depends a little bit on whether a project leader asks for advice and guidance."* This is a vastly different approach from that of the change agent in the real estate case, who contacts people himself: *"We just want to do it! I could write it all down, but you also need projects. So we looked for projects. I also asked around in our regional offices: 'what do you think are good projects?'"* This suggests that a change agent can achieve better results and increase the degree of sustainable procurement in procurement projects when they are embedded in the projects and more pro-active.

Finally, comparing the cases, we can also see that sustainable procurement is not an end state but part of a process. Although most project teams considered applying the compulsory ecological criteria to be business as usual, this did not mean that project teams were equally committed to including additional or non-compulsory sustainable procurement. Thus, if one wants project teams to implement more sustainable procurement practices, one needs change agents that are continuously able to initiate, sponsor, direct, manage, or implement sustainable procurement initiatives.



## 5.5. CONCLUSION AND DISCUSSION

To optimise sustainable procurement, key actors should be encouraged to enact new behaviour (Armenakis & Bedeian, 1999). If they do not match their behaviour to the desired new situation, the full potential of sustainable procurement will not be achieved. According to organisational change literature, change agents can play an important role in achieving such behavioural change. Based on our empirical findings, we draw the following five conclusions.

*First*, our study shows that, although change agents are only one part of the process towards sustainable procurement, they are an important piece of the puzzle and play an important role. In seven cases of sustainable procurement, a change agent was present and able to help key actors enact this desired behaviour by carrying out activities.

*Second*, change agents carry out specific activities such as advising, facilitating, problem solving or organising workshops, to remove resistance and assist project teams in progressing towards commitment to implement sustainable procurement in their projects. This commitment resulted in seven procurement projects with more sustainable procurement than required.

*Third*, the activities the change agents carry out appear to vary by change process phase. Consequently, their role within the organisation and procurement projects also varies throughout the change process. It seems change agents are champions of change in the first phase of organisational change, whereas in the exploration and institutionalisation phase they are more advisors. The role and activities of change agents should therefore not be considered as fixed, but as evolving throughout the change process. This allows change agents to match their activities to the needs of key actors and thereby increase the successfulness of their activities. This finding also proves the usefulness of the model of Armenakis and Bedeian (1999) for our study, as it allowed us to connect the identified activities of the change agents to the three phases of organisational change and the three stages through which the project teams progressed.

*Fourth*, the activities of change agents not only vary throughout the change process but also vary across projects and the organisation. Change agents appear to make conscious decisions regarding which projects to participate in and how much time and energy they will invest in projects in light of their goal of increasing sustainable procurement at the organisational level. To fully understand the importance and role of the change agent, his or her activities should therefore be studied at both project- and organisational levels.

*Fifth*, regarding the role of change agents and the degree of sustainable procurement at the project level, we found an interesting pattern. In the cases with the most proactive and embedded change agents, we find the highest degree of sustainable procurement, whereas in the case with the least proactive and embedded change agent, we find the lowest degree of sustainable procurement. This finding is important because it suggests that, to optimise sustainable procurement, public organisations should stimulate change agents to become more pro-active and embedded within projects as this allows change agents to directly influence the decision-making process.

Our study has limitations. The first has to do with causality. Although we find the highest degree of sustainable procurement in the cases with the most proactive and embedded change agents, we cannot solely attribute this to the actions and role of the change agents. Other factors and actors were also responsible for the outcome; future research should study further the relationship between actions and outcome. Second, the actions and role of the change agents were only studied at the project level and not the other levels on which they operated. Future research should therefore study change agents at multiple levels, thereby showing the full picture of their actions, role, and results.

Overall, we can conclude that change agents matter in the implementation of sustainable procurement. In practice, organisations should therefore encourage employees to take on the role of change agents, become embedded in procurement projects and be pro-active in carrying out activities to help project team's progress towards commitment to sustainable procurement and thereby achieve the full potential of sustainable procurement.





## Examining the role of behaviour, commitment to change, and knowledge



## 6.1. INTRODUCTION

The public procurement market is considered to be the largest business sector in the world and represents 16% of the gross domestic product of the EU (Hawkins et al., 2011; Rolfstam, 2009). At this scale of buying, governments are large authorities in the market. Governments frequently use this authority to compel private organisations to contribute to the achievement of their public objectives (Moore, 1995; Rolfstam, 2009). Governments try to reach their public objectives in a more efficient manner via externalization. The negative impacts of production and consumption are issues that governments worldwide have been trying to reduce via externalization for many years (Ho et al., 2010). The Dutch national government efforts date back to 2005 when they started to develop and implement a policy programme on sustainable procurement<sup>1</sup>.

The procurement process is a special type of decision-making. The decisions of procurers working in dedicated project teams determine whether or not the full potential of sustainable procurement is applied in the procurement projects (Günther & Scheibe, 2006). Although corporate leaders and employees increasingly have recognised their role in contributing to sustainability (Lozano, 2012), previous procurement policies have made public procurers develop risk-averse behaviour and less prone to engage in such risky innovative projects (Rolfstam, 2012), such as sustainable procurement. Thus, public procurers are required to change their existing procurement behaviour to fulfil the potential and reach a higher degree of sustainable procurement in their project. Therefore, it is relevant to investigate to what extent individual sustainable procurement behaviour influences the implementation of SPP in procurement projects and why certain procurers are showing more sustainable procurement behaviour than others.

Most studies still focus on describing the content regardless of a steep increase in the number of articles and books about sustainable procurement, (Bratt, Hallstedt, Robèrt, Broman, & Oldmark, 2013; Melissen & Reinders, 2012), or barriers to sustainable procurement (Brammer & Walker, 2011; Giunipero et al., 2012; Günther & Scheibe, 2006), rather than testing whether or not the suggested factors actually influence the implementation of sustainable procurement. Recently, a number of studies have tested such relationships (Testa et al., 2012; Zhu et al., 2013). However, they focused

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1 Green public procurement, environmentally responsible public procurement, green purchasing, and eco-procurement are other terms that are used to describe the same phenomenon or policy. In this research, the more general term 'sustainable procurement' is used because it is the closest match to the Dutch name of the policy, '*Duurzaam Inkopen*'. However, the Dutch policy on sustainable procurement studied only involves environmental or green procurement criteria. Social criteria are part of another policy with a different design and implementation scheme and are therefore incomparable and thus not part of this study.

either on the organisational or national level and they do not look at the outcome of procurement behaviour, i.e. the implementation of sustainable procurement.

This chapter tries to fill this gap and test the effect of individual procurement behaviour of procurers working in the Dutch national government on the implementation of sustainable procurement of their procurement projects. To do this the following research question was formulated: *Does the individual sustainable procurement behaviour of public procurers influence the implementation of sustainable public procurement in public procurement projects and what influences their behaviour?* To answer this question a survey was sent to all public procurers working in the Dutch national government.

The theoretical framework regarding behaviour and the implementation of sustainable procurement is discussed in the next section. In section 6.3 we discuss what could possibly influence behaviour. Section 6.4 discusses the research design and methods. Section 6.5 presents the results of the survey. These results are discussed in section 6.6, and our conclusions are outlined in section 6.7.

## 6.2. THE IMPLEMENTATION OF SUSTAINABLE PROCUREMENT & BEHAVIOUR

In the Dutch national government goods and services are procured in projects carried out by dedicated procurement teams consisting of several procurement professionals. The Dutch sustainable procurement programme consists of environmental criteria that have been drawn up for goods and services for more than 70 product groups (PIANOo, 2014). Procurers and project teams are required to apply these criteria when procuring goods and services from these product groups. They were asked also to aim for more sustainability than required by these criteria (Grandia, 2015). The Dutch national government started another cycle of updating the criteria in June of 2014 (PIANOo, 2014). Thus, the Dutch SPP policy programme consists of a compulsory and voluntary part. The amount of SPP applied varies across projects, partly due to the voluntary aspect of the programme (Grandia et al., 2013). The procurement process is a special type of decision-making process. The decisions of procurers working in dedicated project teams determine whether or not the full potential of sustainable procurement is applied in the procurement projects (Günther & Scheibe, 2006).

We argue that sustainable procurement behaviour, or 'actions by the procurer to incorporate (environmental) sustainable procurement in the procurement processes' influence the actual implementation of SPP in procurement projects. Thus, does individual level behaviour of procurers influence the project level outcome of a procured



good or service with a certain implementation of compulsory and/or voluntary SPP? The first hypothesis was formulated as follows:

*H1: Sustainable procurement behaviour increases the implementation of sustainable public procurement in public procurement projects.*

### 6.2.1 What influences sustainable procurement behaviour?

If the behaviour of individual public procurers does indeed influence the implementation of SPP in procurement projects, the question remains why certain public procurers show more sustainable procurement behaviour than others.

Behaviour is determined by the intention of people to show that behaviour, as well as their perceived behavioural control, according to the theory of planned behaviour (Ajzen, 1991). People are more likely to show the desired behaviour when they have the intention and perceived behavioural control to do so. Studies show they also perform better when they possess the necessary skills, knowledge, and motivation for it (Vermeeren, 2014). A recent study into the green purchasing behaviour of young consumers also showed a positive relationship between knowledge (ability), an affective personal response to the matter (willingness) and green purchases (Kanchanapibul, Lacka, Wang, & Chan, 2014). Thus, general employee behaviour and consumer purchasing behaviour are influenced by the willingness and ability of people to show the desired behaviour.

We focus in this chapter on two specific types of willingness and ability of procurers to show sustainable procurement behaviour: i.e. affective commitment to change and knowledge. Which will be discussed in the next two sub-paragraphs.

### 6.2.2 Willingness to show sustainable procurement behaviour

Sustainable procurement behaviour is not routinized behaviour. It requires procurers to change their regular procurement behaviour and incorporate sustainable procurement behaviour. Previous policies have made procurers risk averse and less likely to engage in risky innovative projects (Rolfstam, 2012), such as sustainable procurement. Public procurers for example fear legal conflicts and previous and current policies have fed into this fear. To avoid potential legal conflicts, public procurers tend to favour past practices (Palmujoki et al., 2010). For procurers to be willing to show sustainable procurement they have to be willing to change these past practices and thus their behaviour.

The relationship between willingness to change and behaviour is understudied in the field of sustainable procurement, but has been studied frequently in the field of

organisational change. These studies have found affective commitment to change to be one of the most important determinants of employee behaviour and desirable work outcomes (Choi, 2011; Meyer et al., 2002). Affective commitment to change is the desire to show support for the change based on a belief in its inherent benefits. Thus, if procurers believe in the benefits of the change it could make them willing to change their behaviour and show sustainable procurement behaviour. Two recent studies in the field of sustainable procurement (Grandia et al., 2013 & forthcoming) looked into commitment to change and indicated that affective commitment could be positively related to procurer's behaviour and the subsequent implementation of sustainable procurement.

*H2: A high degree of affective commitment to change will increase the degree of sustainable procurement behaviour.*

### 6.2.3 Ability to show sustainable procurement behaviour

With regard to the ability to show sustainable procurement behaviour, one important influencing factor is frequently mentioned in the literature on sustainable procurement: knowledge. Knowledge is defined as "a fluid mix of framed experience, values, contextual information and expert insight that provides a framework for evaluating and incorporating new experiences and information" (Davenport & Prusak, 1998).

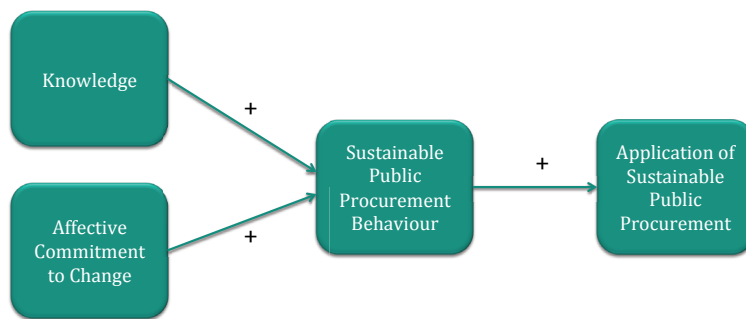
Sustainable procurement is a complex, often-contested concept that requires public procurers to have specific skills and knowledge. However, according to Snell, (2006) more than 80% of the procurers lacked a clear understanding of the term 'sustainable procurement' in 2006. A more recent study by Grandia, Groeneveld, Kuipers, and Steijn (2013) described how procurers indicated that they did not need personal knowledge about sustainability and the environment because they could consult experts within the organisation. However, although such cooperation is important, because it brings together necessary types of knowledge, it is not sufficient for successful sustainable procurement. A certain minimum level of individual knowledge on both procurement and environmental issues is necessary (Michelsen & de Boer, 2009) and without which it is difficult for procurers to see the potential of sustainable procurement (Bowen et al., 2001). It also forces them to use their existing knowledge to interpret the information, which is no longer appropriate to the situation, and causes the procurers to make safe and traditional choices (Meehan & Bryde, 2011), inhibiting the results of sustainable procurement.

No studies have (yet) shown the direct impact of knowledge on the procurement behaviour of public procurers, although both practitioners and scholars frequently mention knowledge as a potential barrier or driver of sustainable procurement (e.g.

Bowen et al., 2001; Meehan & Bryde, 2011; Walker & Brammer, 2009). Studies in the more general field of ecological behaviour have shown that knowledge directly influences behaviour. For example, one study showed that consumers tended to stay away from situations where they have too little knowledge to act as a framework for their behaviour (Kaplan, 1992). Another showed hotel employees were not only more willing to implement green practices in their hotels when they were knowledgeable, but they also showed more ecological behaviour (Chan et al., 2014). Knowledge is therefore expected to positively influence sustainable procurement behaviour:

*H3: Knowledge about sustainability and the environment will increase the degree of sustainable procurement behaviour.*

**Figure 6.1.** Conceptual model



The conceptual model that follows conceptualises the relation between affective commitment to change, knowledge, sustainable procurement behaviour, and the degree of sustainable procurement. In the following paragraphs, the antecedents of sustainable procurement behaviour are discussed more in-depth.

This conceptual model results in the following hypotheses:

*H4: Sustainable procurement behaviour mediates the relationship between knowledge and the implementation of sustainable public procurement in procurement projects.*

*H5: Sustainable public procurement behaviour mediates the relationship between affective commitment to change and the implementation of sustainable public procurement in procurement projects.*

### 6.3. METHODOLOGY

An electronic survey was sent to all public procurers working in the Dutch national government in May of 2014 to test the hypothesised relationships.

#### 6.3.1 Selection and response rate

Over the last years, the Dutch national government made the procurement function more professional by centralizing procurement to 20 generalised or specialised procurement centres where some 950 civil servants procure goods and services. Eleven procurement centres provided the names and contact information of their procurers<sup>2</sup>. One procurement centre only provided names. The missing contact information was retrieved from the Intranet of the Dutch national government. The procurement centres from the Ministry of Defence and the Department of Waterways and Public Works were unable to provide any information about their procurers due to reorganisation of their departments. The names and contact information of the procurers working in these procurement centres were manually retrieved from the Intranet.

All 949 identified public procurers received an invitation to take part in the survey in May of 2014 via e-mail. Two reminders were e-mailed by the chief procurement officer of the national government to all non-respondents. If we received an out-of-office reply a personalised reminder was sent after the respondent returned to work. The survey was mentioned in several newsletters, on professional procurement fora and on Twitter to increase the response rate further.

A total of 368 full or partial surveys were returned. Non-respondents indicated that they were either: not a procurer (20 respondents); they had retired or had changed jobs (6 respondents). Others did not have a functioning e-mail address to be reached and were excluded (9 respondents). These exclusions reduced the sample to 919 persons. In addition, 29 procurers were on holiday, pregnancy leave, and mission abroad or had begun their job so recently they felt unable to answer the questions. 80 of the returned questionnaires were deemed invalid, as too few questions had been answered. The overall response rate was 288 persons; a response rate of 31.3% from the population of 919 persons. Regarding valid responses, 223 responses (77.4%) were from men and 63 (21.9%) from women. This matches the population that consists for

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2 The Tax and Customs Administration, Public & Communication Agency, Forensic Care, Northern Procurement Centre, Ministry of Defence (5 centres), Ministry of Security and Justice, Ministry of Infrastructure and the Environment, The Government Buildings Agency, National Institute for Public Health and the Environment, Netherlands Enterprise Agency, the Directorate of the Immigration Chain, Procurement Cooperation the Hague and the Department of Waterways and Public Works (3 centres). The Department of Waterways and Public Works and the Ministry of Defence have multiple specialised procurement centres within their organisation.

70% of men. On average the respondents were 47 years old, their ages range between 27 and 74. The average age of the population was unknown, but does match the age range of civil servants in the Dutch national government in general, where the majority were between 51 and 60 years old (Ministry of the Interior and Kingdom Relations, 2014). The education level of the respondents was high, 80.5% has at least a Bachelor degree or the equivalent. However, this matches the education level required in job vacancies for procurers (Ministry of Infrastructure and the Environment).

**Table 6.1.** Measurement of the constructs

Construct	Source	Number of items
<i>Sustainable Public Procurement</i>	Grandia (2013)	2
<i>Sustainable Procurement Behaviour</i>	Griffin et al. (2007)	10
<i>Affective Commitment to Change</i>	Herscovitch & Meyer	6
<i>Knowledge</i>	-	1
<i>Control Variables</i>	-	7

### 6.3.2 Measures

Data on the constructs was collected via a web-based survey. For affective commitment to change and SPP behaviour validated scales were used. Experts and public procurers working in the Dutch national government tested the functionality and comprehensibility of the entire survey. A full list of measures is presented in appendix A.

The implementation of compulsory and voluntary SPP (SPP) in public procurement projects was measured by rewording the operationalization of Grandia (2015) of the implementation of sustainable procurement into two questions<sup>3</sup>.

Compulsory SPP is defined as the implementation of relevant environmental criteria as required by the Dutch national government and other national or international rules and regulations in public procurement projects.

Voluntary SPP is defined as the implementation of non-required environmental criteria, such as the inclusion of environmental quality criteria, in procurement projects.

We were unable to objectively measure the implementation of sustainable procurement in the procurement projects of the respondents given the large number of procurement projects within the Dutch national government. Although objective data are preferred to measure outcomes and performance, because they appear less biased, when objective performance data is not available, subjective or perceptual performance measures are considered a reasonable alternative (Kim, 2005; Vermeeren,

<sup>3</sup> The operationalization is found in chapter 4.

2014). The respondents were asked to report on the implementation of compulsory and voluntary SPP in the last procurement project on which they were actively involved and fell under one of the product groups of the SPP programmes in the Dutch national government.

The implementation of compulsory SPP was measured on a 3-point scale (no, partial, yes) by asking: *“In your last procurement project that fell under one of the product groups for sustainable procurement, did you apply all the relevant environmental criteria and other environmental criteria required by national or international rules and regulations?”* The implementation of voluntary SPP was also measured on a 3-point scale (no, partial, yes) and respondents were asked: *“In your last procurement project that fell under one of the product groups for sustainable procurement, did you ask additional environmental criteria (for example environmental quality criteria)?”*

A scale by Griffin et al. (2007) for measuring organisation member proficiency and pro-activity was adapted to measure sustainable procurement behaviour. The initial scale was developed to measure different types of employee behaviour. However, rewording the sentences and adding items allowed us to measure sustainable procurement behaviour. Examples of items are: *“How often have you made suggestions to improve a specific procurement project?”* and *“How often have you defended sustainable procurement when others criticised it?”* The scale contains 10 items, and is measured on a five-point scale ranging from ‘never’ to ‘frequently’ and has a Chronbach Alpha of .932.

Affective commitment to change was measured using the scale developed by Herscovitch and Meyer (2002). This scale is the most frequently used to measure affective commitment to change and has proven robust in numerous studies (Choi, 2011). The scale consists of six items that were measured on a 5-point Likert scale ranging from 1 (totally disagree) to 5 (totally agree) and has a Chronbach Alpha of 0.827.

We developed the following single item scale ourselves as there were no appropriate measures for knowledge on sustainability and the environment in this specific context: *“To professionally procure sustainably, I really should have more knowledge about sustainability and the environment”*. The question was measured on a 5-point Likert scale ranging from 1 (totally disagree) to 5 (totally agree).

In addition to these variables, the following control variables were included in the survey: age, education level, and gender<sup>4</sup>. Age was measured by asking the year of

4 Respondents were also asked to report for which procurement centre they were working. After comparing the number of responses per procurement centre with the information received from the procurement centres about the number of employees we concluded that quite a few respondents must have selected the wrong procurement centre. The fact that some organisations have

birth on a scale ranging from 1940 to 1996. Education level was subdivided into five categories (1 = primary education; 2 = higher general secondary education; 3 = lower vocational education; 4 = higher vocational education / Bachelor of Science; 5 = Master of Science / PhD. Gender (male/female) was coded as a dummy variable.

## 6.4. RESULTS

A quantitative study was carried out to test our hypotheses and answer our research question. A structural equation model (SEM), which posited causal relations among the variables, was tested using AMOS Graphics version 20. The overall fit was assessed using a combination of absolute and relative fit indices (Kline, 2011): relative chi square (CMIN/DF); a goodness of fit index (GFI); a comparative fit index (CFI); a root mean square error of approximation (RMSEA); and, the p of Close Fit (PClose). As our model includes mediation effects, a bootstrapping method was employed also via AMOS (Hayes, 2009) where 5,000 samples (with replacement) were created for the available observed sample. The significance of the indirect relations was calculated via these samples. The descriptive statistics and basic inferential statistics were calculated with IBM SPSS Statistics version 21.

### 6.4.1 Descriptive statistics

All the data was self-reported and collected among a single group of employees and could be subject to common method bias (Meier & O'Toole, 2013). A Harman one-factor test (Podsakoff & Organ, 1986; Podsakoff, MacKenzie, Lee, & Podsakoff, 2003) was carried out on all the items used to measure the variables of our hypotheses to see if the majority of the variance could be explained by a single factor. The components together accounted for 69.6% per cent of the variance, and no single component was accountable for more than 27.2% of the variance. No single factor emerged from the factor analysis and, therefore, common method variance is therefore less likely.

Table 6.2 presents the bivariate correlation, means, and standard deviations of the variables studied. The results show that the implementation of compulsory SPP was the most frequent, with a mean of 2.48 of a 1 – 3 score. However, the implementation of voluntary SPP also scores with 1.85 above the theoretical mean. On average procurers reported a relatively high degree of affective commitment to change (3.79)

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multiple procurement centres (e.g. the Ministry of Defence and the Department of Waterways and Public Works (RWS)), and some procurement centres are part of a Ministry (e.g. RWS and RVO) that also has a procurement centre of its own (e.g. Ministries of Economic Affairs and Infrastructure & The Environment) could have caused confusion amongst the respondents. Unfortunately this does mean that the data on the procurement centre is unreliable and we can therefore not control for the procurement centre, which poses a limitation to the research.

and relatively average degree of knowledge (2.52). Both types of SPP correlate significantly with (at the 0.01 level) sustainable procurement behaviour. As expected, both affective commitment to change (.484\*\*) and knowledge (.308\*\*) correlate positively with sustainable procurement behaviour. Compulsory and voluntary SPP do correlate with each other, but not in such a high degree that multicollinearity should be an issue. In addition, compulsory and voluntary SPP do correlate with SPP behaviour, but the correlation was relatively low and a factor analysis showed that they score on two completely separate factors.

**Table 6.2.** Means, standard deviations, and correlations (N = 288)

	M	SD	1	2	3	4	5	6	7	8
1. Compulsory SPP	2,483	,822	-							
2. Voluntary SPP	1,851	,949	,428**							
3. SPB	2,678	,807	,260**	,350**						
4. ACC	3,788	,603	,213**	,254**	,484**					
5. Knowledge	2,521	,945	,063	,090	,308**	,104				
6. Age	46,94	9,180	-,030	,027	,079	,123*	-,023			
7. Gender	,220	,414	-,099	-,076	,023	-,050	-,068	-,231**		
8. Education level	4,021	,855	,154**	,098	,161**	,115	,174**	-,195**	-,037	-

#### 6.4.2 Structural Equation Modelling

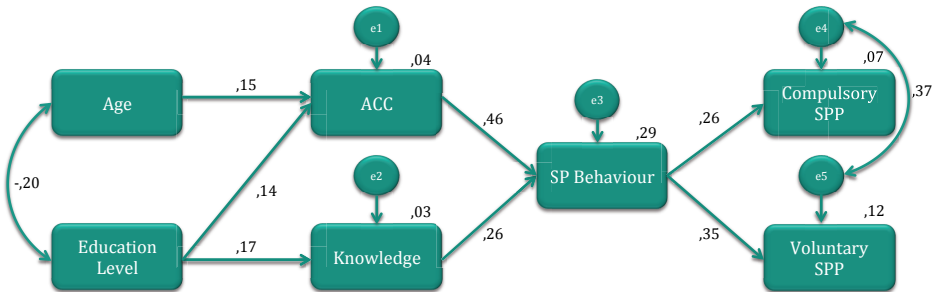
A structural equation-modelling (SEM) approach was adopted to test the hypothesised relationships and hypotheses from the conceptual model. Although our sample of 288 was above the advised threshold of 200 for using SEM (Kline, 2011), our number of variables was too large to use latent variables because there are too many degrees of freedom compared to our sample size. The minimum ratio between the degrees of freedom and the sample size was 5:1 (Bentler & Chou, 1987). Although others claim that if the ratio falls below 10:1, the results and trustworthiness of the research is already questionable (Kline, 2011). A sample size of nearly a 1.000 was necessary to test our theoretical model and adhere to the minimum ratio of 5:1, which was more than the entire population. Therefore, the SEM analysis was carried out in AMOS using the composite scales developed in SPSS. This improved our ratio to 24:1 (in the final model) and this even exceeds the advised 10:1 ratio.

The overall fit of the models was used using a combination of absolute and relative fit indices (Kline, 2011): relative chi square (CMIN/DF); a goodness of fit index (GFI); a comparative fit index (CFI); a root mean square error of approximation (RMSEA); and, the p of Close Fit (PClose). The original model including three control variables (gender, age and education level) did not have acceptable fit indices. Several insignificant



relations from control variables to the other variables were removed to reach a good fitting model and the errors of compulsory and voluntary SPP were correlated. The control variable gender was removed, as it was not significantly related to any of the other variables. The revised and final model is presented in Figure 6.2 where only the significant relations ( $< .05$ ) are shown. The model provided an adequate fit to the data (CMIN/DF = 1.143, GFI = .987, CFI = .992, RMSEA = .022, PClose = .814).

**Figure 6.2.** Result of SEM analysis



The conceptual model suggested, based on theory, that sustainable procurement behaviour would fully mediate affective commitment to change, knowledge and the implementation of compulsory and voluntary SPP. The modification indices did not suggest direct relations between affective commitment to change, knowledge and compulsory or voluntary SPP. However, we also tested a model where sustainable procurement behaviour was only partially mediated between affective commitment to change and SPP based on the correlations between affective commitment to change and both types of SPP. However, all the direct relations between affective commitment to change, and both compulsory and voluntary SPP were found insignificant and, therefore, were not included in the final model.

The validity of the model was checked via cross-model validation according to the three phases of Camilleri (2006). First, the data was divided into two datasets with a random selection of 20% and 80% of the data collected. Second, the structural fit

**Table 6.3.** Results of the cross-model validation showing  $R^2$  values for the 3 samples.

Predicted variable	Model full sample	Model 20%	Model 80%	Difference in $R^2$ 20-80% sample
Compulsory SPP	.066	.043	.085	.042
Voluntary SPP	.120	.059	.119	.060
SPB	.287	.322	.274	.048
ACC	.035	.033	.040	.007
Knowledge	.030	.030	.028	.002

index (R2) was calculated for both datasets. Third, the differences between the calculated structural fit indices for the two datasets were calculated. The less different the structural indices are, the more valid the model is. The cross-validation results are shown in table 6.3 and show that the cross-validation has produced satisfactory results (Camilleri, 2006).

As our model contains both direct and indirect effects (due to the mediation) in addition to the SEM a bootstrapping method was used to test the significance of the indirect effects. In table 6.4 both the direct and indirect effects are presented. The table shows that all the direct and indirect effects are significant.

**Table 6.4.** Direct and indirect effects

Dependent variables	Independent variables				
	SPB	Compulsory SPP	Voluntary SPP	Knowledge	ACC
<i>Direct effects</i>					
Knowledge	.263*** (.048)	–	–	–	–
ACC	.462*** (.046)	–	–	–	–
SPB	–	.257** (.050) (H1)	.347*** (.056) (H1)		
Age	–	–	–	–	.151* (.064)
Education Level	–	–	–	.174** (.057)	.144* (.060)
<i>Indirect effects</i>					
Knowledge via SPB (H2)	–	.068*** (.018)	.091*** (.020)	–	–
ACC via SPB (H3)	–	.119*** (.031)	.160*** (.029)	–	–

\*P < .05 \*\*P < .01 \*\*\*P < .001

First, the hypothesis that sustainable procurement behaviour increases the degree of sustainable procurement behaviour was tested. Our results show a direct and positive effect between sustainable procurement behaviour and the implementation of compulsory and voluntary SPP in public procurement projects. It is interesting to see that sustainable procurement behaviour had a larger influence on the implementation of voluntary SPP in procurement projects ( $\beta$  .347\*\*\*), than on the implementation of compulsory SPP ( $\beta$  .257\*\*) in procurement projects. Thus, we can conclude that individual sustainable procurement behaviour indeed influences the implementation of compulsory and especially voluntary SPP at the project level.

Second, we corroborated the hypotheses that affective commitment to change and knowledge about sustainability and the environment increases sustainable procurement behaviour. Although, affective commitment to change had a stronger influence ( $\beta$  .462\*\*\*) on sustainable procurement behaviour than knowledge ( $\beta$  .263\*\*\*), both

variables significantly increased sustainable procurement behaviour. Thus, the results supported the hypotheses.

Third, we tested the hypothesis that sustainable procurement behaviour mediates the relationship between knowledge and the implementation of SPP in public procurement projects. The results support this hypothesis for both the implementation of compulsory and voluntary SPP. Knowledge indirectly increases the implementation of both compulsory SPP ( $\beta .068^{**}$ ) and voluntary SPP ( $\beta .091^{***}$ ) in procurement projects. A bootstrapping analysis showed these indirect effects to be significant. Interestingly, knowledge produced a larger indirect effect on the implementation of voluntary SPP than on the implementation of compulsory SPP in public procurement projects. Thus, the more the procurers perceived themselves as having enough knowledge about sustainability and the environment, the more they will show sustainable procurement behaviour and the more often they reported applying compulsory and voluntary SPP in their most recent procurement project.

Finally, we tested the hypothesis that sustainable procurement behaviour mediates the relationship between affective commitment to change and the implementation of compulsory of and voluntary SPP in public procurement projects. The bootstrapping analysis showed that sustainable procurement indeed significantly mediates the relationship between affective commitment to change and the implementation of both compulsory SPP ( $\beta .119^{***}$ ) and voluntary SPP ( $\beta .160^{***}$ ) in public procurement projects, thereby proving our third hypothesis valid. Thus, affective commitment to change indirectly increases the implementation of sustainable procurement behaviour and indirectly the implementation of compulsory and voluntary SPP in public procurement projects. Similar to knowledge, affective commitment to change also was found to have a larger impact on the implementation of voluntary SPP than on compulsory SPP. Thus, all three hypotheses were supported by the data.

**Table 6.5.** Results of hypotheses testing

H1: Sustainable procurement behaviour increases the implementation of SPP in public procurement projects	Supported
H2: A high degree of affective commitment to change will increase the degree of sustainable procurement behaviour.	Supported
H3: Knowledge about sustainability and the environment will increase the degree of sustainable procurement behaviour.	Supported
H4: Sustainable public procurement behaviour mediates the relationship between knowledge and the implementation of SPP in public procurement projects.	Supported
H5: Sustainable public procurement behaviour mediates the relationship between affective commitment to change and the implementation of SPP in public procurement projects.	Supported

## 6.5. CONCLUSION

The relationship between the implementation of SPP, sustainable procurement behaviour, affective commitment to change, and knowledge in public procurement projects was examined in this study. We can draw four conclusions based on our results:

*First*, the sustainable procurement process was considered theoretically to be a special decision-making process where the decisions of the procurers largely determine whether or not the full potential of sustainable procurement is used (Günther & Scheibe, 2006). Our results show that the implementation of sustainable procurement indeed is influenced directly by the behaviour (and thus decisions) of the procurers. Their behaviour matters for the successfulness of sustainable procurement. There will be less sustainable procurement without procurers that show sustainable procurement behaviour. Thus, we conclude that individual sustainable procurement behaviour influences the implementation of compulsory and especially voluntary SPP at the project level.

*Second*, the sustainable procurement behaviour of procurers is influenced by two other individual characteristics of the procurers: i.e. their willingness (affective commitment to change); and, their ability (knowledge) to show sustainable procurement behaviour. If the procurers believed personally in the benefit of implementing sustainable procurement, and thus had affective commitment to change, their sustainable procurement behaviour increased. In addition, if procurers feel they are knowledgeable enough to procure goods and service professionally and sustainably, they show more sustainable procurement behaviour. Thus, if procurers feel they have the knowledge and affective commitment to procure in a sustainable manner, they are more likely to do so.

*Third*, our results show that knowledge, or a high degree of affective commitment to change, not only directly influences sustainable procurement behaviour, but also indirectly significantly influences the degree of sustainable procurement behaviour. Therefore, organisations should focus on increasing the affective commitment to change and knowledge of their procurers to increase the implementation of sustainable procurement.

*Fourth*, the influence of sustainable procurement behaviour, affective commitment to change, and knowledge varied according to the type of sustainable procurement. Interestingly, both their direct and indirect influences were stronger on voluntary sustainable procurement. In particular, the direct relationship between sustainable procurement behaviour and the indirect relationship between affective commitment and knowledge and the implementation of voluntary environmental criteria was very strong. As the Dutch national government is shifting its focus more towards voluntary

sustainable procurement and away from the standard implementation of environmental criteria, these relationships become even more important.

Overall, we conclude that the individual procurer is very important for the implementation of sustainable procurement in procurement projects. Although sustainable procurement behaviour and indirectly affective commitment to change and knowledge are not the sole determinants of the implementation of sustainable procurement, they do explain 26% of the variance in the implementation of compulsory SPP and 35% in the implementation of voluntary SPP in procurement in projects. Underestimating the influence of individual behaviour of public procurers on the implementation of SPP in procurement projects could result in less sustainable procurement. Our study shows that their sustainable procurement behaviour is directly influenced by the ability and willingness of public procurers to show this kind of behaviour. Therefore, public organisations wanting to increase the implementation of compulsory and/or voluntary SPP in procurement projects should focus on increasing the affective commitment to change and access to knowledge about the sustainability and the environment of their procurers.

## 6.6. LIMITATIONS AND SUGGESTIONS FOR FURTHER RESEARCH

Our study has its limitations as with any study. *First*, only public procurers working in the Dutch national government were sampled whilst public procurers working in other public organisations in municipalities or other countries were left out of the scope of the study. Therefore, one should be careful in generalizing the results of this study to other organisations and situations. However, it would be very interesting to replicate this study to generate data to compare the situations of procurers working in other (public or private) organisations and in different countries. We would encourage other researchers to use similar scales to enhance the possibilities for generalization.

*Second*, we have measured both sustainable procurement behaviour and the implementation of SPP in procurement projects. The behaviour of individual public procurers, as well as their commitment to change and knowledge about sustainability and the environment have been found influential in the implementation of sustainable procurement. However, these are of course not the only determinants of how sustainable procurement is implemented. Other studies have identified other potential barriers and drivers of sustainable procurement, such as financial or policy-related barriers. We recommend for future research further study and tests of the relationship between these variables and sustainable procurement.



## Increasing sustainable public procurement behaviour





## 7.1. INTRODUCTION

Public procurement represents 16% of the European Union (EU) gross domestic product and is consequently key part of demand-oriented innovation policy (Brammer & Walker, 2011; Rolfstam, 2009). Governments use procurement to stimulate the development of sustainable technologies (Erdmenger, 2003). An increasing amount of scholars is studying barriers and drivers of sustainable procurement (Brammer & Walker, 2011; Günther, Hueske, Stechemesser, & Buscher, 2013; Meehan & Bryde, 2011; Michelsen & de Boer, 2009). Most studies focus on factors such as lack of funding, expertise, or personnel (Brammer & Walker, 2011), aspects of the policy itself such as no supporting criteria or missing scope (Melissen & Reinders, 2012) or a combination of both (Giunipero et al., 2012; Günther et al., 2013). These studies thus tend to seek explanations on the organisational level and appear to overlook factors that are connected to the individual procurer. Within the procurement process decisions of procurers determine if the full potential of sustainable procurement is used (Günther & Scheibe, 2006). The behaviour of procurers is therefore crucial. However, previous procurement policies have caused public procurers to develop risk-averse behaviour, which have made them less likely to engage in innovative projects (Rolfstam, 2012). Implementing sustainable procurement and especially using the full potential of sustainable procurement, therefore, requires public procurers to change their behaviour.

Organisational change scholars consider commitment to change the most important determinant of employee behaviour and desirable work outcomes (Choi, 2011; Meyer et al., 2002) and found it effective in altering environmental behaviours (Lokhorst, Werner, Staats, Dijk, & Gale, 2013). With the exception of a study by Grandia et al. (2014)<sup>1</sup>, no studies about the commitment to change of public procurers, or the antecedents of their commitment to change in the specific context of sustainable public procurement were found. This study attempts to fill this void by answering the following research question: How does the commitment to change of Dutch public procurers influence their sustainable procurement behaviour and what are the antecedents of their commitment to change? To answer this question, a survey was sent to all public procurers working in the Dutch national government.

The theoretical framework regarding commitment to change and behaviour is discussed in the next section; in Section 7.3, we discuss what could possibly influence commitment to change; in Section 7.4, the methodology is discussed; in Section 7.5, the findings are presented; Section 7.6 concludes, followed by a discussion of the limitations of the study and suggestions for future research in Section 7.7. The chapter ends with a reflection on the findings.

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<sup>1</sup> See chapter 4 for this study.

## 7.2. COMMITMENT TO CHANGE AND BEHAVIOUR

The behaviour of public procurers regarding sustainable procurement<sup>2</sup> or “actions by the procurer to incorporate (ecological) sustainable procurement in the procurement process” has received little attention from scholars. Most studies into sustainable procurement study it at the organisational, national level or even international level (Erridge & Hennigan, 2012; Melissen & Reinders, 2012; Preuss, 2009), rather than at the level of the individual public procurer. Very little is therefore known about what sustainable procurement behaviour is and how it can be influenced.

We do however know something about employee behaviour in general and how this can be influenced. For example, Griffin, Neal, and Parker (2007) developed a model of positive work role behaviours, stating that a proficient and proactive member of the organisation would talk positive about the organisation and make suggestions to improve the overall efficiency of the organisation. These behaviours can also be applied to sustainable procurement; thus, a proficient and proactive procurer will speak positively about sustainable procurement and make suggestions to improve the overall efficiency of sustainable procurement.

Organisation studies frequently researched employee behaviour in relation to desirable work outcomes and found commitment to change one of the most important aspects in explaining employees' behaviour and desirable work outcomes (Choi, 2011; Meyer et al., 2002). Commitment was originally conceptualised in terms of organisational commitment or “the relative strength of an individual's linkage to the organisation” (Choi, 2011). More recently, Herscovitch and Meyer (2002) build on their general theory of workplace commitment (2001) and proposed a model about commitment to change. They (2002) define commitment to change as “a force (mind-set) that binds an individual to a course of action deemed necessary for the successful implementation of a change initiative” and discern three types of commitment that are each fuelled by a different force. First, a desire to provide support for the change based on a belief in its inherent benefits (affective commitment); second, a recognition that there are costs associated with failure to provide and third, a sense of obligation to provide support for the change (normative commitment) (Meyer et al., 2002: 475).

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2 Green public procurement, environmentally responsible public procurement, green purchasing, and eco-procurement are other terms that are used to describe the same phenomenon or policy. In this research, the more general term ‘sustainable procurement’ is used because it is the closest match to the Dutch name of the policy, ‘*Duurzaam Inkopen*’. However, the Dutch policy on sustainable procurement studied only involves environmental or green procurement criteria. Social criteria are part of another policy with a different design and implementation scheme and are therefore incomparable and thus not part of this study.

Since then commitment to change has received a vast amount of attention from scholars and the concept of commitment to change has proven to be distinct from organisational commitment (Choi, 2011; Fedor, Caldwell, & Herold, 2006). A recent study by Grandia et al. (2014)<sup>3</sup> suggested that the type of commitment to change could positively influence the degree of sustainable procurement in procurement projects. This finding is in line with earlier findings that “commitment to change reflects behavioural intentions to support a change initiative and behavioural consequences are associated with different forms of commitment to change” (Choi, 2011; Meyer et al., 2002). Commitment to change is thus expected to positively impact sustainable procurement behaviour.

*H1: A high degree of commitment to implement sustainable procurement will increase the degree of sustainable procurement behaviour.*

### 7.3. INFLUENCING COMMITMENT TO CHANGE

In the management of change literature, five themes or issues are considered common to all change efforts: content issues, context issues, process issues, outcome issues, and leadership issues (Armenakis & Bedeian, 1999; Kuipers et al., 2014). Content issues refer to issues related to the content of the change, such as the change strategy (Kuipers et al., 2014). Process issues refer to how the organisational change has come about (Van der Voet, 2014). The strength of context variables on the successfulness of organisational changes, such as organisational characteristics, is also emphasised (Choi, 2011).

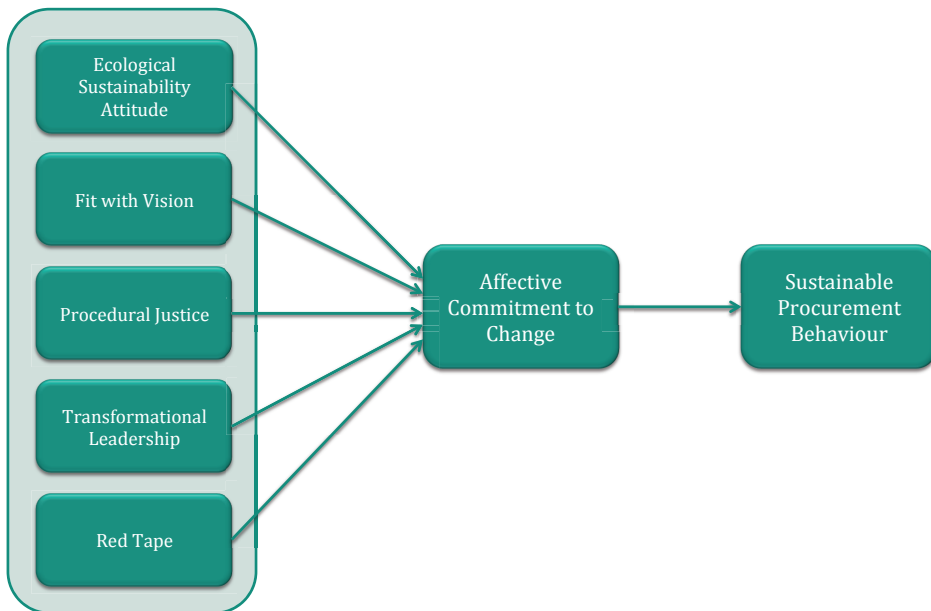
Factors belonging to each of these issues of organisational change have been found to influence commitment to change (Choi, 2011). In this research, we have therefore identified an important factor for each issue that is expected to influence the commitment to change of the public procurers: fit with vision (content), procedural justice (process), red tape (context), and leadership style (leadership). In addition, a complete model of change should not only address macro-level forces, such as content, process and contextual factors, but also micro-level factors, such as individual differences (Walker et al., 2007). We therefore added an individual level factor to the conceptual model (ecological sustainability attitude) that we expect will increase the commitment to change of the public procurers.

The factors were identified based on organisational change and sustainable procurement literature. The conceptual model conceptualises the relation between the five factors and commitment to implement sustainable procurement (commitment to change) and sustainable procurement behaviour. For example, a study by Michaelis,

<sup>3</sup> See chapter 4 for this study.

Stegmaier, and Sonntag (2010) found commitment to change fully mediated the relationship between transformational leadership and followers' innovation implementation behaviour. In our model, commitment to change acts thus as a mechanism that mediates the relationship between the five factors and sustainable procurement behaviour. For example, we do not expect that a lot of red tape will directly cause procurers to show less sustainable procurement behaviour; we expect that a lot of red tape will make them less committed to change, which will subsequently cause them to show less sustainable procurement behaviour.

**Figure 7.1.** Conceptual model



Based on prior research, we do not expect the five factors to directly influence the sustainable procurement behaviour, but that commitment to change is operating as a mechanism between the five factors and sustainable procurement behaviour (Figure 7.1). The following hypothesis describes this mechanism:

*H2: Commitment to change mediates the relationship between fit with vision, procedural justice, red tape, transformational leadership, ecological sustainability attitude and sustainable procurement behaviour.*

In the following paragraphs, the five factors affecting commitment to change are discussed in-depth.

### 7.3.1. Change content: fit with vision

Content issues refer to the change that is being implemented and are specific for each organisation (Walker et al., 2007). They are primarily factors that underlie the organisation's long-term relationship with its environment and define its overall characters, mission, and direction (Armenakis & Bedeian, 1999). With regard to the content of the change, Parish, Cadwallader, and Busch (2008) found that a fit between the organisation's strategic vision and the change itself could increase the commitment of employees to the change. A fit between the strategic vision of the organisation and organisational change refers to the degree to which the change being implemented is congruent with the overall direction of the organisation (Noble & Mokwa, 1999; Parish et al., 2008). Parish, Cadwallader, and Bush (2008) found this fit to be positively related to all three types of commitment to change (affective, continuance and normative). This also matches Rolfstam's (2012) theory that innovation of public procurement emerges as a result of a match between different exogenous and endogenous institutions. Which in this case would suggest that a fit between the organisations strategic vision (an endogenous institution) and the policy on sustainable procurement (an exogenous institution) would increase innovation in public procurement (i.e. sustainable procurement). Also because a previous study on sustainable procurement showed that in certain Dutch public organisations sustainability is key part of the organisation's strategic vision and in others it is not (Grandia, 2015)<sup>4</sup>, we expect that a fit between the organisation's vision and the policy on sustainable procurement could increase the commitment of procurers to change.

*H3: A good fit between the organisations strategic vision and the sustainable procurement policy increases the degree of commitment to implement sustainable procurement.*

### 7.3.2. Change process: procedural justice

Where content issues involve the specifics of the change and the organisation itself, process issues refer to the actions taken during the introduction and implementation of the proposed change (Armenakis & Bedeian, 1999; Walker et al., 2007). For example, actions regarding participation and involvement in the change, communication about the change or perceived fairness of the change process (Choi, 2011). In this study, the focus lies on fairness (procedural justice) because an increasing number of studies have demonstrated that it is strongly related to employees' positive attitudes, values, and supportive behaviour towards the organisation and change (Colquitt, 2001; Foster, 2010). We include procedural justice as a process antecedent of commit-

<sup>4</sup> See chapter 5 for this study.

ment to change because it allows us to measure if the perception of the fairness of the procedures used to implement sustainable procurement (e.g. ecological procurement criteria) influences the commitment to change of procurers. The following hypothesis is therefore formulated:

*H4: A high degree of procedural justice increases the degree of commitment to implement sustainable procurement.*

### 7.3.3. Change context: red tape

The third change factor, contextual issues, refers to pre-existing forces in the organisation's external or internal environment, such as technological advances, levels of professionalism, organisational slack, leadership or history of change (Armenakis & Bedeian, 1999; Walker et al., 2007) that can reduce commitment to change (Armenakis & Bedeian, 1999; Choi, 2011). As organisations can do very little to change the external context (Walker et al., 2007), this study focuses on an important internal contextual factor: red tape. This allows us to take into account possible perverse effects of the high degree of formalization of public procurement.

Public procurement is subject to public review and as result requires complete transparency (Walker & Brammer, 2009). This need for transparency is enforced via national and international rules, regulations, laws, and procedures, such as the EU Public Procurement Law. As a result, public procurement is highly formalised. However, formalization, or the degree to which organisational activities are manifested in written documents regarding procedures, job descriptions, regulations and policy manuals (Hall, 1996; Van der Voet, 2014), can result in negative effects known as red tape (Bozeman & Scott, 1996; Van der Voet, 2014). Red tape is defined as "rules, regulations, and procedures that remain in force and entail a compliance burden but do not serve the legitimate purposes the rules were intended to serve" (Bozeman, 1993). Formalization only results in red tape when the observed rules do not further the objective of the organisation and resources are wasted (Bozeman & Feeney, 2011). Red tape has always been an issue for public procurement. As early as 1919, a scholar wrote about red tape hampering procurers in bidding, delivering goods and paying bills (Thomas, 1919). Since then this issue has not lessened (Thai, 2001).

As there is little empirical evidence relating red tape to commitment to change, our argument is based on broader literature about organisational change, employee motivation, and commitment. Red tape has been found to play a negative role on satisfaction processes in public organisations (Giauque et al., 2012; Pandey & Scott, 2002) and is negatively related to the implementation of IT innovations (Moon & Bretschneider, 2002). High degrees of red tape can delay and interrupt decisions to implement in-

novations and thereby influence the mind-set that binds the procurers to the action deemed necessary for the successful implementation of sustainable procurement. Our hypothesis is therefore as follows:

*H5: A high degree of red tape will diminish the degree of commitment to implement sustainable procurement.*

#### 7.3.4. Leadership: transformational leadership style

Leadership is considered one of the key drivers of organisational change implementation (Herold et al., 2008; Higgs & Rowland, 2005; Van der Voet, 2014), and transformational leadership is the most frequently studied antecedent of employee commitment to change (Herold et al., 2008; Podsakoff et al., 1996). Transformational leaders have been found able to communicate a vision and bring employees together to achieve a change goal. Because they have the trust, admiration, loyalty, and respect of their followers, they become motivated to do more than they are originally asked to do (Podsakoff et al., 1996; Yukl, 1999). As a result, transformational leadership is often found to positively influence commitment to change (Herold et al., 2008; Michaelis et al., 2010). Although the role of top or senior managers is often highlighted for the initiation of a change, direct supervisors have an important role during the implementation of change (Van der Voet, 2014). This study therefore focuses on the leadership style of the direct supervisors, rather than the leadership style of for example the Minister or Director General.

*H6: A transformational leadership style of the direct supervisor increases the commitment to implement sustainable procurement.*

#### 7.3.5. Individual value congruence

Besides more macro-level factors, each organisation includes a range of different individuals. These individuals have dispositional and personality characteristics that could influence organisational attitudes and behaviours (Choi, 2011; Walker et al., 2007). Commitment, and especially affective commitment, means that a respondent is committed to a change because he or she finds the change (in this case sustainable procurement) valuable. Studies show that people actively select and believe information that matches their personal values (value congruence). To find out if personal values and attitude towards sustainability influence the commitment to change of the procurers, we have included ecological sustainability as an antecedent of commitment to change. For example, a public procurer that loves nature and tries to be very environmentally friendly could be more committed to implementing sustainable

procurement than a procurer who hates nature and the environment. The following hypothesis is therefore formulated:

*H7: A positive attitude towards ecological sustainability increases the degree of commitment to implement sustainable procurement.*

## 7.4. METHODOLOGY

To test the hypotheses, a survey was deemed the best research design for the following reasons. First, a survey allows us to measure the sustainable procurement behaviour of the entire population of public procurers working in the Dutch national government. Second, a survey allows us to test whether the hypothesised relationships and mediation exists. All public procurers working in the Dutch national government therefore received an invitation to take part in the survey in May of 2014. Before discussing the selection, response rate, and measures of the survey, we will provide some insight into sustainable public procurement in the Netherlands.

### 7.4.1. Sustainable public procurement in the Netherlands

In 2009, the Dutch national government indicated sustainable public procurement as one of its priorities and has subsequently developed and implemented a Sustainable Procurement Programme (Melissen & Reinders, 2012). The goal was that the national government would procure 100% sustainable by the end of 2010, and according to their sustainable procurement monitor this goal was met. The Sustainable Procurement Programme makes a certain degree of sustainability compulsory, but also asks procurement project teams to aim for more (non-compulsory sustainability). This leaves room for project teams to vary in the degree of sustainability of their procurement projects. Several studies on sustainable procurement have shown that indeed procurement projects show great variation with regard to the degree of sustainable procurement (Brammer & Walker, 2011; Grandia et al., 2014; Meehan & Bryde, 2011).

### 7.4.2. Selection and response rate

The exact number of Dutch civil servants involved in public procurement in the Dutch national government is unknown, but it is approximately around 950 civil servants. They work in 20 centralised or specialised procurement centres<sup>5</sup>. Eleven centres

<sup>5</sup> The Tax and Customs Administration, Public & Communication Agency, Forensic Care, Northern Procurement Centre, Ministry of Defence (five centres), Ministry of Security and Justice, Ministry of Infrastructure and the Environment, The Government Buildings Agency, National Institute for Public Health and the Environment, Netherlands Enterprise Agency, the Directorate of the Immigration Chain, Procurement Cooperation the Hague and the Department of Waterways and



provided names and contact information of their procurers. One procurement centre only submitted the names of their employees; missing contact information was subsequently added from the intranet of the Dutch national government. Due to reorganisations, the procurement centres from the Department of Waterways and Public Works and the Ministry of Defence were unable to provide any information. The names and contact information of the procurers working in these organisations were therefore manually retrieved from the intranet. This procedure explains why we do not know the exact number of public procurers in the Dutch national government.

In May 2014, an invitation to take part in the web-based survey was sent via email to all (949) identified public procurers working in the Dutch national government. To increase the response rate, the survey was mentioned in a newsletter, on professional procurement web fora, twitter, and two reminders were sent by the chief procurement officer of the national government to all non-respondents. If an out-of-office reply was received, a personalised invitation was sent after the respondent returned to work. We received 368 full or partial returns of our questionnaire. Of those who did not complete the survey, several provided reasons to the authors. The majority indicated they were not a procurer (20 respondents), had retired or switched jobs (6 respondents) or had no functioning e-mail address (9 respondents) and could not be reached and were thus excluded from the population. This brings the total population to 914. With regard to the non-response, several respondents (29) were on holiday, pregnancy leave, and mission abroad. In addition, a couple of procurers stated that they started their job as a procurer in the last month or were only responsible for managing the contract and therefore were unable to answer the questions and fill out the survey. Of the returned questionnaires, 80 were deemed invalid, as too few questions had been answered. The valid overall response is 288, which results in a response rate of 31.5% of the entire population of 914. Of the valid responses, 223 (77.4%) were from men and 63 (21.9%) of women. This is in line with the population, which consists of 70% of men. The average age of the respondents is 47. The average age of the population is unknown, but it does match the ages of civil servants in the Dutch national government in general (Ministry of the Interior and Kingdom Relations, 2014). The education level of the respondents is high, 80.5% has at least a Bachelor degree or the equivalent of a Bachelor degree. However, this high percentage matches the job requirements asked in job vacancies for procurers (Ministry of Infrastructure and the Environment).

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Public Works (three centres). The Department of Waterways and Public Works and the Ministry of Defence have multiple specialised procurement centres within their organisation.

### 7.4.3. Measures

For all constructs existing and validated scales were available and used. A full list of measures is presented in appendix B. To measure the reliability of the scales, the Chronbach's alpha was calculated for each scale. Experts and public procurers working in the Dutch national government tested the functionality and comprehensibility of the survey and the used constructs.

Sustainable procurement behaviour was measured via an adapted and extended version of the scales by Griffin, Neal, and Parker (2007) for organisation member proficiency and pro-activity. The scales were originally developed to measure a different kind of employee behaviour, but rewording the sentences and adding items allowed us to measure sustainable procurement behaviour. Examples of items are: *"how often have you talked positively about sustainable procurement"* and *"how often have you searched for additional information about sustainable procurement or sustainability?"* The scale contains 10 items, and is measured on a 5-point scale ranging from "never" to "frequently". The scale has a Chronbach's alpha of .932, which shows the scale to be robust.

To measure the commitment to change of the procurers, the scale by Herscovitch and Meyer (2002) was used. Almost all studies into commitment to change use this scale to measure the three types of commitment to change discerned by them and have proven it to be valid (Choi, 2011). The scale consists of 18 items divided into normative commitment to change, affective commitment to change, and continuance commitment to change. Although we formulated hypotheses regarding commitment to change in general, we will measure and analyse the three types of commitment to change separately which allows us to draw conclusions that are more specific. In accordance with the original scale, a 5-point Likert scale ranging from 1 (totally disagree) to 5 (totally agree) was used. Example items are: *"I feel a sense of duty to work towards this change"* and *"I do not think it would be right of me to oppose this change"*. The full scale has a Chronbach's alpha of .783. Subscales have Chronbach's alpha of .827 (affective commitment), .734 (normative commitment) and .636 (continuance commitment). Dropping items did not improve the scales.

The perceived fit between the change and the organisation's vision was measured using a 3-item scale developed by Noble and Mokwa (1999). An example item is: *"the change is consistent with other things going on in my department"*. The items are measured using a 5-point Likert scale ranging from 1 (strongly agree) to 5 (strongly disagree) and has a Chronbach's alpha of .866.

The perceived level of red tape was measured using a single item by Pandey and Scott (2002): *"If red tape is defined as burdensome administrative rules and procedures that have negative effects on the organisation's effectiveness, how would you assess the level*

*of red tape in your organisation?"* This measure is a good index measure from both an empirical and theoretical perspective and congruent with the theoretical definitions of red tape (Pandey & Scott, 2002). The perceived level of red tape is measured on a scale from 0 to 10, with 10 being the highest level of red tape.

We used the transformational leadership scale developed by De Hoogh, Den Hartog, and Koopman (2004) to measure how transformational procurers find the leadership style of their direct supervisor to be. The scale is part of the larger charismatic leadership in organisations scale. The transformational leadership scale proved very robust with a Chronbach's alpha of .960. All items are measured on a 7-point Likert type scale. Examples of items are: *"my direct supervisor stimulates employees to develop their talents"* and *"my direct supervisor has a vision and picture of the future"*. The degree of perceived procedural justice was measured using a 7-item scale developed by Colquitt (2001). The scale draws on important works in the field and the wording of the items allowed us to adapt the items to our specific situation. The items are measured on a 5-point Likert type scale ranging from 1 (to a very small extent) to 5 (to a very large extent). Examples of the items are: *"have you been able to express your views and feelings during those procedures?"* and *"have those procedures been based on accurate information?"* The resulting scale has a Chronbach's alpha of .854, which is good.

A scale developed by Alcock (2012) was used to measure the ecological sustainability attitudes of the procurers. This scale was selected because it avoids reference to specific behaviours or issues that might not be applicable to all respondents (e.g. car ownership). The six items have a 5-point Likert scale ranging from 1 (disagree strongly) to 5 (agree strongly). Examples of the items are: *"the environment is a low priority for me compared with a lot of other things in my life"* and *"I personally need to change my way of life so that future generations can continue to enjoy a good quality of life and environment"*. The Chronbach's alpha of this scale was the lowest at .609, but we have used the scale nonetheless.

In addition to the variables described above, the following control variables were included: gender, age, education level, and management position<sup>6</sup>. The hypothesised relationships among the variables were analysed using SPSS version 22.

6 Respondents were also asked to report for which procurement centre they were working. After comparing the number of responses per procurement centre with the information received from the procurement centres about the number of employees we concluded that quite a few respondents must have selected the wrong procurement centre. The fact that some organisations have multiple procurement centres (e.g. the Ministry of Defence and the Department of Waterways and Public Works (RWS)), and some procurement centres are part of a Ministry (e.g. RWS and RVO) that also has a procurement centre of its own (e.g. Ministries of Economic Affairs and Infrastructure & The Environment) could have caused confusion amongst the respondents. Unfortunately this does mean that the data on the procurement centre is unreliable and we can therefore not control for the procurement centre, which poses a limitation to the research.

## 7.5. FINDINGS

Our conceptual model hypothesises that commitment to change acts as a mechanism that mediates the relationship between red tape, fit with vision, procedural justice, ecological sustainability attitude, transformational leadership style and sustainable procurement behaviour. To see if commitment to change is indeed a mediating variable we carried out a mediation analysis, based on the method proposed by Baron and Kenny (1986), and a bootstrapping analysis. In the following paragraphs, we will present the outcomes of the analyses. Table 7.1 shows the outcomes of the four steps of the mediation analysis<sup>7</sup>.

**Table 7.1.** Mediation analysis

Predictors	Step 1: β Sustainable Procurement Behaviour	Step 2: β Affective Commitment to Change	Step 3: β Sustainable Procurement Behaviour	Step 4: β Sustainable Procurement Behaviour
Age	-.05	-.06	-.09	-.07
Gender	.08	-.03	.06	.07
Management position	.03	-.01	.01	.01
Education level	.1	.01	.06	.06
Affective Commitment	.42***	-	-	.35***
Normative Commitment	.05	-	-	
Continuance Commitment	-.06	-	-	
Procedural Justice	-	.14*	.27***	.22***
Leadership	-	.08	-.01	-.04
Fit with Vision	-	.33***	.22***	.11
Red Tape	-	-.08	.02	.05
Ecological sustainability attitude	-	.31***	.17**	.06
R <sup>2</sup>	.24	.37	.24	.31

\* =  $\alpha \leq .05$ . \*\* =  $\alpha \leq .01$ . \*\*\* =  $\alpha \leq .001$

As the first step of the Baron and Kenny method, we regressed the control variables plus the hypothesised mediator (three types of commitment to change) onto the dependent variable (sustainable procurement behaviour). Although we hypothesised that all three types of commitment to change would influence sustainable procurement behaviour, the regression analysis (Table 7.1, step 1) found only affective com-

<sup>7</sup> A correlation table was not published in the article, however it can be found in appendix C.

mitment to change to be significantly related to sustainable procurement behaviour ( $\beta = .42^{***}$ ). Thus, only commitment to change based on an inherent belief in the benefits of sustainable procurement causes more sustainable procurement behaviour. Our first hypothesis is therefore only supported for affective commitment to change. In our next steps, we thus only look at affective commitment to change as a possible mediator.

In the second step, the control variables plus the hypothesised independent variables (procedural justice, leadership, fit with vision, red tape and ecological sustainability attitude) are regressed together on affective commitment to change (mediator as dependent variable) to ascertain that there is a relation between the mediator and antecedents. According to the Baron and Kenny method, a significant relationship between the independent variables and the mediation variable is a requirement for mediation. This step showed a significant relationship between procedural justice ( $\beta = .14^*$ ), fit with vision ( $\beta = .33^{***}$ ), ecological sustainability attitude ( $\beta = .31^{***}$ ) and affective commitment to change. Our third, fourth and seventh hypotheses are hereby confirmed. Thus, the more respondents perceive a fit between the strategic vision of their organisation and sustainable procurement policy (fit with vision – hypothesis 2), perceive the procedures used to implement sustainable procurement as just (procedural justice – hypothesis 3) and have a positive attitude towards ecological sustainability (ecological sustainability attitude – hypothesis 7), the more affectively committed to implement sustainable procurement they are. However, not all hypotheses were supported by our analysis in this step. Our fourth and fifth hypotheses suggested that a transformational leadership style of the direct supervisor would increase commitment to change, whereas a high degree of red tape would decrease the commitment to change. However, the regression analysis showed no significant relationship between either transformational leadership and affective commitment to change, or red tape and affective commitment to change. Our fourth and fifth hypotheses are therefore not supported by the results.

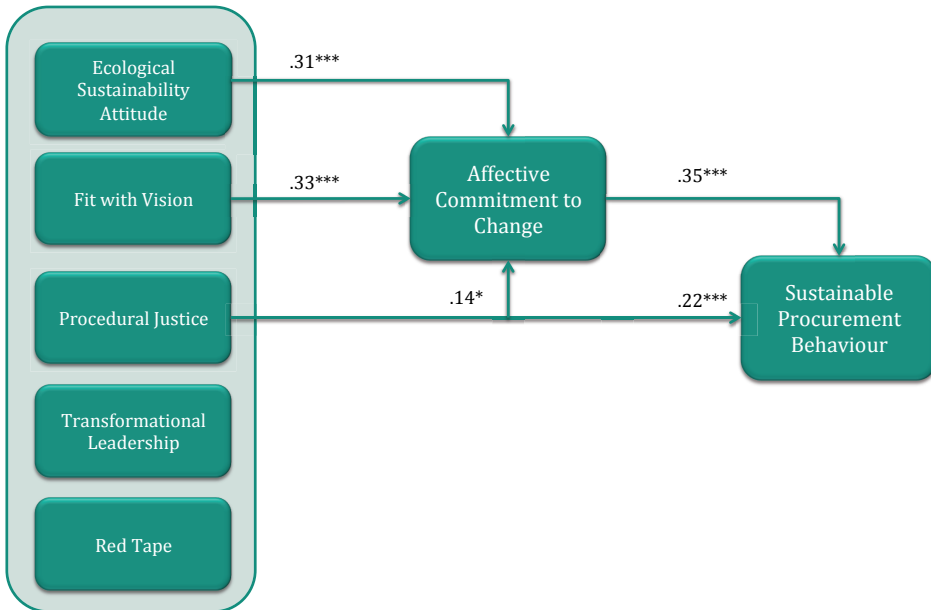
In the third step, we regressed the hypothesised independent variables plus control variables on the dependent variable (sustainable procurement behaviour) to check if the antecedents are related to the dependent variable. If the independent variables and the dependent variable are not significantly related to each other, there is no mediation. In this step, we found that procedural justice ( $\beta = .27^{***}$ ), fit with vision ( $\beta = .22^{***}$ ) and ecological sustainability attitude ( $\beta = .17^{***}$ ) are all significantly related to sustainable procurement behaviour, and transformational leadership and red tape were not significantly related to sustainable procurement behaviour.

However, if we add affective commitment (step 4) to the regression analysis, the significance of the relationship between fit with vision and ecological sustainability attitude and sustainable procurement behaviour disappears. The fact that by adding affective commitment to change to the regression analysis, fit with vision and ecological sustainability attitude are no longer significantly related to sustainable procurement behaviour means that mediation is present. We can thus state that affective commitment to change is the mechanism that mediates the relationship between fit with vision, ecological sustainability attitude and sustainable procurement behaviour. Interestingly enough, the relationship between procedural justice and sustainable procurement behaviour remained significant ( $\beta = .22^{***}$ ), even though this variable is also significantly related to affective commitment to change. This result shows that procedural justice influences sustainable procurement both directly and indirectly via affective commitment to change.

With the Baron and Kenny method, we are able to see that affective commitment to change acts as a mediator. However, this analysis does not tell us whether this mediated relationship is significant. We therefore also employed a bootstrapping analysis<sup>8</sup> (Hayes, 2009; Preacher & Hayes, 2004). The bootstrapping analysis showed that the relationship between fit with vision and sustainable procurement behaviour is indeed significantly mediated by affective commitment to change (BootLLCI = .1140 and BootULCI = .2398). The relationship between ecological sustainability attitude and sustainable procurement is also significantly mediated by affective commitment to change (Boot-LLCI = .1689 and BootUCLI = .3577). And the same holds for the relationship between procedural justice and sustainable procurement behaviour, which is partially mediated by affective commitment to change (BootLLCI = .0872 and BootUCLI = .2062).

Based on the outcomes of the analyses, an empirical model can be constructed (Figure 7.2) that shows all the significant relationships between the variables. The model shows that a high ecological sustainability attitude, fit with vision and procedural justice increase the affective commitment to change of the respondents, which in turn increase their sustainable procurement behaviour. However, a high degree of procedural justice does also directly cause the procurers to show more sustainable procurement behaviour. In the next section, we will discuss the conclusions that can be drawn from the results and the empirical model in more detail.

8 A bootstrapping analysis gives a robust estimate of the mediation and provides bias-corrected confidence intervals that help us examine whether the indirect effects are significant (Vermeeren, 2014). If the interval between the upper and lower bound does not include zero, the indirect relationship is considered significant (Preacher and Hayes 2004). The results are based on bias corrected and accelerated confidence intervals set at .95 with 1.000 samples (replacement).

**Figure 7.2.** Empirical model

## 7.6. CONCLUSION

Because the decisions of the procurers determine whether the full potential of sustainable procurement is used, their behaviour is considered to be critical for the implementation of sustainable procurement. However, previous procurement policies have caused procurers to become more risk-averse and less likely to partake in innovative projects.

Their behaviour thus needs to change in order to reach the full potential of sustainable procurement. In this study, we therefore examined the sustainable procurement behaviour of public procurers in the Dutch national government, at the level of the individual procurer. This in contrast with most studies into sustainable procurement, that examined sustainable procurement practices at the organisational, national, or even international level (e.g. Erridge and Hennigan 2012; Melissen and Reinders 2012; Preuss 2009), thereby overlooking what happens at the level of the individual procurer. Because little is known about the procurement behaviour of procurers and what influences this behaviour, we borrowed insights into general employee behaviour and its determinants from change management theory and developed a conceptual model. To test the model, we send a survey to all public procurers working in the Dutch national government. Based on the results of the survey, we can draw five conclusions.

*First*, the results show that the degree of sustainable procurement behaviour varies across the population of procurers. Even though they might be procuring different goods and services, all the respondents are working in the same national government, under the same laws and regulations and are implementing the same sustainable procurement policy. Their sustainable procurement behaviour however varies greatly, which suggests that their behaviour is thus also being influenced by other factors, which brings us to our second conclusion.

*Second*, sustainable procurement behaviour is influenced by only one specific type of commitment to change: affective commitment to change. Theoretically, three types of commitment to change can be distinguished: affective, normative and continuance commitment to change. However, our results show that only if the commitment of the procurers to change is based on an inherent belief in the benefits of sustainable procurement (affective commitment), procurers show more sustainable procurement behaviour. Thus, if procurers are committed to change because of pressure from their peers or out of a fear for penalties, they do not show more sustainable procurement behaviour. This is a relevant result, because this suggests that public organisations that want to increase the sustainable behaviour of public procurers will not reach their goal via penalties or peer pressure. Only an inherent belief of the procurer itself in the benefits of sustainable procurement will increase the sustainable procurement behaviour of the public procurer.

However, our *third* conclusion is that there is another factor that directly causes procurers to show more sustainable procurement behaviour, which public organisations might find easier to influence: procedural justice. Based on existing research, we expected that if procurers perceived the procedures that were used to implement the policy on sustainable procurement as just, they would become more committed to the change and thus more willing to implement sustainable procurement. However, our results show that if the procurers perceive a high degree of procedural justice, they do not only become more committed to change, but also directly show more sustainable procurement behaviour. Affective commitment to change thus only partially mediates the relationship between procedural justice and sustainable procurement behaviour, because there is also a direct relationship with procedural justice. Public organisations that want to increase the sustainable procurement behaviour of their procurers should therefore look closely at the procedures they use and want to use to implement the policy further and ensure that they are perceived by the procurers as just. They could, for example, do this by inviting procurers to take part in the development of procedures or policy documents.



We did however not find all hypotheses to be correct. Our *fourth* conclusion is that a high degree of red tape and transformational leadership of the direct supervisors do not influence commitment to change or sustainable procurement behaviour. Although the procurers reported a high degree of red tape, this appears to be a constant for all procurers. Red tape is simply a factor that all procurers have to deal with in their work, but that does not specifically decrease their commitment to change or sustainable procurement behaviour. The same holds for leadership. Although having a direct supervisor with a transformational leadership style leadership' might make the job of the procurer better in general, this does not significantly influence their commitment to change or show sustainable procurement behaviour. Thus, although fewer red tape and more transformational leadership might be desirable in general, it will not help public organisations increase the commitment to change and subsequent sustainable procurement behaviour of their procurers.

Our *fifth* and final conclusion is that affective commitment to change does significantly and fully mediate the relationship between fit with vision, ecological sustainability attitude and sustainable procurement. This means that affective commitment to change is the mechanism that connects fit with vision, ecological sustainability attitude with sustainable procurement behaviour. Thus, the more the procurers perceive a fit between the strategic vision of the organisation and the more positive their attitude is towards ecological sustainability issues, the more affectively committed the procurers will be to implement sustainable procurement, which subsequently causes more the procurers to show more sustainable procurement behaviour. Our finding that the more procurers perceive a match between the organisations strategic vision (endogenous institution) and the policy on sustainable procurement (exogenous institution) increases their commitment to change and their subsequent procurement behaviour thus supports Rolfstam's theory (2012) that a match between endogenous and exogenous institutions is important for innovation in public procurement to occur. By ensuring that there is a match between the exogenous institution of the policy and the endogenous institution of the organisation strategic vision, public organisations can influence and increase commitment to change and subsequent sustainable procurement behaviour.

## 7.7. LIMITATIONS AND FUTURE RESEARCH

Our study also has a number of limitations. *First*, the results of our study and the practical implications should be considered in light of the limited context of the study. Although a large portion of the population of procurers, working in all the procurement centres of the Dutch national government, took part in our survey we should re-

main careful in generalizing our findings to other procurers or civil servants working in other (public) organisations or countries. For future research, it would thus be very interesting to carry out a comparative study and examine the commitment to change and sustainable procurement behaviour across different layers of the government or countries.

*Second*, although our results show that affective commitment to change, procedural justice, fit with vision and ecological sustainability attitude play an important role in determining the sustainable procurement behaviour of the surveyed public procurers, these are only some pieces of the puzzle. The larger part of the variance in behaviour remains unexplained and calls for additional research. For example, our results show that a transformational leadership style of the direct supervisor does not have a direct impact on sustainable procurement behaviour. However, this does not mean that more specific leadership factors, such as management support or attitude of the leader towards ecological sustainability, might not be influencing sustainable procurement behaviour. In addition, we have left an array of other variables unstudied that other scholars consider to be influencing employee behaviour, such as perceived behavioural control and subjective norms (Ajzen, 1991), organisational stress (Vakola & Nikolaou, 2005) and change cynicism (Walker et al., 2007). As well as other factors, that sustainable procurement literature deems barriers to implementation, such as legal barriers and a (lack of) finance or knowledge (Brammer & Walker, 2011; Günther & Scheibe, 2006).

## 7.8. REFLECTION

In a time of ever tightening budgets and achieving more value for less, the focus on procurement as a policy tool to achieve desired outcomes in society increases. To fully utilise all the potential of sustainable procurement, the behaviour of public procurers is crucial. The commitment of actors engaged in procurement to embrace policy objectives or strategies is considered essential to generate the effort and energy necessary for a successful project, and determines where an organisation places itself on the continuum of innovator to laggard (McLaughlin, 1990; Meyer & Herscovitch, 2001; Meyer et al., 2002; Parish et al., 2008; Preuss, 2009). Public organisations that want to become innovators rather than a laggard, and want to increase their share of innovation in public procurement, do not only need to ensure that there is a match between endogenous and exogenous institutions (Rolfstam, 2012), but also need to consider the role of the public procurer in this process (Rolfstam, 2009). Our study shows that the sustainable procurement behaviour of the public procurers is directly and indirectly influenced by four factors: affective commitment to change, procedural

justice, fit with the organisation's vision and their attitude towards ecological sustainability and the environment. Half of these factors (affective commitment and ecological sustainability attitude) find their roots in the individual values and beliefs of the procurers. Interestingly enough, all of the factors that proved to be not to significantly influence sustainable procurement behaviour or commitment to change are external factors brought on by others. Both continuance and normative commitment to change have no significant influence on sustainable procurement behaviour, nor did we find leadership and red tape to significantly influence affective commitment to change. Thus, the degree of sustainable procurement behaviour of procurers largely depends on their personal beliefs and attitudes.

On the one hand, this makes it difficult for public organisations to exert direct influence on the behaviour of their employees. On the other hand, this does not mean that public organisations cannot do anything. Both sustainable procurement behaviour and affective commitment are influenced by the degree of perceived procedural justice of the procedures used to implement sustainable procurement. And a good fit between the vision of the organisation and the policy on sustainable procurement increases affective commitment to change, and subsequent sustainable procurement behaviour. Both procedural justice and fit with vision are factors that are developed by the organisation itself and can thus be influenced and adjusted.

Overall, we can conclude that it is not easy being green. It requires a great dose of affective commitment to change, and a positive attitude towards ecological sustainability from procurers. However, public organisations can make it easier to be green, by ensuring there is a fit between their strategic vision and their sustainable procurement policies, and allowing procurers to influence the procedures and thus increasing procedural justice. Thereby, making it easier for the organisation itself to be green too.



# Chapter 8

## Conclusions and discussion





## 8.1. INTRODUCTION

This research aimed to explore and explain the role of organisational factors and actors in the implementation of sustainable public procurement (SPP). The main conclusions of the research are presented in this final chapter. The individual findings of the four empirical studies are summarised in the next section, section 8.2. Section 8.3 offers an answer to the research question and presents the four main research conclusions. Section 8.4 reflects on the limitations of the research and section 8.5 ends this dissertation with recommendations for future research and practice.

## 8.2. SUMMARY OF THE FINDINGS

The role of organisational factors and actors in four different empirical studies were discussed in previous chapters. The next section summarises the findings from these studies.

### 8.2.1 Sustainable public procurement in practice

Two cases of sustainable procurement in the Dutch Ministry of Defence were examined in the first study (chapter 4) to answer the question:

*How do organisational factors influence the degree of sustainable procurement in public procurement projects in the Dutch national government?*

As relatively little was known about how factors could influence the implementation of SPP a more exploratory approach was employed in this study. The literature pointed to three organisational factors that could influence the implementation of SPP and which were deemed most prominent: commitment to change, expertise, and, top management support. A combined case study approach was used to trace the process that led to a certain degree of SPP and to compare the role of the influencing factors between the cases. The results of this analysis led to the following three conclusions, which were developed in chapter 4.

*First*, the degree of SPP fluctuates over the course of the procurement projects. Thus, SSP is not restricted to, nor set, at the beginning of the procurement project, but rather varies throughout the project under the influence of various factors or actors.

*Second*, out of the three factors identified in the literature, only affective commitment to change appears to be a direct determinant of the degree of sustainable procurement. Neither top management support, nor expertise, continuance commitment, nor normative commitment to change, appeared to play a significant role in determin-

ing the degree of sustainable procurement. Respondents even perceived their top management to be silent and absent in the implementation of SPP. However, merely concluding that affective commitment to change is the only determinant of the degree of sustainable procurement would be too simple.

The *third* and final conclusion was that actors also play an important role in determining the degree of sustainable procurement. In the case with the highest degree of sustainable procurement, two actors were identified who acted as change agents and tried actively to increase the commitment, expertise, and top management support for a specific sustainable procurement initiative. At first sight, such actors could not be identified for the case with the lower degree of sustainable procurement. Therefore, our overall conclusion was that both organisational factors (especially commitment) and actors appear to influence the degree of SPP.

The exploratory nature of this study helped us to examine if and how three organisational factors influenced the degree of sustainable procurement and to identify the potential role of change agents. The findings of this first study consequently strongly shaped the focus of the other studies. The second empirical study (chapter 5) zoomed in on the role of change agents in SPP. The third study (chapter 6) further examined if and how commitment to change and knowledge influenced the degree of sustainable procurement. The final study (chapter 7) identified the antecedents of affective commitment to change.

### 8.2.2 The role of change agents

Chapter five focust on one of the main findings of the first empirical chapter: the potential role of change agents in SPP, to answer the question:

*What role do change agents play in sustainable procurement projects in the Dutch national government?*

The decisions of project teams in the procurement process determine whether the potential of sustainable procurement is attained. Key actors, such as the members of procurement project teams, should be encouraged to adopt new behaviour (Armenakis & Bedeian, 1999). The literature shows that change agents can play this encouraging role. Two organisations and seven relevant procurement projects with variance in the degree of SPP were identified via an expert survey. The role and activities of change agents were compared<sup>9</sup> in these seven projects, which led to the following five conclusions:

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<sup>9</sup> Two of these seven cases, along with other aspects, are discussed in chapter 4.



*First*, although change agents are only a small part of the process leading towards more SPP, a change agent was present in six of the seven cases. They were able to help key actors enact desired behaviours by carrying out activities, such as organising workshops, giving advice, or arranging software tools. *Second*, the role and presence of these change agents subsequently influenced the degree of sustainable procurement in all the cases where they were present. *Third*, the activities that these change agents carried out varied throughout the change process. This allowed them to match their activities to the needs of key actors in the procurement projects. *Fourth*, the change agents appeared to make conscious decisions regarding which projects to participate in and how much time and energy they wanted to invest in these projects. Therefore, his or her activities should be studied at both the project and organisational level to fully understand the importance and role of the change agent. *Fifth*, an interesting pattern emerged with regard to the role of change agents and the degree of sustainable procurement at the project level. The cases with the most proactive and embedded change agents exhibited the highest degree of sustainable procurement, whereas the lowest degree of sustainable procurement is associated with the cases with the least proactive and embedded change agents.

Overall, we concluded that actors, and specifically change agents, played an important role and their actions matter for the implementation of SPP.

### 8.2.3 Fulfilling the potential of sustainable public procurement

In the first empirical study, discussed in chapter 4, we qualitatively explored the role of affective commitment to change and expertise in determining the degree of SPP. These factors were examined further by a quantitative survey in chapter 6.

Our first empirical study and the literature identified affective commitment to change, knowledge, and expertise as potential barriers or drivers of SPP. However, no study had yet tested if and how these factors actually determined the degree of sustainable procurement.

Therefore, we developed a conceptual framework drawing on organisational change theory that conceptualised how affective commitment to change and knowledge could influence the implementation of SPP. For example, according to organisational change studies (Ajzen, 1991; Metselaar, 1997), behaviour is the mediating variable that operates in the black box between organisational factors and outcomes. Therefore, we tested if behaviour indeed acted as a mediator between knowledge, affective commitment to change, and the implementation of SPP by conducting a survey amongst public procurers working in the Dutch national government. The research question was:

*Does the individual sustainable procurement behaviour of public procurers mediate the relationship between affective commitment to change, knowledge, and the degree of sustainable public procurement?*

The results of the analyses in chapter 6 resulted in four conclusions: *First*, the implementation of SPP is indeed directly influenced by the behaviour of the procurers. *Second*, the sustainable procurement behaviour of procurers is influenced in turn by two individual characteristics of the procurers: their willingness (affective commitment to change) and their ability (knowledge) to show this sustainable procurement behaviour. *Third*, our study shows that sustainable procurement behaviour fully mediates the relationship between two drivers of SPP (knowledge and affective commitment to change), and the implementation of SPP in public procurement projects. There is no direct effect between knowledge and affective commitment to change and the implementation of SPP. *Fourth*, the effect size of sustainable procurement behaviour, affective commitment to change, and knowledge varied according to the type of SPP. The direct and indirect relationships both showed a larger effect size on voluntary SPP compared with compulsory SPP.

Overall, chapter 6 shed some light on the black box between the drivers and barriers of SPP and the degree of SPP with the identification of sustainable procurement behaviour as the mediating link between the two.

#### 8.2.4 It's not easy being green

The first empirical study (chapter 4) identified affective commitment to change as a potential determinant of the degree of SPP. The third empirical study (chapter 6) confirmed this and showed that affective commitment to change increases the degree of SPP via sustainable procurement behaviour. We examined this relationship further in chapter 7 to answer the question:

*Is the sustainable procurement behaviour of Dutch public procurers influenced by commitment to change and what are the antecedents of their commitment to change?*

Six important issues for change management were identified in chapter 2 using the framework by Kuipers et al. (2014): content; process; outcome; leadership; and, individual characteristics. In chapter 7 we identified factors belonging to each of these aspects that are expected to implement affective commitment to change of the procurers: fit with vision (content); procedural justice (process); red tape (context); transformational leadership (leadership); and, ecological sustainability attitude (in-

dividual). This study focused on the transformational leadership style of the direct supervisor since the first empirical study (chapter 4) found top managers to be absent in the implementation of SPP. A survey was conducted amongst all public procurers working in the Dutch national government to answer the research question and to test the hypotheses<sup>10</sup>.

The analyses of the survey data in chapter 7 led to the following conclusions: *First*, the degree of sustainable procurement behaviour varied. *Second*, only one type of commitment to change (affective commitment to change) significantly influenced the degree of sustainable procurement behaviour. Normative and continuance commitment to change were not found to have had a significant effect. *Third*, contrary to the hypothesis, procedural justice not only increased commitment to change, but also increased sustainable procurement behaviour directly. Thus, affective commitment to change only partially mediated the relationship between procedural justice and sustainable procurement behaviour. Also, in contrast with the hypotheses, the *fourth* conclusion was that a high degree of red tape and transformational leadership of the direct supervisors had not influenced commitment to change or sustainable procurement behaviour. Thus, although fewer red tape and more transformational leadership might be desirable, in general, it will not help public organisations increase the commitment to change and subsequent sustainable procurement behaviour of their procurers. The *fifth* and final conclusion was that affective commitment to change significantly and fully mediated the relationship between the fit with vision, ecological sustainability attitude and sustainable procurement behaviour.

Overall, chapter 7 concluded that it is not easy for procurers to be green. It required a great dose of affective commitment to change and a positive attitude towards ecological sustainability. However, public organisations could make it easier for procurers to be green by ensuring a better fit between their strategic vision and their sustainable procurement policies. This would allow procurers to influence the procedures and increase procedural justice and, thereby, make it easier for the organisation itself to be green as well.

### 8.3. CONCLUSIONS

We can build on the findings of the four empirical studies summarised in the previous section and now move beyond the findings of the individual studies to answer the research question and present an overall conclusion of the research. The research question was:

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10 The analysis of this study and that discussed in chapter 6 are derived from the same sample.

*To what extent and how do organisational factors and actors influence the implementation of sustainable public procurement in the Dutch national government?*

The answer to the research question is that in the implementation of SPP actors seem to matter more than factors. Only actors were found to significantly and directly influence the degree of SPP in procurement projects. This answer is based on the following four main conclusions from the research.

*Conclusion 1: the behaviour of actors is crucial for the implementation of SPP.*

The behaviour of two specific actors (i.e. public procurers and change agents) was crucial in the implementation of SPP. The behaviour of *public procurers* directly determined how much SPP was implemented in the procurement projects. The procurers were able to increase the degree of SPP in the projects by behaviour such as: looking up additional information; challenging suppliers to develop sustainable alternatives; or, speaking positively about sustainable procurement with colleagues. Such behaviour increased the implementation of both compulsory and voluntary SPP, although it had an especially large influence on the inclusion of voluntary SPP.

The behaviour of *change agents* was also vital in the implementation of SPP. These change agents, usually sustainability advisors, carried out several activities to help procurement project-teams progress towards implementing (more) SPP in their procurement projects. Their activities included organising workshops, providing tools or giving advice. These had a direct and positive effect on the degree of sustainable procurement of the projects and helped project teams overcome barriers and make them more willing and able to implement SPP in their projects. Change agents were, in a way, informal leaders who showed procurers and project teams how to implement SPP.

However, the intensity of the behaviour of change agents also mattered. The more *pro-active* and *embedded* the change agents were the more sustainable procurement the projects became. Less pro-active change agents with less personal contact with the project teams resulted in procurement projects with less SPP. Thus, doing *something* was better than doing nothing, but more pro-active and embedded change agents generated much more results.

*Conclusion 2: Public procurers show more sustainable procurement behaviour if they are willing and able.*

Actors also hold the key to more sustainable procurement behaviour. Procurers showed more sustainable procurement behaviour if they were willing and able to

do so. Both the qualitative and quantitative studies showed that, the more procurers were *committed* (willing) to implementing SPP, the more they reported sustainable procurement behaviour.

However, it matters also why they were committed. They had to be *affectively committed* to implement SPP, which is commitment out of an inherent belief in the benefits of the change. The finding that normative and continuance commitment to change, commitment out of peer pressure and fear for penalties did not significantly influence the behaviour of the procurers supports this conclusion.

However, procurers also had to be able to show the desired behaviour. More than half of them felt that they were not *knowledgeable* and, thus, not able enough to professionally procure in a sustainable manner. This research finding illustrates an important problem in the implementation of SPP, i.e. the more knowledgeable procurers felt the more sustainable procurement behaviour they reported.

Overall, the research shows that affective commitment to change and knowledge both had a significant indirect effect on the degree of SPP via sustainable procurement behaviour. Thus, a high degree of commitment and knowledge did cause more sustainable procurement behaviour and indirectly, increased the degree of sustainable procurement. Therefore, the level of affective commitment to change and knowledge of the procurers was important in the implementation of SPP.

*Conclusion 3: the organisation has to ensure that actors are able and willing to show the desired behaviour.*

The conclusion that actors were crucial in the implementation of SPP does not void the organisation of any actions or responsibilities towards the implementation of SPP. It has an important role in shaping the implementation process and the content of the policy, to ensure that the actors are willing and able to show the desired behaviour.

The research shows that the level of *procedural justice* of the implementation of SPP had a strong indirect and direct effect on the sustainable procurement behaviour of procurers. The more the procurers perceived that the procedures used to implement the policy on SPP were just the more they were committed and showed sustainable procurement behaviour. Thus, it would be up to the implementing organisation to ensure that there is a high degree of procedural justice in the implementation of SPP, for example, by involving public procurers in the development of these procedures.

However, to increase the affective commitment of the procurers to change there also needs to be a *fit* between the content of the policy and the organisation's strategic vision. The more the organisation's strategic vision synchronised with the content and

goals of the policy on SPP, the more public procurers were affectively committed to implement the policy. In the interviews respondents and change agents also indicated that it helped if they felt their organisation deemed sustainability to be important and that SPP was part of an organisation-wide approach.

Scholars and practitioners also often point to the negative role *red tape* can play in the implementation of organisational change. For example, a study commissioned by the Dutch Advisory Board on Administrative Burdens (ACTAL) concluded that overlap and a lack of vision created red tape in the implementation of SPP (ACTAL, 2011). However, although the procurers in our study did report a high degree of red tape, this did not significantly influence their sustainable procurement behaviour or affective commitment to implement SPP. Public procurement is characterised by a high degree of formalisation, and it appears as though red tape is a context factor that public procurers are required to deal with in most aspects of their work. Therefore, they are not hindered additionally by it when implementing SPP. Although it might feel counter-intuitive, public organisations that want to increase the implementation of SPP do not have to completely focus on diminishing red tape.

However, the organisation does have an important role in shaping the implementation process and content of the policy by ensuring there is procedural justice and a fit with the organisation's strategic vision.

*Conclusion 4: In the implementation of SPP formal leadership plays a smaller role than expected.*

Leadership is considered to be one of the key drivers in organisational change implementation (Herold et al., 2008; Higgs & Rowland, 2005; Van der Voet, 2014). Therefore, we examined several aspects of leadership: top management support; transformational leadership; and, change agents. Sustainable procurement and organisational change studies both identify top management support as an important factor in implementing a change (Brammer & Walker, 2011; Fernandez & Rainey, 2006). However, our first study showed that the top management was perceived as remaining silent and, thus, were not considered to play a role in the implementation of SPP. Also, a transformational leadership style of formal leaders is the most frequently studied and identified antecedent of employee commitment to change (Herold et al., 2008; Podsakoff et al., 1996). However, in our study (see chapter 7), we could not find a significant relationship between a transformational leadership style of the direct supervisor and the behaviour or affective commitment to change of procurers. The research shows that, neither top management support, nor a transformational leadership style of a direct supervisor, played a significant role in the implementation of SPP. Thus, formal leaders did not appear to play a big role in the implementation of SPP. However, informal lead-

ers (i.e. the change agents) did. They influenced the implementation of SPP by carrying out activities and the more pro-active (and thus transformational) their activities and role became, the more effective they were. Therefore, our final conclusion is that formal leadership plays a smaller role than expected in the implementation of SPP.

#### 8.4. METHODOLOGICAL LIMITATIONS

The previous paragraphs presented the conclusions of the research and the implications for SPP, change management, and public administration research. Many decisions were made over the course of this PhD research that had implications and posed methodological limitations for the research, which we will reflect on now.

##### *Limitation 1: Internal validity of the measurement of variables in the survey based articles (chapters 6 and 7)*

As also addressed in the individual studies we used self-reports to measure sustainable procurement behaviour, commitment to change, knowledge, and the degree of sustainable procurement from the same respondents. Although surveys are frequently used to measure such concepts (Choi, 2011; Griffin et al., 2007; Meyer et al., 2002) there is a risk of common method variance (Meier & O'Toole, 2013; Podsakoff & Organ, 1986). The results match the results of our comparative case studies discussed in chapter 4 and 5 in regard to the relationship between affective commitment to change and the degree of sustainable procurement behaviour, as well as the variance in the degrees of sustainable procurement. We also conducted a statistical test for common method variance for both quantitative studies. The results do not completely rule out the possibility of common method variance, but they do indicate that it is not likely to influence greatly the results of the analysis.

The use of more objective measures, such as the analysis of procurement contracts, would have reduced the limitations of the perceived measures. Unfortunately, these documents were not archived systematically in the Dutch national government and, therefore, could not be obtained on a large scale. In addition, procurement projects typically take a very long time before they finish; it can be several years between the moment when the award- and selection criteria are determined and the actual delivery of the goods, services, or finishing of the road works. Therefore, it was not possible to examine within the timeframe of this research if the most sustainable offer was indeed selected and delivered based on the determined award- and selection criteria. Also, not all the projects the procurers reported in the survey had been awarded and, thus, no objective measures of what was awarded could be examined. Therefore, in

spite of its limitations, we chose to use perceived measures, as it was the only way we could measure the variables on a large scale within the timeframe of the research.

*Limitation 2: limited external validity of the research*

Because we examined only the implementation of sustainable procurement in the Dutch national government we cannot statistically generalise our findings to other public or private sector organisations and countries, nor to the implementation of other procurement policies across similar or different organisations. The fact that we asked procurers to report whether they applied the compulsory ecological selection and award criteria as stated in the Dutch policy enforces this. The measurement of the degree of SPP is thus also directly related to the Dutch policy, which limits the external validity of the research.

However, we based our expectations on and used organisational theories in the research that have been proven valid in a wide range of organisations and institutional contexts. Many of our findings are in line with these theories, such as the relationship between affective commitment to change and the change outcome. This suggests that some of findings could prove valid in other institutional contexts. Therefore, we will offer suggests for future research regarding this issue in section 8.5.

*Limitation 3: Conceptualisation of SPP*

Sustainable procurement is often considered to take into account the three P's: people, planet, and profit. In this research, we only examined one P (planet). This was due to the fact that in the Netherlands the social and economic aspects of sustainable procurement are part of different and completely separate policies, with separate implementation schemes. Combining these different policies into one study was therefore impossible. However, as the three elements are often considered interrelated an integrated view of sustainable procurement is particularly important, (Meehan & Bryde, 2011). Using a narrow conceptualisation of sustainable procurement therefore is a limitation of the research; it does however offer possibilities for future research, which is presented in section 8.5.

## **8.5. RECOMMENDATIONS**

The previous sections have summarised the findings of the four empirical studies, presented the main conclusions, and discussed the methodological limitations of the research. Now we will present recommendations for sustainable procurement research, change management research, public administration research, and practice based on these conclusions and limitations.



### 8.5.1. Recommendations for sustainable procurement research

We present the following three recommendations for future sustainable procurement research.

*Recommendation 1: further examine the role of actors in sustainable procurement*

Our research has shown that actors play a crucial role in the implementation of SPP. The behaviour of procurers and change agents determined the degree of sustainable procurement in public procurement projects. If the role of actors is underestimated and overlooked then an important, and perhaps the most important, piece of the puzzle of what influences the implementation of sustainable procurement is ignored and potentially makes it impossible to 'complete' this puzzle. However, this is exactly what sustainable procurement research has done until now. Most studies have focused on describing the content (Bratt et al., 2013; Melissen & Reinders, 2012), or barriers to sustainable procurement (Brammer & Walker, 2011; Giunipero et al., 2012; Günther & Scheibe, 2006), rather than examining how actors play a role in this. Our research showed the importance of examining the role of actors, as well as the value and applicability of theories and insights from adjacent fields, such as organisational change or change management, as frameworks for studying the role of actors and factors in the implementation of SPP. Therefore, it is recommended that future research into SPP should examine the role of actors in SPP further using insights from change management and organisational change theory.

*Recommendation 2: conduct comparative studies*

Research has shown public procurement and private purchasing to be very distinct from each other (Harland et al., 2013; Thai, 2001). This suggests that, due to very specific institutional system contexts, sustainable procurement will vary across countries (Lange et al., Forthcoming). In our research we have however not merely examined the degree of SPP but the role of factors and actors in the implementation of SPP. The relationships we identified, for example, between affective commitment to change, behaviour and the outcome of the change (the degree of sustainable procurement), match the results of numerous other studies into organisational change in a range of institutional contexts (e.g. Ajzen, 1991; Choi, 2011; Kuipers et al., 2014; Meyer et al., 2002). This raises the question whether the main conclusions of our research regarding the important role of actors and their behaviour and commitment to change in the implementation of SPP could be applicable also across a wider range of institutional contexts and, perhaps, even for the implementation of other procurement policies. Therefore, for future research and to develop a general theory of procurement policy change, comparative studies are needed to find out whether these findings are indeed applicable in other institutional context.

*Recommendation 3: examine the simultaneous implementation of multiple values in public procurement*

Our research examined only the implementation of SPP. However, the Dutch national government, as with many other governments, continues to increase the number of values and societal goals that they want to achieve through public procurement. For example, at the time of writing, Dutch public procurers are being asked to consider: the environment; stimulate innovation; offer opportunities for small and medium sized enterprises; ban slavery, child labour and discrimination; offer opportunities for long-term unemployed citizens; and, open up possibilities to apply 'bio-based procurement' and 'circular procurement' concepts (PIANOo, 2015). Thus, public organisations are requiring public procurers to walk on a tightrope, carefully balancing all the values they need to achieve, while staying within budget and schedule and, at the same time, adhering to all relevant rules, regulations, and international laws.

Our research showed that if a procurer is committed to the implementation of SPP, the procurement project becomes more sustainable. However, what does this mean for the other values that they are asked to implement? Does a high commitment to sustainable procurement diminish the opportunities for small and medium enterprises? Does a lot of knowledge about working conditions in supplier countries help tackle slavery, but diminish the degree of sustainability of the project? And what is the role of personal preferences of the procurer in this? To fully understand what influences the implementation of SPP, as well as other public procurement policies, it is necessary to examine how procurers deal with implementing these values simultaneously and how factors and actors play a role in this process.

#### 8.5.2. Recommendations for change management research

We present the following three recommendations for future change management research.

*Recommendation 1: examine other types of organisational change*

The transformation from regular procurement towards sustainable procurement might seem like a minor change compared to more stereotypical organisational changes in public organisations, such as reorganisations and mergers. However, in a similar fashion to those more stereotypical organisational changes, the implementation of SPP requires organisational routines to be changed. We used concepts and theory from change management literature and organisation theory to frame the research and to identify potential mechanisms between the barriers and drivers of SPP and the implementation of SPP. The framework developed by Kuipers et al. (2014) was used specifically in our research to identify important factors for each important change

management issue in the implementation of SPP: context; content; process; outcome, and, leadership issues. The results show that this framework is useful, not only for the identification of important issues in examining a more stereotypical organisation change, but also for the identification of issues in examining the implementation of public policies and policy change. The research shows the applicability of this framework outside the traditional field of change management and implies that the breadth of impact of change management research also includes policy implementation and policy change. Therefore, we recommend future research widen its scope to include examination of other types of organisational change from a change management perspective, such as procurement policy changes.

*Recommendation 2: include individual level factors in the examination of organisational change*

Walker, Armenakis, and Bernerth (2007) concluded that a complete model of change should not only address macro-level factors, such as content, process, or contextual factors, but also micro-level factors. We extended the model by Kuipers et al. (2014) by adding individual level factors, such as knowledge, behaviour, or attitude towards the environment, which play a crucial role in the implementation of SPP. Our findings show the behaviour of individual procurers and change agents determine directly the implementation of the change and its successfulness. When examining the implementation of a change, it is therefore crucial to include such factors at the individual level to examine all aspects in an organisational change and we therefore recommend that future research includes individual level factors in the examination of organisational change.

*Recommendation 3: examine the varying role of change agents during the change process*

We used a framework developed by Armenakis and Bedeian (1999) that connects phases within which change agents act with stages through which change targets progress. This framework allowed us to map the activities of the change agents according to the three phases of organisational change and the three stages through which the project teams progressed. This showed that change agents carry out different activities throughout the change process. Consequently, their role in the procurement projects also varies. It appears that change agents start as ‘champions of change’ in the first stage whereas, in the exploration and implementation phase, they act more as ‘advisors’. The findings show not only the applicability of the framework by Armenakis and Bedeian (1999) to understanding the role of change agents in the implementation of SPP, but also suggest an expansion of the framework to include the varying role of the change agents as a reaction to meet the needs of the change targets.

### 8.5.3. Recommendations for public administration research

Research in the public administration discipline is characterised by its multidisciplinary nature (Raadschelders, 1999). Many studies use insights from other fields and therefore many of the previous recommendations for sustainable procurement and change management research therefore also apply for future research in the public administration discipline.

For example, our research showed that actors have a large influence on the successfulness of the implementation of sustainable public procurement. This raises the question how actors influence the implementation of other policies. Does the affective commitment to change of civil servants for example influence the implementation of new regulations? However, to answer such a question it is necessary to examine individual level characteristics, such as knowledge, commitment, and behaviour. Our research also showed the applicability of change management theory for examining policy implementation, and it is therefore recommended that future public administration research benefits from that and uses those insights for examining the role of actors in all sorts of organisational changes in public sector organisations. Similar to public procurers, civil servants are often asked to simultaneously consider and apply multiple values in their work.

We therefore recommend future research in the public administration discipline to also examine the role of actors in policy implementation processes, include individual level characteristics, examine other types of organisational changes and study the simultaneous implementation of multiple values. In addition, we present the following specific recommendation for future research in the field of public administration.

*Recommendation: include the procurement process*

Chapter one showed that, as a way to overcome market failure, governments often take it upon themselves to act to reach desired goals in society (Donders & Gradus, 2007). This means achieving public values and, within public administration, public values are an important subject (Jørgensen & Bozeman, 2007). Our research examined how the Dutch national government tried to achieve value through procurement and, in our case, sustainable value. It is odd that procurement plays such a small role in public administration research when public procurement is a policy tool that can help achieve desired outcomes in society. Procurement is examined often from a different perspective under different labels, such as public private partnerships, co-creation, and governance networks or, simply, just under the header of the project, such as construction or spatial planning projects. Our research showed that decisions made in the procurement process influence how sustainable the procurement was, and thus what the government is going to spend their money on. Thus, public administration

should consider the procurement process when examining, for example, co-creation, public private partnerships, or construction projects.

#### 8.5.4. Recommendations for practice

This research finds its origin in practice. In 2009, the Dutch Ministry of the Interior and Kingdom Relations asked us to look into and examine the implementation of sustainable procurement. Therefore, it is only natural we should end this dissertation on a practical note. We will therefore present three recommendations for practice.

##### *Recommendation 1: ensure that the necessary conditions for public procurers to show sustainable procurement behaviour are present*

First, this research shows that the sustainable procurement behaviour of the procurers directly and significantly increases the implementation of sustainable procurement in procurement projects. The behaviour of public procurers is thus very important for how successful sustainable procurement is. If public organisations want to make their SPP policies more successful and to utilise the full potential of SPP, they need to ensure that all the conditions necessary for public procurers to show this desired behaviour are present. This starts with ensuring that the procurers are willing and able to show this behaviour. As our research has shown, only commitment to change based on an inherent belief in the benefits of sustainable procurement resulted in more sustainable procurement. Commitment out of peer-pressure or the fear of being penalised did not render the same result. Therefore, public organisations should refrain from using peer-pressure or penalties to 'force' procurers into procuring sustainably. Rather they should focus on raising awareness. Our research also shows that more than half of the procurers felt that they were not knowledgeable enough to procure in a professional manner to achieve sustainable procurement. This lack of knowledge indirectly diminished the degree of SPP. Therefore, public organisations should organise ways to increase and to update the knowledge of their procurers, for example, through workshops, lectures, conferences or books and magazines.

##### *Recommendation 2: ensure that the procedures are perceived as just*

Our results show that the implementation process and, specifically, the justice of the procedures used to implement the policy on sustainable procurement directly influenced the sustainable procurement behaviour. Thus, public organisations should ensure that the procedures used to implement procurement policies are perceived as just by their procurers and look for ways to increase this. At the time of writing, the Dutch national government was starting a new round of updating the environmental procurement criteria. Public procurers could be invited to (electronically) take part in the development of these criteria to increase the perceived procedural justice of

the implementation of these new criteria. Several studies into the implementation of organisational changes have proven the usefulness of such participation and a more bottom-up approach (e.g. Beer & Nohria, 2000; Morgan & Zeffane, 2003; O'Brien, 2002).

*Recommendation 3: honour and reward change agents*

Change agents were found to be important actors able to help project teams overcome barriers and implement SPP in their projects. They acted as motivators, experts, and problem solvers, whilst their actions could be related directly to increases in the degree of sustainable procurement of the projects. Therefore, they matter greatly for the successful implementation of SPP. Although the change agents appeared to be very passionate about SPP and wanting to implement it in their organisation, they did find it a difficult task. They were, sticking their necks out voluntarily and their efforts were not always met with great enthusiasm by the organisation. They regularly felt underappreciated and, sometimes, even felt that their activities as a change agent would not benefit their career.

Given the importance of these change agents for the successful implementation of SPP public organisations should encourage people to become change agents and reward them for trying to bring the policy to another level. They should be honoured and rewarded for their work which, given the intrinsic motivation of change agents, does not have to be costly or difficult. A little appreciation will go a long way and, most of all, being a change agent should have a positive effect on their career in the organisation, not a negative one.







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## RELEVANTIE EN DOELEN VAN HET ONDERZOEK

Publieke organisaties kopen voor de beleidsuitvoering en voor de eigen bedrijfsvoering goederen en diensten in, variërend van pennen en papier tot gevechtsvliegtuigen, schoonmaakdiensten en snelwegen. Overheidsinkoop vertegenwoordigt 16% van het bruto nationaal product in de Europese Unie. De Nederlandse Rijksoverheid alleen al geeft per jaar 10 miljard euro uit aan de inkoop van goederen en diensten. Steeds vaker gebruiken overheden hun macht in de markt om private partijen te dwingen bij te dragen aan het behalen van maatschappelijke doelen (Rolfstam, 2009). Hierdoor is overheidsinkoop een belangrijk beleidsinstrument. In dit onderzoek staat een specifieke vorm van overheidsinkoop centraal: duurzame publieke inkoop (DPI).

Duurzaam inkopen betekent dat goederen en diensten op een zodanige manier worden ingekocht, dat gedurende de volledige levensduur van het product de maatschappij en het milieu zo min mogelijk worden belast (Meehan & Bryde, 2011). Onderzoek laat echter zien dat de aard en mate van DPI sterk verschilt tussen organisaties en regio's (Brammer & Walker, 2011). In een tijd van bezuinigingen en 'meer doen met minder' is het daarom belangrijk om te onderzoeken welke mechanismen deze variaties verklaren zodat het volledige potentieel van duurzaam inkopen kan worden benut en meer waar voor hetzelfde geld wordt verkregen.

Hoewel duurzaam niet hoeft te betekenen dat de inkoop daarmee ook duurder is, is simpelweg kiezen voor de goedkoopste optie niet meer mogelijk. Er moet immers ook rekening gehouden worden met een andere waarde (duurzaamheid) bij het inkopen van goederen en diensten. De implementatie van DPI vereist dan ook dat bestaande organisatieroutines worden veranderd zodat ze beter aansluiten op de nieuwe situatie. Om echt duurzaam in te kunnen kopen dienen inkopers dan ook hun inkooproutines, en dus gedrag, aan te passen.

De meeste onderzoeken naar duurzaam inkopen focussen op de identificatie van organisatiefactoren die een barrière of kans vormen voor duurzaam inkopen. Om de potentie van DPI te kunnen benutten, is het belangrijk om niet alleen te weten welke factoren barrières of kansen vormen, maar ook om te weten hoe en waarom ze van invloed zijn en wie daarin een rol spelen. De rol van actoren, zoals inkopers, in de implementatie van DPI wordt echter vaak over het hoofd gezien. Dit onderzoek heeft daarom als doel om inzicht te verkrijgen in de implementatie van duurzaam inkopen en te verklaren hoe organisatiefactoren en actoren deze implementatie beïnvloeden. De centrale onderzoeksvraag is daarom als volgt:

*In hoeverre en hoe beïnvloeden organisatiefactoren en actoren de implementatie van duurzaam inkopen binnen de Nederlandse Rijksoverheid?*

## THEORETISCH RAAMWERK

Inkopen is voor publieke organisaties anders dan voor private bedrijven. Zo wordt overheidsinkoop geacht te voldoen aan hogere eisen ten aanzien van bijvoorbeeld transparantie, integriteit, betrouwbaarheid en voorbeeldgedrag (Telgen, Harland & Knight, 2007). Ook gelden er voor publieke organisaties andere wet- en regelgeving bij het inkopen van goederen en diensten dan voor private bedrijven. Het feit dat overheidsinkoop gebruikt wordt als een beleidsinstrument maakt overheidsinkoop ook anders dan private inkoop. Met de implementatie van duurzaam inkopen wordt daarom extra complexiteit toegevoegd aan een al behoorlijk complex proces.

De implementatie van duurzaam inkopen vereist dat bestaande organisatieroutines worden aangepast aan de nieuwe situatie. Daarom kan de implementatie van duurzaam inkopen gezien worden als een organisatieverandering. In dit onderzoek is daarom gebruik gemaakt van literatuur over verandermanagement.

Volgens Kuipers et al. (2014) dienen bij het bestuderen van een organisatieverandering vijf soorten aspecten te worden onderzocht: proces-, inhoud-, context-, leiderschaps- en uitkomstaspecten. Op basis van literatuur over zowel duurzaam inkopen als verandermanagement zijn in dit proefschrift voor elk aspect de voornaamste organisatiefactoren voor de implementatie van DPI geïdentificeerd: 'change agents' en procedurele rechtvaardigheid (proces), red tape (context), fit met de organisatievisie (content), steun van het top management en transformationeel leiderschap (leiderschap) en commitment aan de verandering, duurzaam inkoopgedrag en de mate van duurzaam inkopen (uitkomst).

Veel van deze organisatiefactoren, zoals de change agents, transformationeel leiderschap, of duurzaam inkoopgedrag zijn onlosmakelijk verbonden met actoren of omvatten gedrag of houdingen van actoren. Om volledig inzicht te krijgen in de implementatie van DPI is het daarom noodzakelijk om ook de rol van actoren te onderzoeken. Met de toevoeging van twee factoren op het individuele niveau (kennis en attitude ten aanzien van het milieu) is daarnaast gekeken of de individuele kenmerken van actoren ook invloed hebben op de implementatie van DPI.

## ONDERZOEKSDESIGN EN ONDERZOEKSMETHODEN

Dit onderzoek heeft een mixed-method onderzoeksdesign. Dit design maakt het mogelijk om exploratie en generalisatie te combineren, verschillende onderzoeksvragen te beantwoorden, de bevindingen te trianguleren en te kijken of ze elkaar wederzijds bevestigen. Er is een combinatie gemaakt van case studies en enquêtes. Om de onderzoeksvraag adequaat te beantwoorden en de data goed te analyseren zijn vier

verschillende vormen van data-analyse gebruikt: back-and-forth coderen (studie 1), systematische analyse (studie 2), regressie en bootstrap analyse (studie 3) en 'structural equation modelling' met een bootstrap analyse (studie 4).

## DE BEVINDINGEN VAN DE STUDIES

### *Duurzaam inkopen in de praktijk*

In de eerste empirische studie, die wordt besproken in hoofdstuk 4, is in twee inkoopprojecten bij het Ministerie van Defensie het proces dat leidde naar een bepaalde mate van duurzaam inkopen getraceerd en de rol van commitment aan de verandering, expertise en steun van het top management onderzocht. De resultaten van de analyses in hoofdstuk 4 leidden tot de volgende drie conclusies:

Ten eerste fluctueerde de mate van duurzaam inkopen over de looptijd van de inkoopprojecten. Dit betekent dat de mate van duurzaam inkopen niet vanaf het begin van het project vaststaat, maar onder invloed van factoren of het handelen van actoren nog kan veranderen. Ten tweede lijkt van alle onderzochte variabelen alleen 'commitment aan de verandering een directe determinant te zijn van de mate van duurzaam inkopen. Zowel steun van het top management, expertise als de andere twee vormen van commitment aan de verandering (normatief en continuïteit) bleken geen directe determinant van de mate van duurzaam inkopen. Alleen wanneer actoren gecommitteerd waren aan de implementatie van DPI vanuit een inherente overtuiging van het nut en noodzaak van DPI (affectieve commitment aan de verandering) had dit invloed op de mate van duurzaam inkopen. Commitment vanuit groepsdruk (normatief) of angst voor represailles (continuïteit) bleek geen invloed te hebben op de mate van duurzaam inkopen.

Het is echter te kort door de bocht om te concluderen dat affectieve commitment aan de verandering de enige directe determinant van de mate van duurzaam inkopen is. In de case met de hoogste mate van duurzaam inkopen kunnen namelijk ook twee actoren worden geïdentificeerd die zich als 'change agents' gedroegen en actief probeerden de mate van commitment aan de verandering, kennis en top management support voor een duurzaam inkoop initiatief te vergroten en daarmee ook te zorgen voor meer DPI. In de casus met een lagere mate van duurzaam inkopen konden zulke actoren op het eerste oog niet geïdentificeerd worden. De eindconclusie van deze studie is dan ook dat zowel factoren in de organisatie (met name affectieve commitment aan de verandering), alsmede actoren de mate van duurzaam inkopen lijken te beïnvloeden.

### De rol van change agents

Hoofdstuk 5 (empirische studie 2) bouwt voort op de mogelijke rol van 'change agents' bij de implementatie van DPI. Via een enquête onder experts werden twee onderdelen binnen het Rijk geselecteerd (Rijkswaterstaat en het Ministerie van Defensie) en vervolgens zeven relevante inkoopprojecten (cases) gevonden met een verwachte variantie in de mate van duurzaam inkopen. In deze zeven inkoopprojecten zijn de rol en activiteiten van change agents ten aanzien van de implementatie van DPI onderzocht. Deze analyse leidde tot de volgende vijf conclusies:

Ten eerste, hoewel change agents maar een klein onderdeel uitmaken van het proces naar duurzamere inkoop, was in zes van de zeven cases een change agent aanwezig. Vijf van deze zes change agents waren duurzaamheidsadviseurs binnen de organisatie. Door middel van activiteiten, zoals het organiseren van workshops, het geven van advies of het regelen van software, konden zij anderen helpen het gewenste (duurzame) gedrag te vertonen. Ten tweede, de aanwezigheid van de change agents beïnvloedde de mate van duurzaam inkopen in alle cases waarin zij aanwezig waren. Ten derde, varieerden de activiteiten van deze change agents gedurende de loop van de inkoopprojecten. Hierdoor konden zij hun activiteiten aanpassen aan de behoeften van de andere actoren in de inkoopprojecten. Ten vierde, lijken de change agents bewust te kiezen hoeveel tijd en energie zij investeren aan specifieke inkoopprojecten. Ten vijfde, is er een interessant patroon ten aanzien van de rol van change agents en de mate van duurzaam inkopen zichtbaar. De cases met de meest proactieve en ingebedde change agents zijn namelijk ook de cases met de hoogste mate van duurzaam inkopen. Daarentegen heeft de case met de minst proactieve en ingebedde change agents ook de laagste mate van duurzaam inkopen. De eindconclusie van deze studie is daarom dat actoren, zoals change agents, een belangrijke rol spelen in de implementatie van duurzaam inkopen en door hun handelen verschil maken in de mate waarin duurzaam wordt ingekocht.

### De potentie van duurzaam inkopen

In de derde empirische studie, besproken in hoofdstuk zes, worden twee factoren uit de eerste empirische studie (affectieve commitment aan de verandering en kennis) verder onderzocht. De eerdere studie en de duurzame inkoopliteratuur suggereren dat deze twee factoren een mogelijke barrière of aanjager van duurzaam inkopen kunnen zijn. Tot op heden is er echter nog geen studie gedaan naar de daadwerkelijke invloed van deze factoren op de mate van duurzaam inkopen. Hierdoor is er in de literatuur een 'black box' ontstaan tussen aan de ene kant de barrières en aanjagers van duurzaam inkopen (organisatiefactoren) en aan de andere kant de mate van duurzaam inkopen (de veranderuitkomst). De verandermanagementliteratuur wijst in dat

verband gedrag van actoren aan als de mediator tussen organisatiefactoren en veranderingen. In deze studie is daarom specifiek gekeken of duurzaam inkoopgedrag van inkopers de relatie tussen kennis, affectieve commitment aan de verandering en de mate van duurzaam inkopen medieert. Om dit te onderzoeken zijn inkopers binnen de Nederlandse Rijksoverheid geënkquêteerd. De analyse van de enquête data leidde tot de volgende vier conclusies:

Ten eerste wordt de implementatie van duurzaam inkopen inderdaad direct beïnvloed door het gedrag van de inkopers en de keuzes die zij maken. Ten tweede wordt het duurzaam inkoopgedrag van de inkopers op haar beurt weer beïnvloed door twee individuele kenmerken van de inkopers: hun bereidheid (affectieve commitment aan de verandering) en mogelijkheid (kennis) om dit gedrag te vertonen. Onze studie laat ten derde zien dat duurzaam inkoopgedrag de relatie tussen kennis en commitment aan de verandering en de implementatie van duurzaam inkopen in inkoopprojecten inderdaad volledig medieert. Kennis en affectieve commitment aan de verandering beïnvloeden de mate van duurzaam inkopen dus niet direct, maar alleen indirect via duurzaam inkoopgedrag. Ten vierde, verschilt de invloed van duurzaam inkoopgedrag, affectieve commitment aan de verandering en kennis per type duurzame overheidsinkoop: de variabelen hebben zowel direct als indirect meer invloed op de vrijwillige toepassing van duurzaam inkopen, dan op de verplichte toepassing van duurzaam inkopen.

Hiermee kunnen we concluderen dat we in hoofdstuk 6 met de introductie van duurzaam inkoopgedrag als mediërende variabele de 'black box' tussen de barrières en aanjagers van duurzaam inkopen en de mate van duurzaam inkopen een beetje hebben geopend.

#### Het is niet makkelijk om duurzaam te zijn

In de laatste empirische studie, besproken in hoofdstuk 7, wordt dieper ingegaan op de relatie tussen affectieve commitment aan de verandering en duurzaam inkoopgedrag door de antecedenten van affectieve commitment aan de verandering te achterhalen. In hoofdstuk 4 werd affectieve commitment aan de verandering als een mogelijke determinant van de mate van duurzaam inkopen geïdentificeerd. Hoofdstuk 6 bevestigde dit en liet zien dat affectieve commitment aan de verandering de mate van duurzaam inkopen verhoogt via duurzaam inkoopgedrag. In de vierde empirische studie in hoofdstuk 7 is eveneens gebruik gemaakt van de data afkomstig van de enquête onder Nederlandse rijksinkopers. Op basis van de analyse van deze data zijn de volgende vijf conclusies getrokken:

Allereerst bleek de mate van duurzaam inkoopgedrag te variëren. Niet alle rijksinkopers vertonen dus evenveel duurzaam inkoopgedrag. Ten tweede bleek dit gedrag beïnvloedt te worden door de mate waarin de inkopers affectief geëngageerd zijn aan de verandering. Alleen wanneer inkopers affectief geëngageerd zijn aan de verandering, dus omdat ze zelf overtuigd zijn van het nut en de noodzaak van DPI, heeft het invloed op hun inkoopgedrag. Wanneer ze geëngageerd zijn aan de verandering vanuit groepsdruk of angst voor represailles zorgt dit niet voor duurzamer inkoopgedrag. Ten derde blijkt dat hoe meer de inkopers de regels en procedures die gebruikt waren voor de implementatie van DPI, zoals de ontwikkeling van de milieucriteria, rechtvaardig vinden, hoe duurzamer hun inkoopgedrag wordt. De verwachting was dat rechtvaardige procedures zorgen voor commitment aan de verandering, maar ze blijken daarnaast direct te zorgen voor meer duurzaam inkoopgedrag. Affectieve commitment aan de verandering medieert de relatie tussen procedurele rechtvaardigheid en duurzaam inkopen dus maar gedeeltelijk. Ten vierde, blijkt, ook tegen de verwachting in, dat als de directe leidinggevende een transformationele leiderschapsstijl heeft of er binnen de organisatie een hoop red tape is, dit geen invloed heeft op de mate van commitment aan de verandering of duurzaam inkoopgedrag. Kortom, hoewel minder red tape en meer transformationeel leiderschap in het algemeen wenselijk kunnen zijn, zal dit publieke organisaties niet helpen de mate van affectieve commitment aan de verandering en de mate van duurzaam inkoopgedrag van haar inkopers te vergroten. Ten vijfde, blijkt dat affectieve commitment aan de verandering de relatie tussen fit met de organisatiestrategie, attitude ten aanzien van het milieu en duurzaam inkoopgedrag volledig medieert. Dit betekent dat als inkopers een duidelijke overeenkomst zien tussen de organisatiestrategie en het DPI beleid, zij een positieve attitude hebben ten aanzien van de natuur en het milieu zij meer affectief geëngageerd raken aan de verandering en vervolgens ook meer duurzaam inkoopgedrag vertonen.

In het geheel genomen kan op basis hiervan worden geconcludeerd dat het voor inkopers niet eenvoudig is om duurzaam te zijn. Het vereist een grote dosis van affectieve commitment aan de verandering en een positieve houding ten aanzien van het milieu. Publieke organisaties kunnen het echter wel makkelijker maken voor inkopers om duurzaam te zijn door te zorgen dat de organisatiestrategie en duurzaamheidsbeleid op elkaar aansluiten, inkopers de mogelijkheid te bieden om invloed uit te oefenen op de implementatieprocedures en daarmee de procedurele rechtvaardigheid te verhogen. Dit maakt het ook voor de organisatie zelf makkelijker om duurzaam te zijn.

## CONCLUSIE

In het conclusiehoofdstuk wordt verder gekeken dan de bevindingen van de individuele studies en wordt een antwoord op de hoofdvraag gegeven en eindconclusies gepresenteerd. Het belangrijkste antwoord op de hoofdvraag is dat in implementatie van DPI actoren er meer toe lijken te doen dan organisatiefactoren. In dit onderzoek beïnvloedden alleen actoren direct en significant de mate van duurzaam inkopen in inkoopprojecten binnen de Nederlandse rijksoverheid. Dit antwoord is gebaseerd op de volgende vier eindconclusies van het onderzoek:

### **Conclusie 1: Het gedrag van actoren is cruciaal voor de implementatie van duurzame DPI.**

Het gedrag van twee specifieke actoren (publieke inkopers en change agents) is cruciaal in de implementatie van DPI. Via gedrag zoals het opzoeken van extra informatie, het uitdagen van leveranciers om duurzame alternatieven te ontwikkelen, of het positief spreken over duurzaam inkopen met collega's, beïnvloedden inkopers de mate van duurzaam inkopen. Dit gedrag zorgt voor meer toepassing van verplichte DPI, maar het heeft een extra grote invloed op de toepassing van vrijwillige DPI.

Het gedrag van change agents is ook essentieel in de implementatie van DPI. Deze change agents voeren activiteiten uit zoals het geven van advies, organiseren van workshops, regelen van software om projectteams te helpen duurzamer in te kopen. Change agents zijn dus eigenlijk informele leiders die inkopers en projectteams laten zien hoe zij duurzaam inkopen kunnen implementeren. Hoe meer proactief en ingebed de change agents zijn, hoe duurzamer er wordt ingekocht.

### **Conclusie 2: Publieke inkopers vertonen meer duurzaam inkoopgedrag als ze dit willen en kunnen.**

Actoren zijn de sleutel om tot duurzamer inkoopgedrag te komen. Inkopers tonen meer duurzaam inkoopgedrag als ze dit kunnen en willen doen. Zowel de kwalitatieve als de kwantitatieve studies laten zien dat hoe meer inkopers affectief geëngageerd zijn aan de implementatie van duurzaam inkopen, hoe meer duurzaam inkoopgedrag zij rapporteren.

Echter inkopers moeten ook in staat zijn om het gewenste gedrag te vertonen. Meer dan de helft van de geënquêteerde inkopers heeft het gevoel dat zij niet genoeg kennis hebben om professioneel duurzaam in te kopen. Deze bevinding illustreert een belangrijk probleem in de implementatie van duurzaam inkopen, zonder kennis van duurzaamheid worden namelijk traditionele (en niet de meest duurzame) keuzes gemaakt, waardoor de volledige potentie van DPI niet wordt benut. Inkopers kunnen

dan het gewenste duurzame inkoopgedrag niet vertonen, waardoor er ook minder duurzaam zal worden ingekocht.

### **Conclusie 3: De organisatie moet ervoor zorgen dat actoren het gewenste gedrag kunnen en willen vertonen.**

De conclusie dat actoren cruciaal zijn in de implementatie van duurzaam inkopen onthult organisaties niet van hun verantwoordelijkheden in de implementatie van DPI. Zij dienen de noodzakelijke randvoorwaarden te scheppen, waardoor actoren het gewenste gedrag kunnen en willen vertonen. Dit onderzoek laat zien dat de mate van procedurele rechtvaardigheid een sterk direct effect heeft op de mate van duurzaam inkoopgedrag. Hoe meer inkopers de procedures die gebruikt worden om duurzaam inkopen mee te implementeren ervaren als rechtvaardig, hoe meer zij gecommiteerd waren aan de verandering en hoe meer duurzaam gedrag zij rapporteerden. Het is daarom aan de organisaties om te zorgen dat er een hoge mate van procedurele rechtvaardigheid is ten aanzien van de implementatie van duurzaam inkopen, bijvoorbeeld door inkopers te betrekken bij de ontwikkeling van deze procedures. Echter, om de mate van affectieve commitment aan de verandering van de inkopers bij de implementatie van duurzaam inkopen te verhogen moet er ook een fit zijn tussen de inhoud van het beleid en de organisatiestrategie. Hoe meer de organisatiestrategie naadloos aansluit op de doelen en inhoud van het duurzaam inkoopbeleid, hoe meer inkopers betrokken raken aan de implementatie ervan.

Zowel de praktijk als wetenschap wijzen vaak op de negatieve rol die red tape kan spelen in de implementatie van een organisatieverandering. Hoewel in dit onderzoek inkopers een hoge mate van red tape rapporteerden had dit geen significante invloed op hun affectieve commitment aan de verandering of duurzaam inkoopgedrag. Het klinkt wellicht contra-intuïtief, maar dit betekent dat publieke organisaties die duurzamer willen inkopen zich niet hoeven te richten op het verminderen van red tape.

### **Conclusie 4: In de implementatie van duurzame overheidsinkoop speelt leiderschap een kleinere rol dan verwacht.**

Omdat leiderschap gezien wordt als één van de belangrijkste factoren in de implementatie van organisatieveranderingen, zijn in dit onderzoek diverse aspecten van leiderschap onderzocht: top management support, transformationeel leiderschap en change agents.

Zowel onderzoeken naar duurzaam inkopen als organisatieverandering wijzen top management support aan als een belangrijke factor in de implementatie van organisatieveranderingen. In dit onderzoek liet de eerste empirische studie echter zien dat de top door de inkoopteams als stil werd ervaren, en volgens hen niet geacht werd een



rol te spelen in de implementatie van duurzame overheidsinkoop. Ook transformatieel leiderschap, de factor die het vaakst is geïdentificeerd als een determinant van commitment aan de verandering, had in onze studie geen significante invloed op het gedrag of affectieve commitment aan de verandering van rijksinkopers.

Omdat zowel top management support als transformationeel leiderschap geen significante rol lijken te spelen in de implementatie van duurzaam inkopen, wordt dan ook geconcludeerd dat formeel leiderschap een kleinere rol speelt dan verwacht in de implementatie van DPI. Dit in tegenstelling tot de rol van informeel leiderschap. Change agents spelen immers wel een belangrijke rol.

## METHODOLOGISCHE BEPERKINGEN VAN HET ONDERZOEK

Gedurende de loop van dit promotieonderzoek zijn veel keuzes gemaakt die invloed hebben gehad op het onderzoek en soms een methodologische beperking vormen. In deze paragraaf wordt hierop gereflecteerd.

Omdat in dit onderzoek commitment aan de verandering, kennis en de mate van duurzaam inkopen allemaal door middel van zelfrapportage onder eenzelfde groep respondenten is gemeten, is er een kans op ‘common method bias’. Echter, zowel een statistische test, als de casestudy bevindingen die nauw aansluiten bij de bevindingen van de enquêtes, geven de indicatie dat de kans hierop relatief klein is.

Aangezien daarnaast de implementatie van duurzaam inkopen alleen binnen de Nederlandse rijksoverheid is onderzocht kunnen de bevindingen lastig gegeneraliseerd worden naar andere publieke of private organisaties, landen of ander (inkoop)beleid in dezelfde of andere organisaties. Het feit dat inkopers is gevraagd om te rapporteren of ze de verplichte duurzaamheidscriteria zoals geformuleerd in het Nederlandse rijksbeleid hebben toegepast versterkt dit nog meer. De meting van de mate van duurzaam inkopen is daarmee namelijk direct gerelateerd aan de Nederlandse beleidscontext en zodoende is de externe validiteit van het onderzoek beperkt.

Tenslotte wordt duurzaam inkopen meestal geacht de zogenaamde drie P's te omvatten: people, planet en profit. In dit onderzoek is slechts één P (planet) bestudeerd. In Nederland maken de sociale en economische aspecten van duurzaam inkopen namelijk deel uit van ander beleid, met elk een eigen implementatietraject. Hierdoor was het onmogelijk om alle verschillende elementen van duurzaamheid in één onderzoek te combineren. Aangezien de drie elementen van duurzaamheid vaak worden gezien als samenhangend, vormt de gebruikte conceptualisering van duurzaam inkopen dan ook een beperking van het onderzoek.

## AANBEVELINGEN VOOR VERDER ONDERZOEK EN DE PRAKTIJK

Op basis van de bevindingen en conclusies zijn in hoofdstuk 8 een aantal aanbevelingen voor de praktijk en verder onderzoek gepresenteerd. Deze aanbevelingen worden hier kort samengevat.

Ten eerste, omdat dit onderzoek het belang van actoren in de implementatie van DPI heeft laten zien, wordt aanbevolen in toekomstig onderzoek naar de implementatie van organisatieveranderingen, zoals DPI, de rol van actoren en individuele factoren mee te nemen.

Ten tweede, om een meer algemeen geldende theorie te kunnen ontwikkelen over veranderingen in inkoopbeleid is het noodzakelijk meer vergelijkende studies uit te voeren. Alleen dan kan onderzocht worden of de bevindingen uit dit onderzoek ook toepasbaar zijn in andere institutionele contexten.

Ten derde, heeft dit onderzoek laten zien dat keuzes die gemaakt worden in het inkoopproces doorwerken in hoe duurzaam er wordt ingekocht, en dus waaraan de overheid precies haar geld uitgeeft. Toekomstig bestuurskundig onderzoek raden we dan ook aan ook het inkoopproces mee te nemen in onderzoeken naar bijvoorbeeld co-creatie, publiek-private samenwerking of grond-, water- en wegprojecten.

Het startpunt van onderzoek was een vraag vanuit de praktijk. Het is daarom niet meer dan passend om het af te sluiten met een aanbeveling aan diezelfde praktijk. Publieke organisaties die duurzaam inkopen succesvol willen implementeren, wordt aanbevolen te zorgen voor de noodzakelijke randvoorwaarden voor publieke inkopers om duurzaam inkoopgedrag te vertonen, zoals het laten aansluiten van de organisatiestrategie op het duurzaam inkoopbeleid, rechtvaardige implementatieprocedures te gebruiken en change agents te waarderen en te belonen voor hun werk en inzet.









## RELEVANCE AND OBJECTIVES OF THE RESEARCH

For the execution of policies, as well as for its own operations, governments procure goods and services, ranging from paper and pencils to fighter planes, cleaning services and public road works. In the European Union public procurement represents 16% of the gross domestic product. The Dutch national government alone annually spends 10 billion euro on procurement. Governments are increasingly using their authority as a large buyer in the market to compel private organisations to contribute to the achievement of their public objectives (Rolfstam, 2009). Public procurement has thus become a policy instrument to reach societal outcomes. In this research a specific example of how the Dutch national government is trying to achieve an outcome in society via their procurement: sustainable public procurement (SPP) is examined.

Sustainable procurement refers to “the acquisition of goods and services in a way that ensures that there is the least impact on society and the environment throughout the full life cycle of the product” (Meehan & Bryde, 2011). Research has shown that the extent and nature of SPP varies greatly across organisations and regions (Brammer & Walker, 2011). In a time of cutbacks and ‘having to do more with less’ it is very relevant to examine the mechanisms behind these variations so that the full potential of SPP can be used and more value for money achieved.

The introduction of SPP requires existing organisational routines, and thus behaviour, to be questioned and subsequently altered into a new organisational routine (Becker et al., 2005; Jones, 2003). Although sustainable alternatives do not have to be more expensive, simply selecting the most cost-effective option is no longer possible, other values now have to be taken into account. To implement sustainable public procurement and apply it in procurement projects procurers thus have to change their organisational routines.

However, the role of actors, such as these procurers, in the implementation of SPP is often overlooked. The majority of studies into sustainable procurement focus on the identification of organisational factors that act as barriers and drivers of sustainable procurement, rather than the role of actors in this process. To utilise the full potential of SPP identifying these barriers or drivers is not enough. It is important to not only know what factors and actors influence the implementation of sustainable procurement, but also why, who are involved and perhaps more importantly how they influence the implementation of SPP.

The overall aim of this research is therefore to gain insight in the implementation of SPP and explain how factors and actors influence the implementation and uptake of SPP. In line with the aim of the research the main research question is:

*To what extent and how do organisational factors and actors influence the implementation of sustainable public procurement in the Dutch national government?*

## **THEORETICAL FRAMEWORK**

Due to specific demands procurement in the public sector is vastly different from its private counterpart. Public organisations for example have to meet higher standards regarding transparency, integrity, accountability, and exemplary behaviour (Telgen, Harland & Knight, 2007) and have to abide to different rules and regulations than private organisations when they are procuring goods and services. The notion that public procurement is used as a policy tool to reach desired outcomes in society also makes public procurement distinct from private purchasing. By implementing sustainable procurement the Dutch government is therefore adding complexity to the already complex procurement process.

Implementing sustainable procurement requires organisational routines to be changed and the implementation of sustainable procurement should therefore be viewed as an organisational change. This research has consequently used theories and insights from change management literature as a theoretical framework. Change management literature suggests that when an organisational change is studied five different aspects should be examined: process, content, context, leadership, and outcome issues (Kuipers et al., 2014). Based on the literature from both sustainable procurement and change management the most prominent factors for the implementation of SPP were identified for each aspect: change agents and procedural justice (process), red tape (context), fit with vision (content), top management support and transformational leadership (leadership), and commitment to change, sustainable procurement behaviour and degree of sustainable procurement (outcome).

Many of these factors are inherently tied to actors (e.g. change agents, transformational leadership, top management support) or involve behaviour, attitudes, or commitment to change of actors. Thus to fully gain insight in the implementation of sustainable procurement it is necessary to examine the role of actors in these the implementation of SPP. Also by adding individual level factors to the research (knowledge and ecological sustainability attitude) also allows us to examine whether personal characteristics of these actors play a role in the implementation of SPP.



## RESEARCH DESIGN AND METHODS

In the study a mixed-method research design is used. This design allows us to combine exploration with generalization, answer different research questions, triangulate the findings and see if they are mutually corroborated as well as deal with existing limitations in SPP research, such as the lack of explanatory and confirmatory studies and limited generalizability.

To adequately answer the research question and analyse the data four different types of data analysis were used: back-and-forth coding (study 1), systematic analysis (study 2), regression analysis with a bootstrap analysis (study 3), and structural equation modelling with a bootstrap analysis (study 4).

## THE FINDINGS OF THE INDIVIDUAL STUDIES

### *Sustainable procurement in practice*

In the first empirical study, discussed in chapter 4, the role of affective commitment to change and expertise in determining the degree of SPP, is qualitatively studied. These factors are examined further in the quantitative survey discussed in chapter 6. Using a combined case study approach the process that led to a certain degree of SPP could be traced and the role of the influencing factors compared across two cases of SPP in the Dutch Ministry of Defence. The results of the analysis led to the following three conclusions:

First, the degree of SPP fluctuated during the course of the procurement projects. The degree of SPP is thus not set at the beginning of the procurement project, but can vary throughout the project under the influence of factors or actors. Second, of the three factors identified in the literature only affective commitment to change appears to be a direct determinant of the degree of sustainable procurement. Neither top management support, nor expertise, continuance commitment nor normative commitment to change, appear to play a role in determining the degree of sustainable procurement. However, merely concluding that affective commitment is the only determinant of the degree of sustainable procurement is too simple. The third and final conclusion is therefore that actors play an important role in determining the degree of sustainable procurement too. In the case with the highest degree of sustainable procurement, we identify two actors that are acting as change agents and actively trying to increase the commitment, expertise, and top management support for a sustainable procurement initiative. In the case with the lower degree of sustainable procurement, such actors could not be identified at first sight. The overall conclusion of this study is therefore

that both organisational factors (and specifically commitment) and actors appear to influence the degree of SPP.

### *The role of change agents*

The second empirical study, discussed in chapter 5, further examined one of the main findings of the first empirical chapter: the potential role of change agents in SPP. Two organisations and seven relevant procurement projects with variance in the degree of SPP were identified via an expert survey. The role and activities of change agents were compared in these seven projects, which led to the following five conclusions:

First, although change agents are only a small part of the process towards more SPP, in six of the seven cases a change agent was present and able to help key actors enact desired behaviours by carrying out activities such as organizing workshops, giving advice or arranging software tools. Second, the role and presence of these change agents subsequently influences the degree of sustainable procurement in all of the cases where they were present. Third, the activities that these change agents carry out vary throughout the change process, which allows them to match their activities to the needs of key actors in the procurement. Fourth, the change agents appear to make conscious decisions regarding which projects to participate in and how much time and energy they invest in these projects. To fully understand the importance and role of the change agent, his or her activities therefore should be studied at both the project and organisational level. Fifth, regarding the role of change agents and the degree of sustainable procurement at the project level, we see an interesting pattern. The cases with the most proactive and embedded change agents have the highest degree of sustainable procurement, whereas the case with the least proactive and embedded change agent has the lowest degree of sustainable procurement. Overall, in this chapter we conclude that actors, specifically change agents, play an important role in the implementation of SPP and with their actions matter for the implementation of sustainable procurement.

### *Fulfilling the potential of SPP*

In the first empirical study, discussed in chapter 4, the role of affective commitment to change and expertise in determining the degree of SPP was qualitatively explored. In the third empirical study, discussed in chapter 6, the role of these factors was examined further in a quantitative way.

Although the first empirical study and the literature suggest affective commitment to change and expertise or knowledge could influence the implementation SPP, no study has yet tested if and how these factors actually determine the degree of sustainable procurement. In the literature there was therefore a 'black box' between the barriers

and drivers of SPP (factors) and the degree of SPP (the outcome). The change management literature points to behaviour as the mediating variable between organisational factors and change outcomes. In the third empirical study we therefore tested whether behaviour indeed acts as a mediator between knowledge, affective commitment to change, and the implementation of SPP by conducting a survey amongst public procurers working in the Dutch national government. The results of the analyses in chapter 6 resulted in the following four conclusions:

First, the implementation of SPP is indeed directly influenced by the behaviour (and the decisions) of the procurers. Second, the sustainable procurement behaviour of procurers is in turn being influenced by two individual characteristics of the procurers: their willingness (affective commitment to change) and ability (knowledge) to show this sustainable procurement behaviour. Third, our study shows that SPP behaviour mediates the relationship between two drivers of sustainable procurement (knowledge and affective commitment to change), and the implementation of SPP in public procurement projects. There is no direct effect between knowledge or affective commitment to change and the implementation of SPP. Fourth, the effect size of SPP behaviour, affective commitment to change, and knowledge varies per type of sustainable procurement. Interestingly, both the direct and indirect relationships show a larger effect size on voluntary SPP than on compulsory SPP.

Overall, we were able to shed some light on the black box between the drivers and barriers of SPP and the degree of SPP in chapter 6 with the identification of sustainable procurement behaviour as the mediating link between the two.

### *It's not easy being green*

The first empirical study (chapter 4) identified affective commitment to change as a potential determinant of the degree of SPP. The third empirical study (chapter 6) confirmed this and showed that affective commitment to change increases the degree of SPP via sustainable procurement behaviour. The analyses of the survey data in chapter 7 led to the following conclusions:

First, the degree of sustainable procurement behaviour varied which confirmed the finding of the first empirical study (chapter 4) that factors and actors can influence the implementation of SPP. The analyses of the survey data in chapter 7 led to the following conclusions: First, the degree of sustainable procurement behaviour varied which confirmed the finding of the first empirical study (chapter 4) that factors and actors can influence the implementation of SPP. Second, only one type of commitment to change (affective commitment to change) significantly influenced the degree of sustainable procurement behaviour. Normative and continuance commitment to

change were not found to have had a significant effect. Third, contrary to the hypothesis, procedural justice not only increased commitment to change, but also increased sustainable procurement behaviour directly. Thus, affective commitment to change only partially mediated the relationship between procedural justice and sustainable procurement behaviour. Also, in contrast with the hypotheses, the fourth conclusion was that a high degree of red tape and transformational leadership of the direct supervisors had not influenced commitment to change or sustainable procurement behaviour. Thus, although fewer red tape and more transformational leadership might be desirable, in general, it will not help public organisations increase the commitment to change and subsequent sustainable procurement behaviour of their procurers. The fifth and final conclusion was that affective commitment to change significantly and fully mediated the relationship between the fit with vision, ecological sustainability attitude and sustainable procurement behaviour.

Overall, the conclusion was drawn that it is not easy being green. It requires a great dose of affective commitment to change, and a positive attitude towards ecological sustainability from procurers. However, public organisations could make it easier for procurers to be green, by ensuring there is a fit between their strategic vision and their sustainable procurement policies, and allowing procurers to influence the procedures and thus increase procedural justice. Thereby making it easier for the organisation itself to be green too.

## CONCLUSION

In the concluding chapter we build on the findings of the four empirical studies summarised in the previous section and move beyond the findings of the individual studies to answer the research question and present an overall conclusion of the research. The main answer to the research question is that in the implementation of SPP actors seem to matter more than factors. Only actors were found to significantly and directly influence the degree of SPP in procurement projects. This answer is based on the following four main conclusions from the research.

### **Conclusion 1: the behaviour of actors is crucial for the implementation of SPP**

The behaviour of two specific actors (i.e. public procurers and change agents) was crucial in the implementation of SPP. Through behaviour such as: looking up additional information; challenging suppliers to develop sustainable alternatives; or, speaking positively about sustainable procurement with colleagues, public procurers directly determined how much SPP was implemented in the procurement projects.

Their behaviour increased the implementation of both compulsory and voluntary SPP, although it had an especially large influence on the inclusion of voluntary SPP.

The behaviour of change agents was also vital in the implementation of SPP. These change agents, usually sustainability advisors, carried out several activities such as organising workshops, providing tools or giving advice to help procurement project-teams progress towards implementing (more) SPP in their procurement projects. Change agents were, in a way, informal leaders who showed procurers and project teams how to implement SPP. And the more pro-active and embedded the change agents were the more sustainable procurement the projects became.

### **Conclusion 2: Public procurers show more sustainable procurement behaviour if they are willing and able**

Actors also hold the key to more sustainable procurement behaviour. Procurers showed more sustainable procurement behaviour if they were willing and able to do so. Both the qualitative and quantitative studies showed that, the more procurers were affectively committed (willing) to implementing SPP, the more they reported sustainable procurement behaviour.

However, procurers also had to be able to show the desired behaviour. More than half of them felt that they were not knowledgeable and, thus, not able enough to professionally procure in a sustainable manner. This research finding illustrates an important problem in the implementation of SPP, i.e. the more knowledgeable procurers felt the more sustainable procurement behaviour they reported.

### **Conclusion 3: the organisation has to ensure that actors are able and willing to show the desired behaviour**

The conclusion that actors were crucial in the implementation of SPP does not void the organisation of any actions or responsibilities towards the implementation of SPP. It has an important role in shaping the implementation process and the content of the policy, to ensure that the actors are willing and able to show the desired behaviour.

The research shows that the level of procedural justice of the implementation of SPP had a strong indirect and direct effect on the sustainable procurement behaviour of procurers. The more the procurers perceived that the procedures used to implement the policy on SPP were just the more they were committed and showed sustainable procurement behaviour. It is thus up to the implementing organisation to ensure that there is a high degree of procedural justice in the implementation of SPP, for example, by involving public procurers in the development of these procedures.

However, to increase the affective commitment of the procurers to change there also needs to be a fit between the content of the policy and the organisation's strategic vision. The more the organisation's strategic vision synchronised with the content and goals of the policy on SPP, the more public procurers were affectively committed to implement the policy.

Scholars and practitioners also often point to the negative role red tape can play in the implementation of organisational change. However, although the procurers in our study did report a high degree of red tape, this did not significantly influence their sustainable procurement behaviour or affective commitment to implement SPP. While it might feel counter-intuitive, public organisations that want to increase the implementation of SPP do not have to completely focus on diminishing red tape.

#### **Conclusion 4: In the implementation of SPP formal leadership plays a smaller role than expected**

Because leadership is considered to be one of the key drivers in organisational change implementation, we examined several aspects of leadership: top management support; transformational leadership; and, change agents.

Although both sustainable procurement and organisational change studies identify top management support as an important factor in implementing a change the first study showed that the top management was perceived as remaining silent and, thus, was not considered to play a role in the implementation of SPP. Also, although transformational leadership style is the most frequently studied and identified antecedent of employee commitment to change. However, in this study (see chapter 7), a significant relationship between a transformational leadership style of the direct supervisor and the behaviour or affective commitment to change of procurers is not found.

As the research shows that, neither top management support, nor a transformational leadership style of a direct supervisor, played a significant role in the implementation of SPP, we conclude that formal leadership plays a smaller role than expected in the implementation of SPP. However, informal leaders (i.e. the change agents) did.

#### **METHODOLOGICAL LIMITATIONS OF THE RESEARCH**

Many decisions were made over the course of this PhD research that had implications and posed methodological limitations for the research, which we will reflect on now.

Because self-reports were used to measure sustainable procurement behaviour, commitment to change, knowledge, and the degree of sustainable procurement from the same respondents, there is a risk of common method variance. However, both a

statistical test and the findings from the qualitative case studies, which match the findings from the survey, indicate that the chance for common method variance is relatively low.

Also, because only the implementation of sustainable procurement in the Dutch national government was examined the findings cannot be statistically generalised to other public or private sector organisations and countries, nor to the implementation of other procurement policies across similar or different organisations. The fact that we asked procurers to report whether they applied the compulsory ecological selection and award criteria as stated in the Dutch policy enforces this. The measurement of the degree of SPP is thus also directly related to the Dutch policy and context, and the external validity of the research is therefore limited.

Furthermore, sustainable procurement is often considered to take into account the three P's: people, planet, and profit. In this research, we only examined one P (planet). This was due to the fact that in the Netherlands the social and economic aspects of sustainable procurement are part of different and completely separate policies, with separate implementation schemes. Combining these different policies into one study was therefore impossible. However, as the three elements are often considered interrelated an integrated view of sustainable procurement is particularly important, (Meehan & Bryde, 2011) the narrow conceptualisation of sustainable procurement is therefore a limitation of the research.

## **RECOMMENDATIONS FOR FUTURE RESEARCH AND PRACTICE**

Based on our findings and conclusions we present a number of recommendations for practice and future research in sustainable procurement, change management and public administration in chapter 8.

As our research showed the importance of examining the role of actors, as well as the value and applicability of theories and insights from adjacent fields, we recommend future research to include the role of actors and individual level factors when examining change, such as the implementation of SPP. To develop a more general theory of procurement policy change, also comparative studies are needed to find out whether these findings are indeed applicable in other institutional context. For research in the public administration discipline we specifically recommend them to include the procurement process as the research showed that decisions made in the procurement process influence how sustainable the procurement was, and thus what the government is going to spend their money on.

We conclude by recommending organisations that want to successfully implement sustainable public procurement, to ensure that the necessary conditions for public procurers to show sustainable procurement behaviour are present, procedures are perceived as just and change agents are honoured and rewarded.







# Appendix A

# Full measures used in chapter 6





*Sustainable procurement behaviour (adapted and extended version of the scales by Griffin, Neal, and Parker, 2007)*

How often have you...

1. Presented a positive image of sustainable procurement to other people?
2. Defended sustainable procurement if others criticised it?
3. Talked about sustainable procurement in positive ways?
4. Made suggestions to improve the overall effectiveness of sustainable procurement?
5. Involved yourself in changes that are helping improve the overall effectiveness of sustainable procurement?
6. Come up with ways of increasing the efficiency of sustainable procurement?
7. Looked up additional information about sustainable procurement or sustainability?
8. Sought advice, based on your own initiative, from inside or outside the organisation about sustainable procurement or sustainability,
9. Made suggestions to make a specific procurement project more sustainable?
10. Challenged suppliers to, either in dialogue, develop a most sustainable solution?

*Affective commitment to change (Meyer et al., 2002)*

1. I believe in the value of the implementation of sustainable procurement.
2. The implementation of sustainable procurement is a good strategy for this organisation.
3. I think that management is making a mistake by introducing the implementation of sustainable procurement (R).
4. The implementation of sustainable procurement makes an important purpose.
5. Things would be better without the implementation of sustainable procurement (R).
6. The implementation of sustainable procurement is not necessary (R).

*Knowledge*

To really professionally procure sustainable I should have more knowledge about sustainability and the environment (R).

*Degree of sustainable procurement*

Please state for each item whether this applies to the project.

1. The relevant ecological criteria and other ecological requirements from national or internal laws and regulations have been applied.
2. Additional ecological criteria were applied (i.e. ecological award criteria).

(R) Indicates item is reversed in the analysis



# Appendix B

# Full measures used in chapter 7







*Sustainable procurement behaviour (adapted and extended version of the scales by Griffin, Neal, and Parker, 2007)*

How often have you...

1. Presented a positive image of sustainable procurement to other people?
2. Defended sustainable procurement if others criticised it?
3. Talked about sustainable procurement in positive ways?
4. Made suggestions to improve the overall effectiveness of sustainable procurement?
5. Involved yourself in changes that are helping improve the overall effectiveness of sustainable procurement?
6. Come up with ways of increasing the efficiency of sustainable procurement?
7. Looked up additional information about sustainable procurement or sustainability?
8. Sought advice, based on your own initiative, from inside or outside the organisation about sustainable procurement or sustainability,
9. Made suggestions to make a specific procurement project more sustainable?
10. Challenged suppliers to, either in dialogue, develop a most sustainable solution?

*Affective commitment to change (Meyer et al., 2002)*

1. I believe in the value of the implementation of sustainable procurement.
2. The implementation of sustainable procurement is a good strategy for this organisation.
3. I think that management is making a mistake by introducing the implementation of sustainable procurement (R).
4. The implementation of sustainable procurement makes an important purpose.
5. Things would be better without the implementation of sustainable procurement (R).
6. The implementation of sustainable procurement is not necessary (R).

*Continuance commitment to change (Meyer et al., 2002)*

1. I have no choice but to go along with the implementation of sustainable procurement.
2. I feel pressure to go along with the implementation of sustainable procurement.
3. I have too much at stake to resist the implementation of sustainable procurement.
4. It would be too costly for me to resist the implementation of sustainable procurement.
5. It would be risky to speak out against the implementation of sustainable procurement.
6. Resisting the implementation of sustainable procurement is not a viable option for me.

*Normative commitment to change (Meyer et al., 2002)*

1. I feel a sense of duty to work towards the implementation of sustainable procurement.
2. I do not think it would be right of me to oppose the implementation of sustainable procurement.
3. I would not feel badly about opposing the implementation of sustainable procurement (R).
4. It would be irresponsible of me to resist the implementation of sustainable procurement.
5. I would feel guilty about opposing the implementation of sustainable procurement.
6. I do not feel any obligation to support the implementation of sustainable procurement (R).

*Transformational leadership (De Hoogh et al., 2004)*

My direct supervisor...

1. Encourages employees to think independently.
2. Is able to make others enthusiastic about his/her plans.
3. Has a vision and imago of the future.
4. Shows to be convinced of his/her ideals, opinions and values.
5. Is always looking for new opportunities for the organisation.
6. Gives employees the feeling that they are working on an important, collective mission/assignment.
7. Involves employees in decisions that are important for their work.
8. Stimulates employees to develop their talents as best as possible.
9. Talks to employees about what is important to them.
10. Stimulates employees to think about problems in new ways.
11. Delegates challenging responsibilities to employees.

*Fit with vision (Noble & Mokwa, 1999)*

1. The implementation of sustainable procurement is part of an overall strategic plan within my department.
2. The implementation of sustainable procurement is consistent with other things going on in my department.
3. I understand how the implementation of sustainable procurement fits within the strategic vision of my department.

Red tape (Pandey & Scott, 2002)

If red tape is defined as burdensome administrative rules and procedures that have negative effects on the organisation's effectiveness, how would you assess the level of red tape in your organisation?

Procedural justice (Colquitt, 2001)

The following items refer to the procedures used to arrive at the implementation of sustainable procurement. To what extent...

1. Have you been able to express your views and feelings during those procedures?
2. Have you had influence over the implementation of sustainable procurement arrived at by those procedures?
3. Have those procedures been applied consistently?
4. Have those procedures been free of bias?
5. Have those procedures been based on accurate information?
6. Have you been able to appeal the implementation of sustainable procurement arrived at by those procedures?
7. Have those procedures upheld ethical and moral standards?

Ecological sustainability attitude (Alcock, 2012)

1. It takes too much time and effort to do things that are environmentally friendly.
2. Scientists will find a solution to global warming without people having to make big changes to their lifestyle.
3. The environment is a low priority for me compared with a lot of other things in my life.
4. I am environmentally friendly in most things that I do (R).
5. Most people in the UK today need to change their way of life so that future generations can continue to enjoy a good quality of life and environment (R).
6. I personally need to change my way of life so that future generations can continue to enjoy a good quality of life and environment. (R)
7. How frequently does the need to reduce carbon emissions affect what you do, for example by choosing to drive less or to turn lights off when you can?

(R) Indicates item is reversed in the analysis



# Appendix C

# Correlation table chapter 7





Table 1. Correlation matrix

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Age	1												
2. Gender	.233**	1											
3. Management Position	-,047	-,089	1										
4. Education	.200**	-,037	.150*	1									
5. Sustainable Procurement Behaviour	-,081	.023	.075	.161**	1								
6. Affective Commitment to Change	-,126*	-,050	.080	.115	.484**	1							
7. Coercive Commitment to Change	-,169**	-,089	.065	.033	.314**	.616**	1						
8. Continuance Commitment to Change	.020	.089	.040	-,058	-,098	-,133*	.188**	1					
9. Procedural Justice	.016	-,077	.101	.182**	.389**	.330**	.132*	.147*	1				
10. Transformational Leadership	-,038	.024	.097	.040	.146*	.277**	.147*	-,041	.226**	1			
11. Fit with Vision	-,137*	-,052	.053	.120*	.370**	.459**	.347**	.014	.401**	.273**	1		
12. Red Tape	.138*	.083	-,105	-,008	-,095	-,221**	-,145*	.059	-,201**	-,206**	-,188**	1	
13. Ecological Sustainability Attitude	-,081	.018	.114	.127*	.239**	.416**	.352**	-,143*	.095	.205**	.166**	-,116	1

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).





## About the author





## ABOUT THE AUTHOR

Jolien Grandia (1984) studied Culture Studies at the Erasmus University of Rotterdam. She obtained her Master's degree in Cultural Economics and Entrepreneurship in 2006. After a pre-master she got her Master in Public Administration at the Erasmus University in 2009. During her Master Jolien joined the Department of Public Administration as a (part-time) junior lecturer.

After graduation and a very short detour to consultancy, she re-joined the Department of Public Administration as a fulltime junior lecturer. After one year she received a personal grant from the Ministry of the Interior and Kingdom Relations for half a PhD research in sustainable public procurement. Alongside her PhD research Jolien continued to work as a junior lecturer and taught several courses in the Public Administration bachelor, pre-master and master, and supervised students in writing their master theses. She also gained practical experience at the Ministry of the Interior and Kingdom Relations during her PhD research.

Jolien presented her work at several international conferences, such as the International Society for Public Management Research (IRSPM) Conference, The European Group of Public Administration (EGPA) Conference, The European Academy of Management (EURAM) Conference, and the International Public Procurement Conference (IPPC). Her work is published in several international peer-reviewed journals, as well as in an edited volume by Palgrave MacMillan.

As of August 2015, Jolien works as an assistant professor at the department of Public Administration at the Radboud University Nijmegen. At the Radboud University she is teaching several courses in the Public Administration Bachelor and Master and continuing her research into public procurement and change management.

