Sustainable Procurement in Practice: Explaining the Degree of Sustainable Procurement from an Organisational Perspective

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Sustainable procurement is often used to reduce negative environmental impacts related to production and consumption. Several studies in the sustainable procurement literature have identified potential drivers of and barriers to sustainable procurement, which are often organisational in nature. Using an organisational perspective, this paper examines if and how three organisational factors – top management support, expertise and commitment – influence the degree of sustainable procurement in procurement projects in the Dutch national government. The article concludes that both organizational factors (especially commitment) and the actions of individual actors are important.

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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, Dickinson & Chan, 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 (Hoejmose & 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; Bowen, Cousins, Lamming & Faruk, 2001; Erdmenger, 2003; 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 paper 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 3, the research design and methods are discussed; in section 4, the results of the case studies are presented; section 5 concludes; and section 6 discusses future research and limitations.

2. Theory

This section starts with a conceptualisation of the degree of sustainable procurement, followed by the introduction of the conceptual model and an in-depth discussion of three organisational factors that have been identified from the literature.

2.1. Degrees of Sustainable Procurement

The dependent variable in this research is the degree of sustainable procurement. The Dutch policy on sustainable procurement is based on the notion of making a certain degree of sustainability within procurement compulsory. However, project teams are asked to aim for more sustainability (non-compulsory), thus leaving room for projects to vary in the degree of sustainability. Studies on sustainable procurement in public organisations show great variation with regard to their extent and overall nature of involvement with sustainable procurement (Brammer & Walker, 2011; Meehan & Bryde, 2011, page 94). In addition, although people might verbally demonstrate that they endorse certain policies or schemes, this does not necessarily have to lead to a change in their behaviour or practice (Meehan & Bryde, 2011, page 95; Vining & Ebreo, 1990). This indicates that sustainable procurement is not a black-and-white issue. This paper focuses on what influences the degrees of sustainable procurement in procurement projects.

Sustainability is a complex and often-contested concept (Brammer & Walker, 2011). Defining and operationalising different degrees of sustainable procurement is therefore difficult. In this paper, the definition of Meehan and Bryde (2011) is used: "sustainable procurement is 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"[5]. Based on earlier empirical data and an interview with an expert, four degrees of sustainable procurement have been identified: 1. no application of the compulsory ecological criteria, 2. application of the compulsory ecological criteria, 3. ecological award criteria (not compulsory) and 4. adding value (e.g., generating electricity).

The procurement process can be considered as a special decision-making process, where project teams make decisions regarding the procurement that influences whether the full potential of sustainable procurement is used (Günther & Scheibe, 2006). Three factors are often mentioned in sustainable procurement literature as potential drivers of sustainable procurement practices within organisations: top management support, commitment and expertise (Brammer & Walker, 2011; Fernandez & Rainey, 2006; Günther & Scheibe, 2006; Hoejmose & Adrien-Kirby, 2012; Kotter, 1996). These factors are expected to influence the decisions made by the actors involved, and they determine whether the full potential of sustainable procurement is used. These three factors are discussed in the next paragraphs.

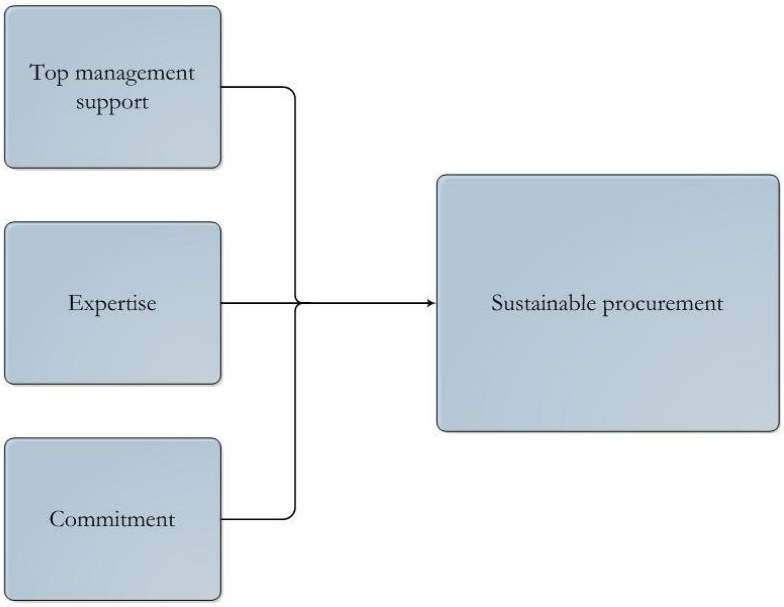
[5] Other terms that are often used to describe the same phenomenon or policy as sustainable procurement are: green public procurement (Michelsen & de Boer, 2009, European Commission), environmentally responsible public procurement (Li & Geiser, 2005), green purchasing and eco-procurement (Bolton, 2008). In this research, the term sustainable procurement is used, as it is the closest match to the Dutch name of the policy (*Duurzaam Inkopen*).

2.2. Conceptual Model

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 shows how these three factors are expected to influence the degree of sustainable procurement.

Fig. 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 (Herscovitch & Meyer, 2002; McLaughlin, 1990; Meyer & Herscovitch, 2001; Parish, Cadwallader & Busch, 2008; Preuss, 2009). A study of Brammer and Walker (2011, page 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 (Brammer & Walker, 2011). 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).

2.2.1. Top Management Support

The traditional change management literature has often pointed to the pivotal role top management support plays in the implementation of organizational 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 will indeed procure sustainably (Brammer & Walker, 2011). Ageron et al. came to a similar conclusion with regard to sustainable supply chain management; top management support is necessary and is often a key driver for successful sustainable supply chain management. The importance of top management support 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, page 236). 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).

2.2.2. Commitment

Commitment is considered a crucial factor in determining the degree of sustainable procurement in sustainable procurement literature (e.g.: Erdmenger, 2003; Michelsen & de Boer, 2009). Without the right mind-set, purchasers will make traditional choices. Commitment is therefore a large determinant of where an organisation will be placed on the continuum of innovator to laggard (Hoejmose & Adrien-Kirby, 2012; Preuss, 2009).

Although the sustainable procurement literature does identify the importance of commitment of the procurers and project teams to change, little attention is given to the characteristics of commitment. Literature from the field of organizational change offers more insights into commitment to changes. Commitment is defined as a force that binds a project team to a course of action deemed necessary for the application of sustainable procurement within their procurement project (Herscovitch & Meyer, 2002). Commitment also does not have to be present from the start; it can occur after mandated or coerced involvement at the individual or system level (McLaughlin, 1990, page 13). If public procurers are required to change their routines or behaviour, they could become committed in the process (McLaughlin, 1990).

Three different types of commitment to change can be distinguished: affective, continuance, and normative (Herscovitch & Meyer, 2002). Affective commitment is a desire to provide support for change based on a belief in its inherent benefits (Herscovitch & Meyer, 2002). An example would be a belief that sustainable procurement is beneficial for the environment. Continuance commitment is the recognition that there are costs associated with failure to provide support for the change (Herscovitch & Meyer, 2002). An example would be the recognition that not procuring sustainably could lead to

hefty fines (due to breaking environmental laws) or bad press. Normative commitment is a sense of obligation to provide support for change, for example, because in many other projects in the organisation project teams are procuring sustainably. Herscovitch and Meyer (2002) demonstrated that affective and normative commitment to a change resulted in higher levels of support than continuance commitment.

2.2.3. Expertise

Sustainable procurement is a complex, often-contested concept, and it requires that public procurers have specific skills and knowledge. A lack of expertise negatively affects the effort put into sustainable procurement. According to Snell (2006), 80% of (both public and private) purchasers even lack a clear understanding of the term sustainable (Michelsen & de Boer, 2009).

Lacking an understanding of what sustainable procurement is and can do makes it difficult to see its potential, such as the potential to realise economic benefits (Bowen et al., 2001). Although the organisation might request information about environmental issues in a call for tenders, this does not mean they will turn down a cheap offer in favour of a more environmentally friendly offer (Michelsen & de Boer, 2009). It also does not mean that the project team has enough expertise to draw a sensible conclusion from the received information. If the project teams lack expertise, they will have to interpret the information based on their old routines, which are no longer appropriate to the situation, causing them to make safe and traditional choices (Meehan & Bryde, 2011).

Close collaboration between project teams and environmental experts, training, national standards and templates for sustainable procurement are considered potential solutions for a lack of expertise (Michelsen & de Boer, 2009). Although Brammer and Walker (2011) did find that training increased employee engagement with sustainable procurement, they did not find that knowledge or awareness issues had an effect on the engagement.

3. Methods and Case Selection

In this paper, 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.

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 application 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 were 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.

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. Results

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 (application of the compulsory criteria), to a third degree (sustainable award criteria) to a fourth degree (adding value).

4.1. Vehicle case

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 to 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.

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 his advice was adopted by the project team. 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.

4.2. Real Estate case

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 "sustainable 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 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 procurement 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.

4.3. 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.

4.3.1. 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 sustainable procurement than the vehicle case. The real estate started at a second degree of sustainable procurement (application of the criteria); with the decision to included 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.

4.3.2. 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.

4.3.3. 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.

4.3.4. 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 a difference in the degree of sustainable procurement between the cases can be explained by the level of expertise of the project team. 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.

4.3.5. 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.

5. Conclusion and discussion

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 paper, 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., forthcoming; 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.

6. Future Research and Limitations

This study, as any study, has its limitations. However, these limitations can serve as stimuli for future research. We will discuss two important limitations. First, the results of this study and the outlined implications should be interpreted in light of the limited scope of the research. Studying sustainable procurement in two cases within the same organisation allowed us to control for many variables. Nevertheless, selecting two cases within one organisation has its limitations. For example, only the perceptions by project team members of the top management could vary across the cases, as the top management is similar for both cases. Therefore, more research in multiple public organisations and with more expected variance in the independent variables is necessary to fully understand the relationships amongst organisational factors, actors and the degree of sustainable procurement.

The second limitation is inherent to the case study method. A case study is performed to understand how and why certain things occur rather than to test relations between variables and generalise them and therefore has consequences for the external validity of this research. The results of this study are specific to the cases, but provide some interesting possibilities for future research.

First, existing studies of drivers of sustainable procurement acknowledge the importance of commitment, but do not make a distinction amongst different types of commitment. Our study has

shown that the type of commitment matters and influences the degree of sustainable procurement. This requires further study of both the relationship of the different types of commitment and the degree of sustainable procurement in more cases, as well as identifying determinants of affective commitment. However, understanding what determines affective commitment to sustainable procurement is needed to further stimulate sustainable procurement.

Second, our research shows strong indications of the importance of individual actors in determining the degree of sustainable procurement. Based on their actions, certain individuals could be identified as change agents and played a role in increasing the commitment and expertise of their co-workers. However, more insight into the roles of actors in determining the degree of sustainable procurement by acting as a change agent is needed.

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