Transforming Public Procurement: Identifying New Roles and Skills for Local Governments

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ABSTRACT

Public organisations can drive change and innovation in societal issues like climate change, global crises, and societal values in their procurement policies. The nature of public procurement is traditionally cost-driven. It is challenging for public organisations to move away from this cost-driven approach. In the Netherlands, local governments are trying to achieve socially responsible procurement by joining initiatives like Maatschappelijk Verantwoord Opdrachtgeven en Inkopen (MVOI). However, the results of this implementation have been disappointing, and environmental goals will not be met at this pace. Therefore, a change in the local government's procurement process is needed. This research aims to determine how it can introduce new roles into the procurement process of local governments in the Netherlands by answering the following research question: What roles and skills will need to be introduced in public procurement departments of local governments to align the existing procurement process with MVOI's vision of green and social sustainability?

1. INTRODUCTION

The urgency to address climate change, societal inequality, and the global crises like the COVID pandemic has increased (Renda et al., 2021, p. 3). Public procurement, the process of public organisations purchasing goods, services and works, can drive change and innovation across various sectors regarding the aforementioned societal issues (Grandia et al., 2023, p. 138). Public organisations in the Netherlands spend around 85 billion euros yearly (Ministerie van Infrastructuur en Waterstaat, 2021, p. 6). Given their significant spending power, public organisations in the Netherlands have substantial influence over the market, which they can leverage to address societal issues through their procurement processes. However, public procurement departments need to transform their procurement process to move forward in this direction.

Traditionally, public procurement has mainly been transactional and focused on cost-effective procurement (Grandia et al., 2023, p. 12). This form of cost-effective procurement has financial benefits in the short term but does not consider long-term effects like environmental or social costs. However, public procurement has evolved into a tactical role that uses public procurement to reach public goals (Tassabehji & Moorhouse, 2008, p. 64). Grandia et al. (2023, p. 14) suggest that public procurement is evolving to a stage where public organisations use their procurement to create external value with other public organisations and citizens. Yet, it is essential to note that not all public procurers have such a tactical role (Grandia et al., 2023, p. 10). In the Netherlands, public organisations collaborate with other public- and private organisations through an overarching *Maatschappelijk Verantwoord Opdrachtgeven en Inkopen* (MVOI) policy or socially responsible procurement. MVOI was introduced in 2022 and addresses six societal issues that its participants must consider in their procurement process. The themes are based on the Sustainable Development Goals (SDGs) set by the United Nations and range from sustainability and circularity to diversity and inclusion (Ministerie van Infrastructuur en Waterstaat, 2021, p. 7).

However, despite adopting MVOI in public procurement, the effects are hard to detect. For example, the Netherlands set a goal to reduce emissions by 55% by 2030 compared to 1990 levels. However, by 2022, emissions had only decreased by 30.5%, up from 26% in 2020 (CBS, 2023, p. 1). At this pace, the goal of a 55% reduction by 2030 will not be met. The disappointing results can be traced back to the fact that procurement policies in many EU member states are still mainly focused on being cost-effective (Grandia et al., 2023, p. 139). As mentioned, the public procurement process is developing into a stage where it creates external value for its taxpayers. Societal goals set by the MVOI benefit society more than just being cost-effective. However, the financial constraint of implementing sustainable procurement in local governments is a common struggle (Cheng et al., 2018, p. 776). The general view is that investing in sustainable solutions is more expensive (Grandia et al., 2023, p. 140). However, by implementing sustainable solutions like circularity, overall resource efficiency will be increased. Not only will society benefit

from this transformation, but contractors will receive financial benefits, too. In the Netherlands, public organisations are encouraged to pursue sustainable procurement, but it is not obligatory. Transforming public organisations from being cost-driven to sustainable procurement requires a change in the overall public organisation, the capabilities of the staff and the relationship between buyers and suppliers (Grandia et al., 2023, p. 140)

Furthermore, the rise of digital technologies is expected to alter public procurement on multiple levels. Technologies like Artificial Intelligence (AI) may take over specific tasks, and the use of data can automate a lot of processes like contract renewal (Grandia et al., 2023, p. 141). The need for transformation is evident. Therefore, this research aims to determine how public organisations in the Netherlands can transform their staff and align their procurement process with MVOI's vision.

1.1 Research Question

Most of the procurement in the Netherlands is done by decentralised organisations. With their procurement power, local governments are essential in supporting local companies to invest in sustainable innovations and creating a circular economy for their region (Renda et al., 2021, p. 23). Therefore, this research is focused on local governments in the Netherlands. The following research question has been formulated to find out what alterations must be made to align the procurement process of local governments with the vision of MVOI:

What roles and skills will need to be introduced in public procurement departments of local governments to align the existing procurement process with MVOI's vision of green and social sustainability?

The following sub-question has been formulated to determine which technologies can be implemented in public organisations' procurement processes to address the possible effects of digital technologies on public procurement processes.

What technologies can be implemented in the procurement process of local governments in the Netherlands?

Ten interviews will be conducted with procurement employees at local governments in the Netherlands to answer the research question and sub-question. The interviews aim to find out to what extent their procurement process already aligns with the vision of MVOI and where alterations are needed.

1.2 Academic and Practical Relevance

This study aims to determine what changes must be made within local governments to align their procurement processes with MVOI's vision. Existing literature mainly focuses on how public procurement develops into a stage where they collaborate to create external value (Telgen et al., 2007). However, it lacks concrete plans for developing public organisations into that stage. This paper's practical relevance is that the skills and roles concluded from the interviews can be integrated into the procurement departments of local governments in the Netherlands. This

may motivate other researchers to perform similar research on local governments of different countries and compare the results.

2. THEORETICAL BACKGROUND

Public procurement, which traditionally focuses on being cost-effective, is transforming into a strategic tool for achieving societal goals (Grandia et al., 2023, p. 15) This literature review will explore how public organisations evolved into this strategic tool and how digitalisation alters public procurement. Furthermore, it explores how the Netherlands is already trying to implement societal goals into its public procurement processes with initiatives like MVOI.

2.1 The Development of Public Procurement

2.1.1 The Role of Public Procurement

According to Uyarra and Flanagan (2010, p. 127), public procurement refers to public organisations like governments purchasing goods and services. The difference between public- and private procurement is the extra regulations for public procurement. They need to meet a certain standard regarding transparency, integrity and accountability (Grandia et al., 2023, p. 5). These regulations are necessary because the public sector has different stakeholders from private organisations. Public organisations aim to create value for their stakeholders rather than making profits for their investors and shareholders. This environment includes stakeholders like citizens, civil servants and taxpayers (Grandia et al., 2023, p. 5).

Over the years, public procurement moved from a function that only fulfilled the needs of an organisation to a tactical and strategic management function (Tassabehji & Moorhouse, 2008, p. 56). Grandia et al. (2023, p. 11) created a seven-step model of the seven stages of public procurement development; this model is based on Telgen et al. (2007) and is shown in Appendix A. This model showed how public procurement evolved from purely creating internal value to a tool that can create value for society. In the 6th step of this model, Grandia talks about how public procurement aims to create value for society by pursuing public goals such as creating opportunities for long-term unemployed citizens or fighting climate change. Furthermore, in the last step, public organisations collaborate with other public governments or private organisations to create external value (Grandia et al., 2023, pp. 13-14). The public procurement process that is used to create external value can be seen as a circular process. This paper follows the 3P model made by Schotanus (2022, p. 34). The 3P refers to the three phases of procurement: prepare, purchase, and perform. The model consists of seven steps within the procurement process and is shown in Appendix B.

2.1.2 The Public Procurement Process

The first two steps are in the preparation phase of the public procurement process. In the first step, the procurement department considers what needs need to be fulfilled by a product or work and whether it can be made or needs to be bought. This decision can depend on sustainable policies. For example, can the need be fulfilled by using the current product longer? Or can the new product be shared with other organisations (Grandia et al., 2023, p. 7)? The procurement strategy is applied to the case after deciding to buy a work or product. Specifications regarding the work are written down, and the criteria for the supplier selection are established. These requirements can vary from legal to sustainable goals (Grandia et al., 2023, p. 8).

Once the procurement requirements are established, the public procurement process moves to its second phase, purchasing. The third step is publishing a tender. A tender can be published publicly or privately if it is minimal. During the tender process, contractors can ask questions about the tender and submit their request for participation (Grandia et al., 2023, p. 8). The next step is to assess the participation requests. The requests can be evaluated using the criteria selected in the second step of the process. Once the contractors are assessed, the winning bidder is awarded the contract (Grandia et al., 2023, p. 9).

The last phase is the performing phase. Here, whether the procured goods or work met the expectations is established. The first step in the performing phase is implementing a contract. The signing of the agreement between the supplier and buyer starts the execution phase (Grandia et al., 2023, p. 9). The execution of a contract can differ per project. Public procurement can vary from the start of construction on a new building to the start of a new public transport operator. During this step, the quality of the work needs to be monitored to verify if it meets the requirements and demands set in the preparation phase (Grandia et al., 2023, p. 10). The final step in the public procurement process is to extend a product's or work's usage period. In addition, it is essential to monitor what happens to public works after they have been used (Grandia et al., 2023, p. 10).

2.1.3 Digitalisation of Public Procurement

The world is digitalising, and so is public procurement. Data systems, electronic invoice systems, and automated contract renewals are technologies already being implemented in the procurement process (Grandia et al., 2023, p. 141). Since the eighteenth century, technological advancements have been introduced to increase productivity and efficiency in the production process. The Industrial Revolution started with the introduction of the steam engine in Industry 1.0 and evolved to the latest revolution, Industry 4.0 (Yavari & Pilevari, 2020, p. 4). Industrial revolutions emerge intending to create a competitive advantage for companies because, according to Hayat et al. (2023, p. 40), *"The primary goal of every industrial revolution is to increase resource efficiency and productivity to increase organisational competitiveness"*. However, the technologies of Industry 4.0 can also benefit public organisations that do not strive for competitive advantage. Industry 4.0 resolves around nine technologies: 3D printing, digital twins, cyber-physical systems, internet-of-things, cloud computing, blockchain technology, big data analytics, machine learning and artificial intelligence (Delke et al., 2023, p. 2). While some technologies, like 3D printing, might be less beneficial for public organisations, others can help create greater resource efficiency and transparency. However, employees must be

trained in digital skills for an organisation-wide implementation of technologies like AI or the Digital Twin (Breque et al., 2021, pp. 18-19; Renda et al., 2021, p. 12).

2.2. Public Procurement in the Netherlands

In the Netherlands, decentralised governmental bodies like municipalities, provinces and regional water authorities hold a lot of autonomy (Ministry of Economic Affairs and Climate Policy, 2021, p. 7). In 2024, the Netherlands exist out of 342 municipalities, 12 provinces and 21 regional water authorities (Centraal Bureau voor de Statistiek, 2024; Havekes, 2024, p. 9). Together, governments in the Netherlands spend around 85 billion euros (Ministerie van Infrastructuur en Waterstaat, 2021, p. 6). The local governments of the Netherlands experience a lot of freedom and autonomy regarding policies and the selection of suppliers as long as they do not contradict the national law. This ensures the local decision-making process is as close as possible to the citizens (Ministry of Economic Affairs and Climate Policy, 2021, p. 7). If the value of a contract exceeds the threshold set by the European Commission that year, the tender needs to be procured through an open procedure. Any organisation from a member state can apply for the tender to ensure the best value for the best price rather than just the lowest price (Grandia, 2018, pp. 367-369).

Several public organisations and governmental bodies in the Netherlands are connected to the overarching policy MVOI to include public goals in their procurement process. The MVOI is a plan to use the power of procurement departments of public organisations to reach public goals (Ministerie van Infrastructuur en Waterstaat, 2021, p. 6). The MVOI descends from the MVI, which was introduced in 2016. The MVI addressed the urgency of using public organisations to reach societal goals. MVOI differs from MVI in that it includes the clients of public organisations in the procurement process and aims to let the parties work more closely together to achieve the set societal goals. Right now, 75 governmental bodies are affiliated with the MVOI. The plan for the period 2021-2025 discusses six themes: climate change, circularity, the environment and biodiversity, social return, diversity and inclusiveness, and supply-chain responsibility (Ministerie van Infrastructuur en Waterstaat, 2021, p. 7). The themes correlate with the Sustainable Development Goals (SDGs) the United Nations set back in 2016 and frameworks made by the European Commission, like the European Green Deal (EGD). The goal for the environment and biodiversity is to combat environmental pollution and protect biodiversity. For the climate theme, the MVOI aims to combat climate change and reduce its CO_2 emissions. The MVOI aims to set up a circular economy because circularity is still in its starting phase. The MVOI included supply-chain responsibility to avoid violating human rights or lousy working conditions down the value chain. The MVOI pursues an inclusive and diverse society and stimulates a business climate that assesses people on their abilities rather than their beliefs. With Social Return, the MVOI aims to offer fair opportunities to people who do not fit into the regular labour market (Ministerie van Infrastructuur en Waterstaat, 2021, p. 10). Currently, local governments are not obligated to join

initiatives like MVOI, but the central government encourages them to include societal goals in their procurement strategy.

3. METHODOLOGY
3.1 Research Method

This paper used a qualitative research method to gather the data needed to answer the research question. It interviewed employees at procurement departments of local governments in the Netherlands. The interviews aimed to apply the interviewees' knowledge and experience to identify how MVOI is implemented in the organisations' procurement process. The interviews are semi-structured, the most common technique used in qualitative research (DiCicco-Bloom & Crabtree, 2006, p. 315). One of the advantages of using the semi-structured approach is that it enables the possibility of follow-up questions and creates an interchangeable conversation between the participant and the interviewer (Galletta, 2013, p. 24). Four main themes with example questions were drawn up to maintain structure in the interview results. This is elaborated on in Chapter 3.3.

3.2 Sampling

3.2.1 Sampling Method

It was assumed that employees working in the procurement departments of local governments in the Netherlands could provide the best information to identify the areas that need to align with the vision of MVOI. Therefore, ten participants were gathered using convenience sampling, a non-random form of sampling in which participants are selected from the research population if they meet specific criteria (Dornyei, 2007, p. 129). Table 1 shows the criteria to ensure the participants had similar characteristics.

Table 1: Criteria for selecting interview participants

Criteria
1. Has to be employed at a local government in the Netherlands
2. Has to have at least three years of experience in the field of public procurement
3. No more than one participant per public organisation

The participants were found using the social media platform LinkedIn and were contacted with personal messages. When a positive reaction was returned, the possible participants received a follow-up e-mail containing more research information. Around 80 potential participants were approached through LinkedIn, of which 15 responded positively to participating in the research. After sending the e-mails, only ten participants could be interviewed in the proposed time frame.

3.2.2 Interview Participants

Table 2 displays the research sample resulting from the criteria. To ensure anonymity, the interview participants will be addressed as IP, followed by their participation number. All participants met the set criteria except for one. Although

IP2 has only two years of experience in public procurement, they have eleven years of experience in private procurement. Therefore, their interview was included in the results. All participants were interviewed separately, and there was no overlap between the governments.

Table 2: Interview participants

Nr.	Type of organisation	Function	Years of experience
IP1	Municipality	Strategic Procurement advisor	Nine years
IP2	Province	Strategic Procurement advisor	Two years
IP3	Municipality	Procurement Coördinator	Four years
IP4	Municipality	Strategic Procurement advisor	Seventeen years
IP5	Municipality	Strategic Procurement advisor	Three years
IP6	Municipality	Strategic Procurement advisor	Nine years
IP7	Province	Team Senior Procurement	Sixteen years
IP8	Municipality	Procurement Manager	Eleven years
IP9	Regional water board	Senior Procurement Advisor	Six years
IP10	Municipality	Procurement Advisor	Thirteen years

3.3 Data Collection

Semi-structured interviews allow the interviewer to ask follow-up questions, which can steer every interview differently (Galletta, 2013, p. 24). A guide was set up to ensure that all the interviews would gather data on the relevant topics, which is shown in Appendix C. Every interview covered four themes: environmental sustainability, social value creation, collaboration and technologies. These themes are further explained in the following chapter. The participants were asked about their procurement policy and how their procurement process is structured. Participants were asked about every theme to ensure coherence in the interview results. The number of follow-up questions per issue depended on the participant's knowledge. The importance of digital skills was a prominent subject in the existing theory (Breque et al., 2021, pp. 18-19; Renda et al., 2021, p. 12). Therefore, the interviews addressed the participants' use of technologies and their existing digital skills.

Ten separate interviews were conducted digitally via Microsoft Teams. Before the interviews started, the participants gave their permission to record and transcribe them. The interviews took between 30 and 45 minutes, and the order in which the themes were discussed differed per interview.

3.4 Data Reduction and Data Analysis

As mentioned above, all the interviews were recorded and transcribed. The transcripts were coded to translate the raw data into valuable answers to the sub-questions. *"Codes are comprised of categories of data and themes that the researcher is interested in"* (Cope, 2009, p. 3). A deductive approach was used to decide the themes for the coding, which are based on the themes in MVOI. The Environmental Sustainability theme includes the MVOI's first three themes: climate change, circularity, and the environment/biodiversity. Social Value Creation covers the themes of Social Return, diversity and inclusiveness, and supply-chain responsibility. MVOI addresses the importance of collaborating between private- and public organisations to attain social goals. Therefore, the Collaboration theme addresses how local governments collaborate right now. At last, the Technologies theme is formed to include the digitalisation of the procurement process. An inductive approach was used during the coding to find codes that connected to the themes. The themes and their connecting codes are shown in Figure 1.
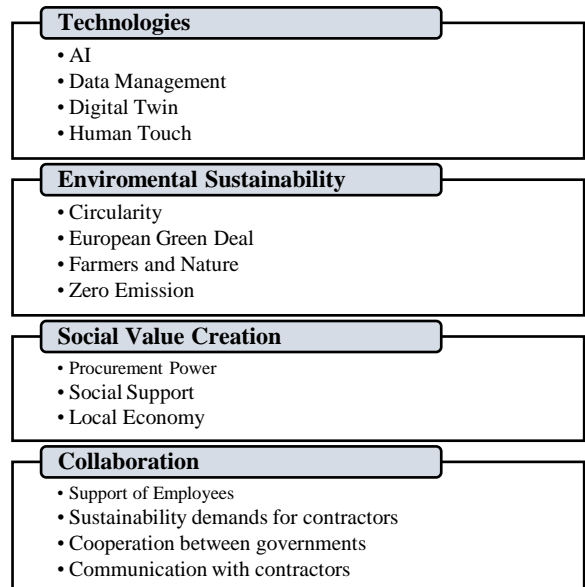
Technologies
- AI
- Data Management
- Digital Twin
- Human Touch

Enviromental Sustainability
- Circularity
- European Green Deal
- Farmers and Nature
- Zero Emission

Social Value Creation
- Procurement Power
- Social Support
- Local Economy

Collaboration
- Support of Employees
- Sustainability demands for contractors
- Cooperation between governments
- Communication with contractors

Figure 1: The Interviews' Themes and Codes

The codes represent points of interest within the four main themes in procurement departments of local governments in the Netherlands. Appendix D shows the list of codes and their distribution over the interviews.

4. RESULTS

The interviews aimed to determine what roles and skills will need to be implemented in the procurement departments of local governments in the Netherlands so that they can align their procurement process with the vision of MVOI. The interviews provided points of interest within the department that align with MVOI or require new roles and skills. The results are presented per theme and consist of positive and negative remarks. Some codes are combined into one sub-section as they are heavily related.

4.1 Environmental Sustainability

Environmental sustainability is integral to MVOI, which focuses on reducing environmental waste and creating a circular economy. The interviews showed that sustainability is already a hot topic in local governments.

4.1.1 Circularity

The most popular subject in local governments regarding sustainability is circularity (IP1, IP2, IP3, IP4, IP5, IP6, IP7, IP8, IP9, IP10). All the participants mentioned how they try to include circularity in their procurement process. Some governments are further along with this integration. Circularity in projects with asphalt is the most common implementation of circularity. When building roads, IP6 discounts the contractors that can build them with circular asphalt. This improves the chances of the company winning the tender and makes it financially attractive for companies to invest in sustainable solutions. Some governments have a digital overview of all the resources they use for their projects (IP6, IP8). These resource databanks let them know precisely how much material they have and what they can (re-)use for their upcoming projects.

IP5 addresses their concern about the circularity goals. The participant states how it is unclear what the goal of being 100% circular entails. "The highest level of circularity is that you never buy anything and only re-use the existing materials, but I think that level is not attainable". These concerns align with the lack of guidance for employees mentioned before.

4.1.2 European Green Deal

The local governments' sustainability goals are intertwined with the European Green Deal goals. All the participants mentioned that their procurement strategy is based on the European Green Deal (IP1, IP2, IP3, IP4, IP5, IP6, IP7, IP8, IP9, IP10). The governments try to implement sustainability goals as much as possible in their tender demands while not making it too expensive for the contractors. IP8 uses the Pareto principle to create as much impact as possible without making it too expensive. They select 20% of the projects with the most environmental impact and apply their sustainability goals to those projects. IP2 sees that many environmental tasks are being appointed to the municipalities and that they lose a lot of tasks regarding sustainability in the province.

Not all governments have sufficient support for the sustainability goals. IP10 sees many ideas within the organisation regarding the policy, but carrying out the objectives is hard for many employees. IP10 states that there is no obligation to include sustainable aspects in the tender, resulting in many employees not doing it.

4.1.3 Zero Emission

Governments often include zero-emission standards in their internal procurement and tenders (IP1, IP2, IP3, IP6, IP7, IP8, IP9, IP10). IP2 mentioned how important it is for the government to be a good example for society. One way they do this is by switching to an all-electric car fleet for their employees. They stated that by switching to electric cars, the government reduced the CO_2 footprint of its personnel by 91%. IP6 talked about how they often apply zero-emission standards for their building projects. In their case, the private contractors told the government they wanted to invest in zero-emission materials for their projects. IP6 uses a similar discount method for their contractors as the one mentioned before regarding circularity.

IP8 mentioned that zero-emission is not yet possible for all their projects. They state that electric tools are still revolutionary in specific markets, especially larger tools and machinery. This makes it harder for them to apply strict emission demands to all their projects.

4.1.4 Farmers and Nature

The last area that was covered regarding sustainability was Farmers and Nature. Some participants mentioned the importance of considering farmers and protected natural areas when publishing a tender (IP1, IP2, IP3, IP7, IP9). IP7 mentioned how their government struggles with the usage of natural areas. The national government decided to reduce farmers' emissions and create more natural and recreational areas. It is unclear to IP7's organisation how big the budget will be, and they lack expertise in attaining the national government's goals.

This expertise is present in IP9's government. They have to be very careful when mowing specific nature reserves. They do this by only using electric tools. However, this is way more expensive because the tools can't work an entire day without charging. Furthermore, they can't use regular tractors because they emit too much CO_2. IP9 states that setting demands for electric heavy machinery makes selecting the contractor less fair because not every company can afford the electric vehicle. Creating fair chances for all the parties is an essential value for the government, and that is why they can't apply these demands on all the projects.

4.2 Social Value Creation

The MVOI includes three themes regarding social well-being. With these themes, the MVOI aims for local governments to create value for their society by creating an inclusive environment where people look after one another and get treated equally. The interviews showed that governments were already trying to implement this idea and gave some examples.

4.2.1 Social Support and the Local Economy

Some participants mentioned the importance of creating value for the local society (IP1, IP3, IP4, IP5, IP6, IP7). They mentioned that they signed the MVOI, which addresses the importance of social return in public procurement. IP4 mentioned how the primary task of the local government is to create value for their citizens and businesses. They spend money from the taxpayers and must be transparent about how they spend it. IP3 mentioned how procurement departments of smaller governments work together to offer special transport to disabled children in their area. Social support is already embedded in the government's goals and vision. Furthermore, IP6 explained how their government implements social return within their tenders. With the social return, the government aims to provide jobs for people with difficulty finding jobs in the

job market. According to IP6, creating more social returns is one of the organisation's goals.

Another way local governments create value for their society is by working closely with local companies (IP1, IP3, IP4, IP9). By involving local companies in their projects, local governments create jobs for their society. IP9 stated that, when possible, the government tries to involve local companies. According to IP4, it is not always possible to include local companies because of the government's sustainability demands for their tenders. IP4 states that the involvement with local companies depends on the region of the government, as some regions are more technologically advanced than others. An area with few technologically advanced companies experiences more problems finding companies that can meet their demands.

4.2.2 The Procurement Power of Local Governments

Some interview participants believed that, because of their procurement power, the local governments could boost the innovation of sustainable solutions from private contractors (IP3, IP4, IP6, IP7). IP3 mentioned how local governments are the most prominent buyers of specific product groups. They used the example of lamp posts; if the governments want to buy LED lampposts solely, the suppliers must switch to them because there are few other buyers.

This procurement power becomes more extensive when local governments combine their tenders and offer more money to their contractors. IP7 explained how their telephone suppliers were more willing to meet the government's demands when they combined their tender with surrounding governments. However, combining tenders with other governments is not something that happens often.

4.3 Collaboration

4.3.1 Communication with Contractors
The first identified factor was the lack of communication between the governments and their contractors (IP1, IP3, IP4, IP5, IP7, IP8, IP9, IP10). The main concern was the lack of communication regarding sustainability. As mentioned before by IP6, sometimes the contractors are already willing to invest in sustainable solutions but are waiting for the government to demand it in their tender. The lack of communication between the parties results in less sustainable solutions being put into practice.

Furthermore, IP3 describes how it is challenging for governments to monitor the implementation of their demands by their contractors. IP3 states that it depends on the government's employees appointed to the project if the contractors are monitored on implementing their sustainability demands.

4.3.2 Sustainability Demands for Contractors
The interviews showed a lack of unity in the sustainability demands between local governments (IP1, IP3, IP4, IP5, IP6, IP9). It is hard for private companies to invest much money in sustainable solutions without unity in demands. IP5 describes how their neighbouring government has

completely different demands for building a roundabout in a circular way than they do. They think this makes it hard for the contractors to know what sustainable solutions they should invest in. Some local governments do create unity regarding specific demands. IP6 explained how they shared their methodology for zero-emission with over a hundred municipalities. However, this was the only participant who mentioned sharing sustainability policies.

Besides the lack of unity, IP9 mentions that they struggle to not demand too much from their contractors. For every project, they have to perform a market analysis to check if their demands are not too strict.

4.3.3 The Cooperation Between Governments
All the interview participants (IP1, IP2, IP3, IP4, IP5, IP6, IP7, IP8, IP9, IP10) agreed that government cooperation improves the resilience of their value chains. The main takeaway was that local governments do not work together often enough. IP2 and IP7 explained how their province worked with smaller municipalities but did not work with municipalities that did not come to them for help. IP5 mentioned how the lack of unity in the sustainability demands for contractors is a perfect example of the lack of cooperation. They state that they try to work together with other governments, but if their goals and ambitions are not aligned, it makes it more challenging. Sometimes, there is effective collaboration between the governments. IP3's example of cooperation between smaller municipalities to create the possibility of specialised transport methods for disabled children is a perfect example of the benefits of cooperating.

Some participants mentioned meeting with procurement employees from other governments but always at their initiative (IP1, IP3, IP7). They see the value of exchanging ideas and thoughts with different governments but admit that it does not happen often enough.

4.3.4 Support of Employees
The interviews showed that the participants needed more guidance on specific aspects of their job (IP1, IP3, IP4, IP5, IP8, IP9, IP10). They mentioned that the government's goals are often clear but need more guidance. IP5 talked about how its government wants to include circularity in its procurement demands but needs to state how it wants to do that. The fact that there needs to be a plan to achieve the goals set in the policy is often mentioned. IP9 says the goals are set by people higher up in the organisation but are always without further instructions. Guidance with new technologies is absent; IP3 states that regarding AI, the organisation gave no instructions on how to use it. IP3 thinks that the lack of central guidance is because the governments are so decentralised, and all the departments do their own specific thing.

4.4 Technologies

4.4.1 Artificial Intelligence and the Human Touch
The public procurement process is digitalising, and new technologies are getting attention from public organisations. The technology that got the most attention during the

interviews was Artificial Intelligence circularity (IP1, IP2, IP3, IP4, IP5, IP6, IP7, IP8, IP9, IP10). All the participants showed interest in the usage of AI, but there were some concerns. Currently, AI is only used by some to answer questions or sometimes to write parts of a tender. None of the participants had any policy in the organisation regarding the use of AI. Some participants had already received education or training regarding AI (IP1, IP4, IP7, IP8, IP9). The IT departments of their organisation organised these training sessions and showed the participants the possibilities of AI that went beyond writing a text or answering a question.

The main concern around AI is the safety of confidential data. IP9 mentioned how their IT department investigates what information can and cannot be shared with AI. IP7 explained how they had a training session in a secure environment in which they could try out the AI technology. IP6 thinks that the safety of the data is not the only problem. They believe that the quality of their data needs to be better in order to gather valuable outputs from the AI.

Furthermore, the interviews explored the possibilities of AI taking over specific tasks of the public procurement department employees. The participants mentioned that this would be difficult because of the need for a human view of the tenders (IP1, IP3, IP8, IP9, IP10). They mentioned that every project is different and that all the tenders need a human to interpret it correctly. IP8 mentioned how they cannot use AI to interpret tenders because they possess a lot of confidential data. The participants see AI as a possible supportive feature but think it will not take over their tasks.

4.4.2 Data Management
Multiple local governments (IP1, IP3, IP6, IP, IP8, IP9) faced the problem of low-quality data. They all had decentralised data systems for every section of the government. The absence of an overarching data system results in data being complex to find or data redundancy. IP7 explained how they have multiple systems that do not interact with each other often. They state that having reliable data has been an issue for provinces for a long time. IP9 addressed the importance of data management in monitoring the progress of their sustainability goals. They lack the data for setting a baseline regarding their emission to measure their progress.

According to the participants, creating an overarching data system and maintaining unity in data input is complex. This is because the governments are decentralised, with every section having a lot of autonomy. Some procurement departments made smaller databases for their use. IP6 and IP8 mentioned their database for all the resources they have used in construction projects. They use this database to re-use materials and implement more circularity in their projects.

4.4.3 Digital Twin
The resource database is a small step in creating an organisation's digital twin. Only a few participants (IP1, IP6, IP8) knew the term digital twin. Others mentioned the need for a system with similar characteristics (IP3, IP5, IP9, IP10). IP6 says their organisation is not yet ready for a

Digital Twin. Over the past two decades, they have gathered a lot of data on their usage of resources, and they want to put this to use by designing a Digital Twin for specific construction projects.

The other governments are not that far along yet. IP1 explained how they are trying to automate parts of the business process, but not to the extent of a Digital Twin. The other participants also mentioned the need for automatisation. IP8 talks about how they want to use technologies like the Digital Twin to monitor sustainable actions, but they first need to organise the dataflows.

5. DISCUSSION
5.1 Interpretation of the Data
In this section, the interview results will be interpreted, explained, and compared with the literature review findings. The data gathered from the interviews offers valuable insights into the current state of public procurement and how intensive MVOI is addressed in their procurement process. The results showed local governments' progress and challenges as they tried to align their procurement process with MVOI. It showed that local governments might not have developed yet to the state where it creates external value by collaborating, as Grandia et al. (2023, p. 11) suggests.

5.1.1 Environmental Sustainability
The interviews with procurement professionals in local Dutch governments reveal both the progress and challenges of integrating the environmental sustainability aspects of the MVOI into their procurement process.

Circularity is widely recognised and actively pursued across local governments, with initiatives such as offering discounts for using circular materials, particularly in asphalt projects. However, the lack of clear guidelines on being "100% circular" creates uncertainty, potentially hindering effective implementation. Furthermore, local governments are aligning their sustainability goals with the European Green Deal. Approaches like the Pareto principle are used to maximise environmental impact without making it too expensive. There are some disparities regarding the support and implementation of sustainable goals. Some participants mentioned needing broader organisational support to attain the set goals. Sometimes, the market is not ready to support sustainable demands. Especially in heavy machinery, it is difficult to implement zero-emission standards universally. Financial incentives like discounts help address these challenges but also raise concerns about fairness, as not all contractors can afford to meet these standards. This calls for continued innovation and market development to make zero-emission options more accessible. At last, there are concerns regarding the management of natural areas. The high costs and limited availability of electric tools make it challenging to maintain high environmental standards while keeping the tender fair for smaller contractors.

The findings suggest that while local governments pursue sustainable procurement, they face challenges related to unclear guidelines, lack of internal support, and balancing costs and environmental demands. To advance the MVOI goals, better internal guidance and procurement policies

considering environmental effects and competitive fairness are needed.

5.1.2 Social Value Creation

Social value creation is another critical aspect of the MVOI framework, with local governments actively working to enhance social well-being through their procurement processes. Local governments are already embedding social support within their procurement strategies by creating jobs for marginalised groups and collaborating closely with local businesses. Initiatives such as providing special transport for disabled children and ensuring social return in tenders underscore the commitment to supporting vulnerable populations. There are some challenges regarding the collaboration with local businesses. Local contractors can often not meet the sustainability demands set by the local governments, especially in less technologically advanced regions.

However, the interviews emphasised local governments' influence on local businesses with their procurement power. By collaborating, local governments in less technologically advanced regions can bundle their powers and encourage local contractors to invest in sustainable solutions. The success of this approach requires communication and coordination between governments and contractors. This phenomenon will be discussed in the following chapter.

Integrating social value creation into the procurement process of local governments in the Netherlands is progressing. Still, better communication with surrounding parties is necessary to realise its full procurement power.

5.1.3 Collaboration

The interviews' results revealed insights into how local governments in the Netherlands navigate collaboration challenges. The findings highlight areas of improvement, particularly in communication, alignment of sustainability demands, cooperation among governments, and employee support.

There is a lack of effective communication between local governments and their contractors, especially regarding sustainability. The interviews indicate that contractors are often willing to invest in sustainable solutions but lack clear signals from the government about these expectations. This gap in communication leads to missed opportunities for implementing more sustainable practices. Furthermore, the inconsistency in monitoring contractors' adherence to sustainability demands enhances this issue. The organisation's insights regarding the extent to which their demands are met depend on specific employees who often do not see the value of monitoring the environmental effects. Furthermore, there is a lack of unity in the demands for sustainability across local governments. The absence of standardised requirements makes it difficult for contractors to know where to invest in sustainable solutions, potentially leading to inefficiencies and reduced effectiveness in achieving broader sustainability goals. The interviews highlighted a case where neighbouring governments had different demands for constructing a roundabout, illustrating the confusion and difficulty this causes for contractors. Although there are some examples of successful sharing of

sustainability methodologies, such as the case with zero-emission standards, these instances are rare.

Besides the lack of effective communication, there is also a lack of frequent cooperation between governments. The interviews reveal that while cooperation between local governments can significantly enhance the resilience of procurement processes, it is not happening frequently enough. Participants generally agree on the benefits of collaboration, particularly in aligning sustainability goals and pooling resources to influence the market. However, the lack of regular and structured cooperation hinders the potential to maximise these benefits. Instances of effective collaboration, such as the joint efforts of smaller municipalities to provide specialised transport for disabled children, demonstrate the positive impact such cooperation can have.

Finally, the participants addressed the need for more guidance regarding using new technologies and achieving sustainability goals. This lack of guidance is particularly problematic in a decentralised environment, where departments often operate independently. The findings indicate that to improve job satisfaction and effectiveness, there needs to be a stronger emphasis on providing clear, actionable guidance and support to employees, particularly in areas like circularity and new technologies such as AI. The results indicate a need for better communication, coordination and cooperation between local governments and their contractors. This, combined with better support for employees, will help organisations realise the full potential of public procurement as a driver of attaining societal goals.

5.1.4 Technologies

The interviews explored several technological themes, including Artificial Intelligence (AI), data management challenges, and the potential for Digital Twin technology. AI emerged as a prominent topic among the participants, reflecting the growing interest in leveraging this technology to streamline public procurement. However, the adoption of AI is still in its early stages. While some local governments have begun experimenting with AI for tasks like answering questions or drafting parts of tenders, no consistent policy or framework is guiding its use. The lack of established protocols raises concerns, particularly around the security of confidential data. Some governments have taken steps to mitigate these risks by conducting AI training in secure environments. Still, the broader uncertainty around data protection remains a significant barrier to widespread AI adoption. Additionally, the interviews showed the participants' thoughts about AI's ability to replace the human element in procurement. Participants emphasised that the complexity and variability of tenders require human judgment, which AI cannot yet replicate. While AI may serve as a valuable tool for supporting procurement professionals, there is a consensus that it will not fully replace human oversight in the foreseeable future.

The interviews showed some challenges local governments cope with regarding data management. Many local governments struggle with decentralised data systems. The lack of a central data system leads to data redundancy and difficulty tracking progress toward sustainability goals. For

example, some governments lack the necessary baseline data to measure emissions reductions effectively, holding back their ability to monitor progress on environmental goals. Some governments have taken steps to improve their data management practices. Initiatives like creating resource databanks for construction projects demonstrate a move toward better data utilisation; these resource banks are mainly used in projects regarding circular building. The concept of the Digital Twin was unknown to most participants. Those who were aware of Digital Twin technology saw it as a potential tool for improving the management of construction projects and monitoring sustainability efforts. However, implementing such advanced technology is still challenging, with most local governments not ready to fully embrace it.

Participants acknowledged that before adopting technologies like Digital Twin, they must address foundational issues, such as improving data flows and automating existing business processes. The few governments exploring Digital Twin technology are focused on using it to optimise resource management and enhance sustainability monitoring. Moving forward, local governments must develop clear policies and strategies to guide the adoption of these technologies.

5.2 Implications

5.2.1 Theoretical Implications

This research provides valuable insights into the evolving role of public procurement, particularly by addressing the integration of MVOI into local governments' procurement policy. The study emphasises how local governments struggle with shifting away from traditional cost-driven procurement. This aligns with the literature, where Grandia et al. (2023, p. 139) mentioned how many public organisations in EU member states are still mainly focused on cost-effectiveness.

Furthermore, the interviews showed how they don't cooperate and communicate with other parties frequently. This suggests that local governments in the Netherlands have not evolved to the last step of the 7 step model created by Grandia et al. (2023, p. 11). The interviews showed that employees are willing to implement MVOI in their procurement process but lack coordination. To counter these challenges, this study identified new roles and skills that can be introduced to local governments to better align their procurement process with MVOI.

5.2.2 Practical Implications

The following roles have been created to give the study's results a practical implication. It is essential to mention that the participants addressed the decentralised structure of local governments. Creating roles for a specific procurement department is tough because the decentralised departments do most of the procurement. Therefore, it is decided to develop more centrally located roles that can give guidance and coordination organisation-wide. Furthermore, the size of the government greatly influenced the capacities of its workforce. Smaller governments might benefit from cooperation with bigger organisations that can afford to hire

these roles and are willing to share their knowledge with them.

Data Manager: The Data Manager maintains and monitors qualitative and reliable data. If absent, the data manager will set up an organisation-wide data management system, which can be the cornerstone for future technology implementation. The Data Manager will manage the data flows throughout the organisation and ensure the employees know how to add, collect, and share data across the divisions.

Technology Integration Specialist: The Technology Integration Specialist guides the employees regarding using new technologies like AI. Because governments use confidential data, employees must be guided about using AI. The Technology Integration Specialist will set guidelines for these technologies. On top of that, they will look into the possibilities of implementing technologies from Industry 4.0. Technologies like Digital Twin, cyber security and Big Data can be an excellent addition to the organisation's digital landscape.

As mentioned in one of the interviews, employees should see the value of these systems before working with them to implement new technologies smoothly. The Technology Integration Specialist will ensure that the employees are informed and introduced to the latest programs before they are implemented. This introduction comes with the necessary training for using these systems.

Environmental Strategy Manager: The Environmental Strategy Manager is responsible for communication regarding the sustainability goals with contractors and surrounding governments. They coordinate with surrounding governments about their sustainability demands for clients. By creating unity in these demands, it will become easier for clients to make investments in sustainable solutions because they can use the investments for tenders from more than one party. The Environmental Strategy Manager will also communicate with the government's contractors about improving the projects' sustainability. As was shown in the results, sometimes the market is further ahead than the government now thinks. Lastly, the Environmental Strategy Manager sets yearly sustainability goals and decides how they will be measured. By doing this, the goals set by the MVOI will become more manageable, and the progress will be shown more clearly.

The interviews showed that the procurement function is scattered across the government and that most departments have a lot of autonomy regarding procurement. That is why the following skill is needed for every employee. **Digital Skills** were already suggested by Breque et al. (2021). The interviews supported the need for this skill set. For public procurement employees, the most important digital skill to learn is how to use data safely, mainly focusing on dealing with the information they share and retrieve from technologies like AI. It was tough to determine which technologies from Industry 4.0 could be implemented into public organisations due to their current lack of data management. Furthermore, most participants did not have

experience with Industry 4.0. This limitation will be addressed in the following chapter.

Employees must also see the value of implementing sustainable solutions in their tenders and be encouraged to execute them. The same is essential regarding collaboration with other organisations. These are not skills that employees can learn, but educating them on these matters is important to enhance the effects of the introduced roles. These training and education sessions can be executed by the new roles or organised by higher-ups in the organisation.

5.3 Limitations of the Research

Despite the insights gained from interviews with employees of the procurement departments of decentralised Dutch governments, this study also contains some limitations that may have influenced its results. First of all, one of the limitations is the small sample size. Although the initial aim of ten participants was met, the sample size is relatively small compared to the more than 350 decentralised governments in the Netherlands. Due to the small sample size, the results might not represent the entire population. In addition, the small sample size also limits the generalisability of the results for the whole population of decentralised governments in the Netherlands.

Another limitation of the study is that all the participants had a similar role in their organisation, advising the purchasers and dealing with the purchasing policy. The lack of variety in the roles could mean that certain aspects of the other roles within the procurement department are not covered. Employees who publish the tenders might encounter completely different problems while doing their tasks. Therefore, for future research, it is recommended that the roles of the participants be included in more variety.

Lastly, the term Industry 4.0 was an unknown concept for most participants. Their lack of knowledge about Industry 4.0 technologies might have prevented the interviews from discussing the possibilities of these technologies in depth.

5.4 Recommendations

This section will discuss recommendations for future research on implementing societal goals in public procurement processes. First, future research could delve deeper into what technologies suit public organisations and what benefits they will bring. This will give organisations insight into what technologies they should use to solve specific problems.

Secondly, future research could focus on similar governments in different countries in the European Union. Do they face the same problems, or have they implemented policies like MVOI into their procurement process? Future research could also compare two countries, one that is centrally organised and one that is more decentralised. The difference in bureaucracy can result in other implementations of technologies or changes in how sustainability goals are set.

5.5 Conclusion

This paper aimed to identify which roles and skills are needed to align the procurement process of local governments in the Netherlands with MVOI. Following the aim of the research, the following research question was formed:

What roles and skills will need to be introduced in public procurement departments of local governments to align the existing procurement process with MVOI's vision of green and social sustainability?

Ten interviews with procurement employees of local governments in the Netherlands identified what areas aligned with the MVOI's vision and what areas needed more attention. Based on these identifications, three new roles were created. Furthermore, the need to educate the workforce with digital skills was addressed. The research provided new insights on how these governments can better align their procurement process with MVOI. Future research can study the differences between countries or provide more guidance regarding which specific technologies of Industry 4.0 can be helpful for local governments.

6. ACKNOWLEDGEMENTS

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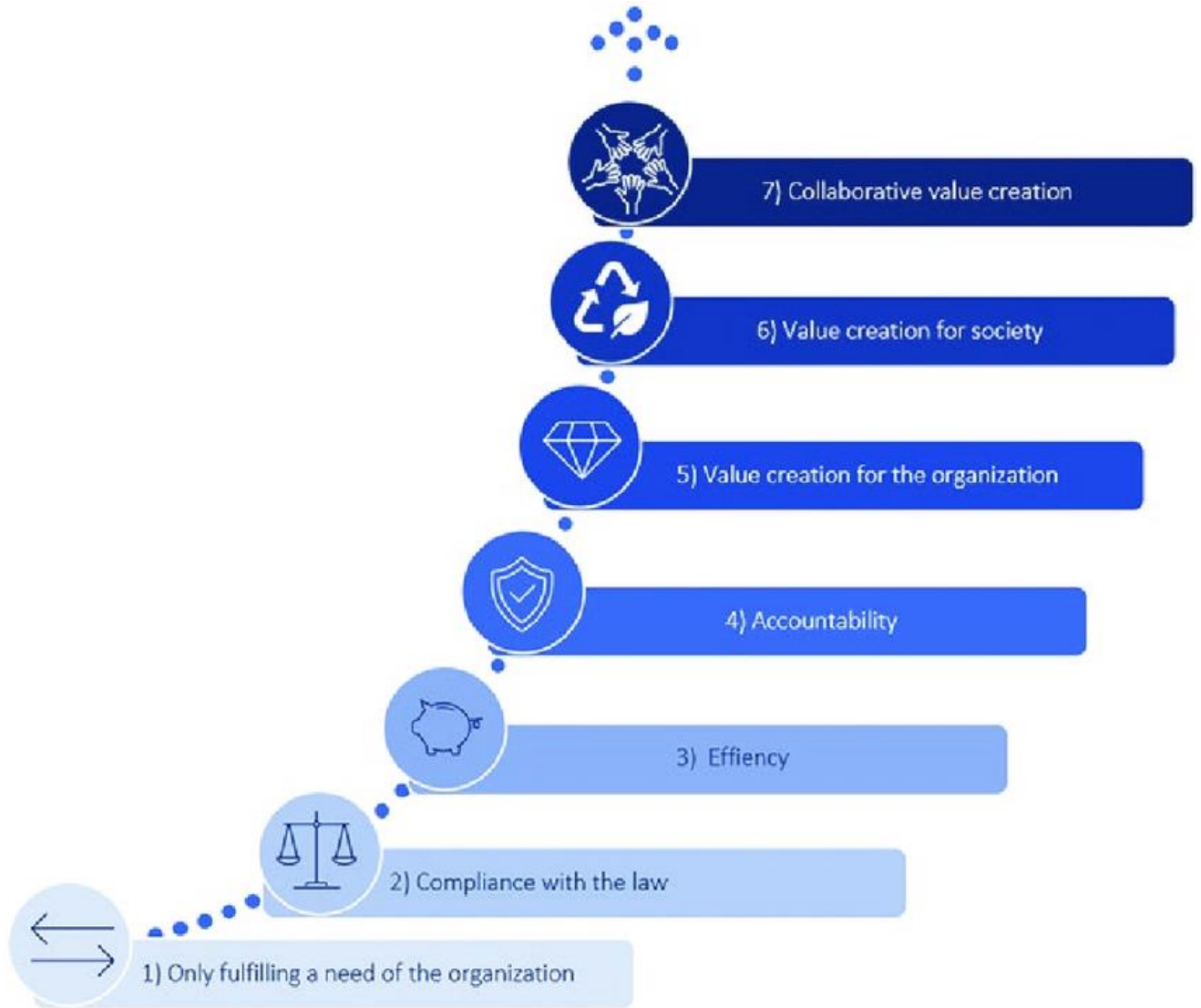
APPENDIX A

Figure 2: The Seven Steps Model of Public Procurement (Grandia et al., 2023)
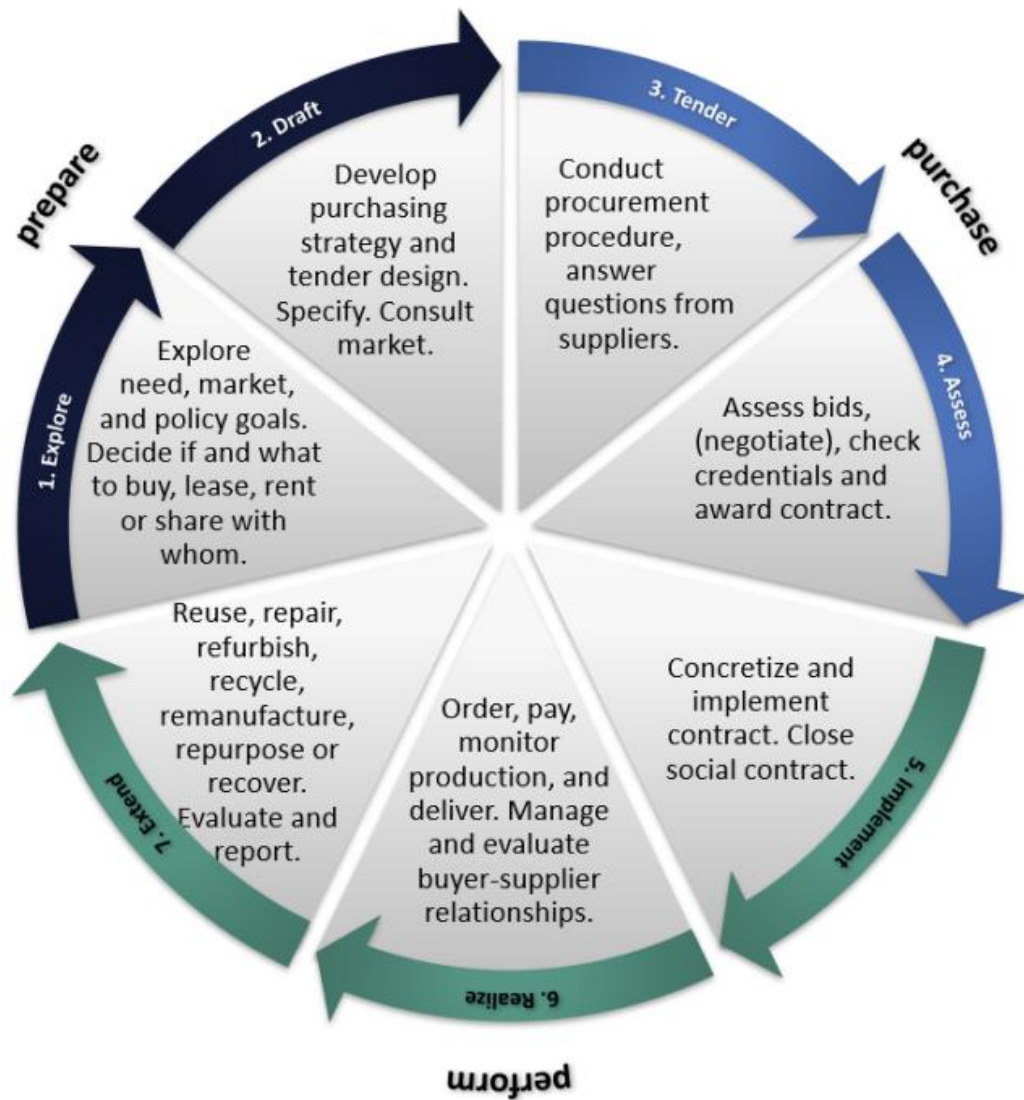
APPENDIX B

Figure 3: The 3P Model and the 7 Steps of the Public Procurement Process

APPENDIX C

Semi-Structured Interview Guide

Phase 1: Introduction (5 minutes)

Start the interview by introducing yourself and asking the participant for a short introduction.

After the introduction, ask about their role in the organisation and their tasks.

Phase 2-3-4-5: Environmental Sustainability

In this phase, you will discuss how the participant handles sustainability within the organisation. What goals have they set, and how are they trying to achieve them?

Example (follow-up) Questions:

How is sustainability implemented in your purchasing policy?

> Who sets these goals?

> Are some goals more important than others?

How do you select your contractors based on these sustainability goals?

> Are there specific certificates that every contractor needs to have

> Do you think your sustainability demands align with those of the private market?

Phase 2-3-4-5: Creating Societal Value

In this phase, the interview will focus on how they view their role as a public organisation that creates value for their society.

Example (follow-up) Questions:

How do you create value for the local society?

> Do you implement the social return idea in your tenders?

> Do you work a lot with local companies?

>> Are these companies always picked over other companies?

> What other ways do you have to create value for the local society?

Phase 2-3-4-5: Technologies

Example (follow-up) Questions:

What technologies are used in the organisation?

> Do you get any guidance for using these technologies?

> Do you use AI in your organisation?

>> Did you receive training or education regarding AI or other technologies?

How is the data management in the organisation

> Do you have a central data system?

> Do you use data to write tenders?

Do you have data that gives you insight into the progress of, for example, sustainability goals?

Phase 2-3-4-5: Collaboration

In this part, we will talk about how governments collaborate with surrounding organisations.

Example (follow-up) Questions:

Do you work together a lot with your contractors, apart from just the projects?

In what areas do you collaborate the most?

What are some bottlenecks you have experienced while collaborating with your contractors?

Do you work together with surrounding governments?

What type of governments are these? (e.g. province and municipalities or municipalities with each other)

On what matters do you collaborate most often?

Phase 6: Closing

Once all the themes have been discussed, ask if the participants feel they need to share something more about the subjects we discussed.

If not, thank the participant for their participation.

APPENDIX D

Table 3: Results from Coding the Transcripts

	IP1	IP2	IP3	IP4	IP5	IP6	IP7	IP8	IP9	IP10	Totals
○ **Artificial Intelligence Gr=24**	4	3	2	2	4	2	2	2	1	2	24
○ **Circularity Gr=24**	1	1	4	2	4	3	4	2	1	2	24
○ **Communication with contractors Gr=29**	1	0	5	2	0	7	3	5	5	1	29
○ **Cooperation between governments Gr=22**	1	3	3	2	1	3	6	1	1	1	22
○ **Data Management Gr=21**	5	0	3	0	0	4	2	6	1	0	21
○ **Digital Twin Gr=16**	3	0	2	0	2	3	0	3	2	1	16
○ **European Green Deal Gr=26**	3	2	4	2	4	1	1	3	2	4	26
○ **Farmers and Nature Gr=7**	1	1	1	0	0	0	1	0	3	0	7
○ **Human touch Gr=6**	1	0	1	0	0	0	0	1	2	1	6
○ **Social Support Gr=9**	3	0	4	2	1	1	1	0	1	0	13
○ **Support of Employees Gr=14**	1	0	3	1	1	0	0	1	1	6	14
○ **Sustainability demands for contractors Gr=11**	1	0	4	3	1	1	0	0	1	0	11
○ **The procurement power of the governments Gr=9**	0	0	4	2	0	2	1	0	0	0	9
○ **Zero Emission Gr=15**	1	1	2	0	0	6	1	1	2	1	15
Totals	26	11	42	18	18	33	22	25	23	19	237