

SRH HOCHSCHULE NORDRHEIN-WESTFALEN

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Master thesis

Topic : Embedding Sustainable Procurement Practices in Public Organizations

Mentor:

Prof. Dr. Haridass Pälme

Name	Nikhil Udupa Lagadamane Srinivas
Street	Diesel Strasse
City	Krefeld
Immatriculation number	11016027
Semester	5
E-Mail	nikhiludupa055@gmail.com

Abstract

Public organizations are increasingly reevaluating procurement practices to align with sustainability goals. This thesis investigates the integration of sustainable procurement within public entities, through a comparative analysis of two case studies: "YORBuild Sustainable Construction" in the UK and "USA-Sustainable Waste Transport." YORBuild, in the UK, employs a collaborative framework among local government bodies in Yorkshire and Humber. With a £300 million annual procurement budget over four years, YORBuild focuses on sustainable development across a diverse region. The case study highlights innovative procurement, inclusivity, and community engagement, serving as a model for sustainable construction, emphasizing integration of SMEs and customized collaboration.

In the "USA-Sustainable Waste Transport" case study, the Metropolitan Regional Government of Portland, Oregon, addresses waste management while prioritizing environmental stewardship, local growth, and community involvement. The case demonstrates impact through diverse transportation methods, community engagement, and transparent partner selection. Regional governance alignment and actionable sustainability measures benefit the community.

The comparative analysis yields insights into environmentally responsible procurement in public institutions. Transparency, community engagement, and tailored sustainability strategies emerge as crucial factors. Both cases underscore combination of environmental, social, and economic considerations, offering global government entities valuable lessons in positive impact, inclusivity, and responsible decision-making.

This thesis contributes to eco-friendly sourcing in governmental entities and advances environmentally conscious purchasing strategies in the public sector. It fosters a more sustainable future by addressing regional and community-specific needs.

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1 Introduction

1.1 Background

By birth, our reliance on an extensive array of goods and services offered by governmental institutions becomes undeniable. These services span across critical sectors such as healthcare, education, infrastructure, medications, and higher education. These essential aspects of modern life require the acquisition of a diverse range of finished products or raw materials. Pause for a moment to reflect: have you ever contemplated the origins of the materials used in constructing the roads we traverse, or pondered over the sources of the school desks we occupy, the computers that grace the libraries of higher learning institutions, or even the medications that bring relief during times of illness? The scope of these fundamental components appears limitless. Intrinsic to a comprehensive understanding of these goods is the consideration of their origins and the potential reverberations they have on individuals, societies, and the natural environment. While it's customary to take these necessities for granted, they provoke a significant query: as conscientious consumers, should we not be cognizant of the origins of these commodities, alongside their environmental and societal ramifications? Just as we prioritize Fairtrade certifications for the coffee we purchase, should not the entities be procuring these goods and services shoulder the mantle of ensuring their adherence to social and environmental norms? "After all, when governments partake in these acquisitions, they undertake this responsibility on behalf of their entire citizenry, thus necessitating the adherence to a particular benchmark". (McCrudden, 2009, p. 13). Aligned with the tenets of the Sustainable Development motto, a multitude of institutions underscore the inherent significance of rendering public procurement (PP) a bastion of environmental and social sustainability. Governments are called upon to harness the immense potential of PP as a pivotal tool in driving forward the overarching goals of Eco-friendly growth (Witjes Lozano, 2016; Lundberg Marklund, 2018). The act of not only encouraging but actively supporting businesses through PP stands as a conduit for the initiation of substantial ecological and social transformations, thereby laying the groundwork for sustainable development (McCrudden, 2009). The assertion made by Vogel (2005) resounds profoundly: to catalyse enduring enhancements in the social and environmental performance of corporations, there is an exigent need for a metamorphosis in the role governments play. Serving as a beacon, governments are called to not merely evolve their functions but also to ensure an inherent alignment of their supply chains with sustainable practices, thereby inherently encouraging businesses to integrate sustainability as an intrinsic facet of their operations (McCrudden, 2009). Amidst this dynamic landscape, the European

Union (EU) emerges as a significant actor, expending a staggering two trillion euros annually towards public procurement, a sum that constitutes a formidable 16 percent of its GDP. This expenditure delineates a remarkable opportunity for the public sector to wield its influence and catalyze the underpinning ideals of sustainable development throughout the expanse of its supply chain (OECD, 2009). Originally cantered around the environmental aspects, Ecologically sound procurement sought to secure goods and services that boasted reduced ecological impacts, all the while upholding their functional efficacy (European Commission, 2016; Lundberg Marklund, 2018). Subsequently, the nomenclature of "green public procurement" (GPP) underwent an evolution, transmuting towards comprehensive ideas for Ecologically mindful public procurement in response to the European Commission's call for collective entities to integrate social considerations within the realm of those acquirement decisions (McCrudden, 2009).

1.2 Problem and Motives

Much research have been done upon sustainability in context of private organization so as to make better quality and lower risk (Zhu Sarkis, 2004). However, the government organizations didn't get much attention (Brammer Walker, 2011). Even though there are worldwide policies to support sustainable development (Council of the European Union, 2006; Commission of the European Communities, 2003), little study has been done on feasible procurement in terms of public organization (Brammer Walker, 2011). In addition, many research on SPP is intended to concentrate on environmental components of sustainability, leaving the social component understudied (Walker Brammer, 2009). Given that, this gap is concerning "suppliers have, to date, made less progress on social responsibility in government contracts than on green issues" (Amann et al., 2014, p.36). SPP is essential, and this cannot be overstated. In the past, government vendors have frequently failed to conduct their business sustainably, which has led to several instances of human rights breaches. The Swedish surgical tool sector is one example where unsustainable procedures have been used. As seen in the image below, NGOs and the media have frequently exposed corporate wrongdoings such as giving salary below monthly expenditure, creating hazard working environment, and even using children. (The Dynamics of Child Labour in Pakistan, 2023)

Internationally, energy costs are on the rise, and there is a growing emphasis on standardized testing of products and stricter oversight in producing of stocks, facilities, and jobs. Additionally, the demand for environmentally friendly practices is constantly increasing. In Ethiopia, budget constraints and adherence to the Public Procurement Directive, 2010, are

exerting greater force on procurement operations. Sustainable public procurement is now acknowledged as a means of ensuring government security and a catalyst for broader economic, social, and environmental transformations.

Two research studies were conducted to investigate sustainable public procurement practices in different countries. Abdul-Aziz (2013) aimed to identify the vastness of application, drivers, and challenges of sustainable procurement in Ghana's public sector. The findings revealed various challenges, including the lack of budget for support, absence of key performance indicators (KPIs) for monitoring development, Increased cost of sustainable goods, limited availability of sustainable goods locally, less help of big managements, opposing of suppliers, inadequate government rules, less inner experts on sustainable cases, conflicting objectives, and insufficient knowledge on supplier associated social responsibility exercises.

Islam and Siwar (2013) performed qualified research between Australia and Malaysia to assess their current sustainable procurement practices, chances, and hurdles. Datas were gathered by inspection using standardized opinion poll in those two countries. The research found that both countries exhibited lower standards of sustainable procurement practices in the public organizations, but both emphasis, nature of these practices varied significantly. Australian organizations prioritized safety aspects, while Malaysia emphasized diversity. Malaysian public organizations were generally forward in many aspects of sustainable procurement procedures. Financial pressures were reported as the major notable hurdle to sustainable procurement application, while sectors productivity and translucency offered favourable chances for adopting sustainable practices. The research gave valuable insights into the implementation of rules by law in both countries.

1.3 Objective of the Study

The primary goal of the research is, to examine and advocate for environmentally and socially responsible practices within the public procurement process. To achieve the goal, the study will undertake a comprehensive examination of two significant case studies: "YORBuild Sustainable Construction" in England, UK, and "Sustainable Waste Transport" in the USA. These case studies will serve as essential focal points for the study's primary goals. Firstly, the research target is to evaluate the considerable potential of sustainable procurement practices in reduction of negative environmental impacts. The YORBuild case study will focus on the construction industry, assessing the impact of sustainable practices on carbon emissions, resource conservation, and pollution mitigation. Additionally, the study will analyze how sustainable

waste transport methods in the USA contribute to lowering greenhouse gas emissions, reducing landfill usage, and overall environmental footprints. Secondly, the study will scrutinize the social responsibilities entailed in these initiatives. For the YORBuild case study, the examination will delve into the promotion of fair labor practices, support for local businesses, and the fostering of diversity within the construction sector. The social implications of sustainable waste transport will be explored, including its role in job creation, community engagement, and the equitable distribution of benefits. Thirdly, the study will investigate the long-term cost efficiencies associated with these sustainable practices. Through the YORBuild case study, the focus will be on energy-efficient designs, waste reduction strategies, and comprehensive lifecycle cost analysis. In the context of the USA's Sustainable Waste Transport case study, the study will analyze the economic advantages, encompassing reduced waste disposal expenses, lower fuel consumption, and potential cost savings for municipalities. Moreover, the study will delve into how these initiatives drive innovation and market development. The YORBuild case study will showcase how it has stimulated innovation in the UK construction market, creating demand for eco-friendly materials, sustainable building techniques, and innovative project designs. In comparison, the analysis of sustainable waste transport practices in the USA will highlight their role in fostering the development of new technologies, alternative fuels, and innovative logistical solutions within the waste management industry. Additionally, the study aims to identify opportunities for policy improvement. It will identify key policy changes and regulatory adjustments that have supported the YORBuild Sustainable Construction program, highlighting best practices for integrating sustainability goals into procurement policies. Likewise, it will contrast the policy landscape for sustainable waste transport in the USA, offering recommendations for enhancements to encourage broader adoption of sustainable transportation practices. The study will emphasize knowledge dissemination as a crucial component. It aims to share its findings on both case studies with relevant stakeholders, including government agencies, procurement professionals, construction companies, waste management entities, and the general public. It will highlight specific lessons learned from the YORBuild and USA-Sustainable Waste Transport cases, providing actionable guidance for effective implementation of sustainable procurement practices across diverse contexts. Ultimately, the study strives for a long-term impact. It aims to contribute to the ongoing development of sustainable procurement practices by showcasing the positive changes achieved through the YORBuild and USA-Sustainable Waste Transport initiatives. It underscores the potential of these case studies to inspire similar sustainable procurement efforts in other regions, leading to reduced environmental impact, improved social outcomes, and fostering a culture of responsible consumption and production within public procurement processes.

Research Questions

1. RQ1 : What are the important drivers and challenges influencing the adoption of sustainable public procurement practices across different industries and regions?
2. RQ2: What are the long-term cost benefits of sustainable public procurement, including reduced operational expenses, improved resource efficiency, and enhanced financial performance?
3. RQ3: In what ways can the experiences and outcomes of YORBuild and Metro's sustainable waste transport project collectively contribute to a more comprehensive grasping of the longtime impacts and advantages of sustainable public procurement, and how can these insights drive positive change in public procurement practices, reduce environmental harm, and foster social equity on a broader scale?
4. RQ4: How can the successful integration of sustainability principles from the YORBuild framework, encompassing environmental, social, and economic matters, be adapted and applied to the procurement of sustainable waste transport services in other regions, aligning with the goals set forth by the Metro Regional Government of Portland's sustainability objectives?

1.4 Overview of the paper

In this paper, we delve into the complex landscape of sustainable procurement practices. Our exploration begins with an informative backdrop (Section 1.1), followed by the articulation of the problems and the overarching purpose of our study (Section 1.2). Clear objectives are set to guide our investigation (Section 1.3). Additionally, an insightful overview of the paper's structure is provided, serving as a map for readers as they navigate the upcoming sections (Section 1.4).

The core of our work lies within the comprehensive literature review on sustainable procurement (Section 2). We dissect the facets of sustainable public procurement, trace its evolution (Section 2.2), examine its economic, environmental, and social dimensions (Sections 2.2.1 - 2.2.3), and explore the concept of the triple bottom line (Section 2.2.4). We also present arguments both for and against sustainable procurement practices (Section 2.2.5) while shedding light on its potential benefits in developing countries (Section 2.2.6) and the indirect benefits that ripple through (Section 2.2.7). Drivers and challenges of sustainable procurement are dissected (Sections 2.2.8 - 2.2.9), laying the foundation for the subsequent analyses.

Our methodological approach is outlined in Section 3, encompassing the description of the study area (Section 3.1), research approach (Section 3.2), research design (Section 3.3), sources of data and data collection (Section 3.4), and the parameters for ensuring research quality (Section 3.5). The rationale behind the selection of specific case studies is elucidated, underscoring their relevance to the broader topic of sustainable procurement (Section 3.6).

The paper's structure then shifts to the presentation and analysis of the chosen case studies (Section 4). We assess the significance of these case studies, starting with their relevance (Section 4.1), followed by a detailed examination of YORBuild Sustainable Construction in the UK (Section 4.2) and Sustainable Waste Transport in the USA (Section 4.3). We analyze the results and impacts of both case studies (Section 4.4) and draw a meaningful comparison between them (Section 4.5). And then we discuss requirements and benefits of SPP based on case studies(4.6.1) with relevance of findings(4.6.2) so that we can have insights for real life application of SPP(4.6.3).

In the final section, we summarize our findings (Section 5.1), then we list all the findings we did in (Section 5.2), also we talk about our limitation to our research (Section 5.3) and finally we give our conclusion and future recommendations (5.4)

2 Literature review

This segment presents a comprehensive outline of theoretical foundation that encompasses sustainable procurement within the extent of the research. It emphasizes, importance of sustainable procurement from the view of public entities. Additionally, it examines the rise of sustainable procurement and its association with sustainable development. Various key topics related to sustainable procurement are also introduced and explained. The research project commenced with an extensive and critical literature review centred on the concept of sustainable public procurement. This review focused on exploring the potential benefits, drivers, and constraints related to sustainable procurement. To gain a comprehensive understanding of the topic, a wide range of sources such as books, journals, and publications were thoroughly examined.

2.1 Public Procurement

Development and research have long been primarily focused on economic activities, with the aim of increasing human prosperity and wellbeing. International deal has grown by a factor of 3.5 times since 1950 due to developing economies around the world, yet this proceeding occur with significant environmental, social, and financial implications (Dittrich Bringezu, 2010). There are many concerns of unfairness as a result of the enormous growth in global commerce and consumption, which resulted in a shift of economic and environmental costs by purchasers in buying nations to manufacturers in selling countries (United Nations, 1992; Dittrich Bringezu, 2010).

The accomplishment of sustainability through PP is one important strategy to prevent these injustices, including environmental and social deterioration (United Nations, 2002). One of a government's primary economic transactions is PP, which is described as "the acquisition of goods and services by government or public sector organizations." (Uyarra Flanagan, 2010) Public sectors obtain materials by contracts (Walker Brammer, 2012; Kiiver Kodym, 2014; Uyarra and Flanagan, 2010). PP encompasses items, projects acquired so that they can offer it to the general public recreation, social services, healthcare, and education (Preuss, 2007).

According to estimates, PP accounts for government procurement methods for both products and services, and ranges from 8 to 25 percent of the GDP of OECD countries also about 16 percent of the GDP of the EU (OECD, 2009; Walker Brammer, 2012). These figures are relatively close to Swedish state spending on products, employments, and utilities in 2015,

which was roughly 71 billion Euros, or 16.3 percent of Sweden's overall GDP (European Commission, 2016).

PP was not previously properly explored and just lately came to the forefront in academic research, despite its significance and effects (Witjes Lozano, 2016; Brammer Walker, 2011). Because of its capabilities, connections, and purchasing power, prior study has separated several kinds of PP, but everyone accepted that PP might be utilized as an instrument to enforce desired changes in a society (Brammer Walker, 2011; Kaye Nijaki Worrel, 2012; Witjes Lozano, 2016; Parikka-Alhola, 2008).

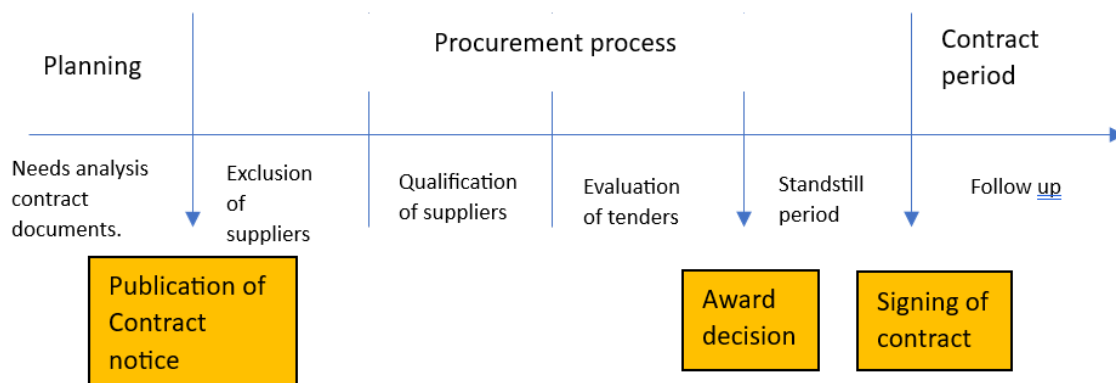


Figure 1: Procurement process

Source: Self made figure by analysis

The Swedish National Agency for Public purchase states that there are three steps to the purchase process. As seen in (Figure 1), the process begins with the identification of a need during the planning stage and is then goes through a protracted procurement procedure where specifications are created, inspection of sellers are done, and assess of deals are done, and choosing takes place. The last thing is the contract time, during that, relationship continues while the contract is in effect.

Witjes and Lozano (2016) assert that while collaboration between suppliers and procurers rises during the planning and procurement process, it decreases once a provider has been chosen (Award decision). The National Agency of Sweden for Public Procurement contains subsequent actions in the final stage only; not any kinds of interaction can be seen at that time.

2.2 The Progression of Sustainable Public Procurement

The origin of sustainable public procurement can be traced back to an initiative that emerged from the Rio Summit during the 1990s. This initiative, initially named Green Procurement, which was established as guiding structure for the promotion sustainable growth. Its main aim which was to curtail the bad environmental impacts linked with procurement activities across the supply chain (Walker and Brammer, 2009).

Following global Summit on Sustainable Development in 2002, practice of environmentally conscious procurement gained renewed attention, leading to the integration of environmental objectives into official procurement regulations (Preuss, 2007; Murray, 2001; Walker and Brammer, 2009). This approach was encapsulated in the concept of Environmental favour Purchasing, which explained procurement as selecting products with reduced negative effects on people's robustness and nature compared to other participants who have same purpose (EPA, 2000).

These advancement in Green Procurement was recognized by entities like the United Nations (UN) and the European Union (EU) as a potent instrument for driving positive change (Bratt et al., 2013). Consequently, the procurement policies of numerous EU member states underwent transformation. By 2003, the EU government presented a law under the Combined Product Policy aimed at diminishing the impact of public procurement of goods and services on nature (Commission of the European Communities, 2003). The effort was further strengthened in the year 2006 when EU Council encouraged member states to expand their support for national Green Public Procurement (GPP) efforts and enhance related programs. These strategies broadened the scope of GPP beyond environmental considerations to encompass various social and socioeconomic aspects (Council of the European Union, 2006; Bratt et al., 2013).

These marked the inception of Sustainable Public Procurement (SPP), a paradigm in which purchasing decisions factor in triple bottom line of sustainability—social, economic, and environmental dimensions. Consequently, a redefined meaning of sustainable procurement was given by DEFRA (2006) as follows:

“Sustainable Procurement is the process whereby organizations meet their needs for goods, services, works and utilities in a way that achieves value for money on a whole life basis in terms of generating benefits not only to the organization, but also to society and the economy, whilst minimizing damage to the environment” (DEFRA, 2006, p.10).

This growth marked an important shift away from the emphasis on environmental issues and toward a more comprehensive approach to sustainable development. Instead, according to the

European Union council (2006), it includes consideration of social, economic, and environmental factors in procurement decisions.

Main distinction between Sustainable Public Procurement (SPP) and traditional Public Procurement (PP) includes the proximity of the procurer and the supplier. This relationship can be visualized as a prolonged collaborative process, where cooperation initiates during planning phase rather than at the decision to grant a contract stage. This shift in roles demands an extended dialogue between the supplier and the procurer concerning the explanation of practical, general, and socio-economic statements (Witjes Lozano, 2016; Borgatti, 2003).

Furthermore, SPP introduces a switch in concentration during negotiations. Rather than concentrating solely on the price per unit, the emphasis is redirected towards achieving the best value for money. This adjustment allows for the seamless integration of diverse sustainability parameters into the tendering process (Kiiver Kodym, 2014; Uyarra et al., 2014; Witjes Lozano, 2016).

2.2.1 Economic features of sustainability

Goals for profitable growth are becoming more and more dependent on procurement (Murray, 2001). Particularly, academics have talked more and more on how procurement may be used to spur innovation and economic growth (Murray, 2001). "Local purchasing policies can be strategically formulated to address issues of fairness by directing economic opportunities towards specific groups based on geographic factors, historical economic disadvantages, or significant economic needs. This approach aligns with the promotion of economic inclusivity as a significant external objective within procurement practices. McCrudden (2004) highlights the ancient beginnings of equality and social justice aspects of procurement."

SPP can be, also a significant market stimulator for revolution and to promote ecologically and social responsible trades, especially in industries like construction, health care, public transportation, and information technology where public purchasers make up a sizable portion of the market. Entrance to the public procurement markets is facilitated and also competition wars may expand through Supporting minor and med-sized enterprises (SMEs) advancement and diverse suppliers (Berry, 2011).

2.2.2 Environmental features of sustainability

Ecological procurement (Erdmenger, 2003), nature favorable purchasing, natural public procurement, green public buying (Marron, 2003), and sustainable procurement, encompassing both environmental and social considerations (McCrudden, 2004), are various terms denoting the addition of environmental thoughts into the procedure of public procurement. The best way to integrate environmental consideration into the procurement procedure is to steer clear of irrational purchases by assessing the true demand for the product and looking for alternate solutions. When the former is unattainable, the aim is to acquire a more environmentally friendly alternative that delivers equivalent or superior quality and performance compared to the Regular options (Erdmenger, 2003).

Due to the constant deterioration of our nature, More releasing of greenhouse gases, and the effects of climate change, policymakers now concentrate on PP as a strategy to promote the growth of more products and services that respect the environment. The use of PP as a policy tool has been considered by a number of authors (Marron, 2003; McCrudden, 2004). Governments try to do this, according to Marron (2003), by implementing a variety of policies that raise the proportion of recycled materials in their purchases, improve the effectiveness of their energy-consuming machinery, or encourage for the utilization atleast one or more of these: natural goods, alternative fuels , environmentally friendly electricity, and less harmful manufacturing methods. Marron (2003) provides several instances of strategies applicable in such scenarios, encompassing improved financial planning methodologies (such as incorporating life-cycle costing), prioritizing prices for environmentally conscious products (such as assigning a projected value to an environmental aspect, like one metric ton of carbon dioxide emissions), and allocating portions for environmentally friendly products (such as reserving 10 percent of electricity from renewable sources).

More precisely, environmental preferable purchasing entails acquiring goods or services that exhibit diminished or minimized effects on both human well-being and the environment in comparison to rivalling products or services fulfilling the same function. Integrating environmental factors into the procurement procedure can contribute to resolving concerns like soil degradation, alterations in climate patterns, decline in biodiversity, and the availability of clean water resources. The sustainability effects connected to various commodities varies significantly. Technical requirements, selection criteria, contract award procedures, and contract performance conditions can all take environmental concerns into account. Primary environmental considerations that could be considered throughout the duration of product or service existence, as outlined by Marron (2003), encompass the following: energy consumption

and the nature of energy sources utilized; water consumption and its implications for water purity; resource consumption, involving the utilization of finite resources; quantity and nature of waste generated; possibilities for end-of-life handling (such as recyclability, resource retrieval); influence on natural ecosystems; extent of hazardous and toxic substances; high sounds, contaminants, and discharges.

2.2.3 Social features of sustainability

According to Boomsma (2008), sustainable public procurement which can be utilized as a strategy to combat Socioeconomic disadvantage and marginalization. This must be able to give buyers in the public sector considerable control over what is produced and how it is produced. In this manner, Sustainable Public Procurement (SPP) can help us for increase adherence with domestic labor and social policies, worldwide agreements, and goals for social advancement. The fundamental ILO treaties, which forbid discrimination, protect the right to organize unions, and outlaw children working and forced labor, serve as an illustration of this.

SPP also helps in bettering living circumstances and lowering poverty in emerging nations by encouraging voluntary social norms. SPP can promote social inclusion and fairness as well. For instance, South Africa has established a system to support the growth of those who have traditionally been disadvantaged due to unjust discrimination based on race, gender, or handicap. A law passed in Brazil in 2007 created standards meant to boost the involvement of small firms in the procurement process. As outlined by Berry (2011), the United Nations (2008), and UNEP (2012), the social aspects typically encompass acknowledging equity and inclusivity, upholding essential Labor norms, ensuring equitable working conditions, promoting job growth and skill enhancement, and nurturing local communities.

2.2.4 The triple bottom line

According to Boomsma (2008), the phrase "triple bottom line" coins the 3 sustainability pillars that are economic, environmental, and social. The expression was coined to involve corporate executives and enhance understanding that collaborative endeavors not only contribute to economic worth but also possess the capacity to generate environmental and societal value, and notably, give rise to environmental and societal expenses, was based on concept of "The Bottom Line" (TBL). These were formerly thought of as "externalities" that weren't taken into consideration when measuring an organization's performance. These have typically been supported financially by governments and practically by communities. As per the Triple Bot-

tom Line (TBL) approach, businesses that have important negative effects on the environment and society should be held accountable for sharing (or at the very least acknowledging) the expenses that come with them.

Furthermore, Boomsma (2008) illustrated that the term "People" pertains to a company's ethical and beneficial business practices directed towards its workforce, as well as the community and geographical area it operates within. The term "Planet" signifies environmentally responsible approaches. "Profit" denotes the economic value generated by the enterprise once all input expenses, encompassing invested capital, have been deducted. In comparison to conventional profit definitions in accounting, this interpretation diverges. The "profit" component in a sustainability context should be interpreted as concrete economic benefits obtained by society.. The triple bottom line, also recognized as 3BL, eventually became People, Profit, Planet, acknowledging necessity for corporations to evaluate their success not just in terms of effectively advancing or safeguarding the participation of primary shareholders through financial viability. But, also in terms of effectively advancing or safeguarding the participation of secondary shareholders concerning social and environmental sustainability. TBL involves expanding a company's traditional reporting structure to encompass social and environmental accomplishments alongside financial performance.

2.2.5 Objections to SPP

According to IISD (2012), several stakeholders are concerned that SPP would be implemented in low-income countries. Domestic enterprises may be squeezed out because they can achieve the environmental and social standards specified in Eco-friendly bids.

This reasoning might be valid if regulations and initiatives related to Sustainable Public Procurement (SPP) do not facilitate sufficient market engagement and involvement. A certain amount of time is necessary for initiating SPP policies/programs and formulating preliminary tender designs. Suppliers need to be informed beforehand about the forthcoming implementation of SPP policies and the likelihood of their inclusion in future tenders. It is crucial to uphold environmental and social standards. In order to give businesses enough time lead time is crucial to update and pursue new opportunities and find cost-effective solutions to fulfil these increased expectations.

This interest is being addressed by IISD (2012) and the global policy discussion. The UNCITRAL model law on public procurement (2011) encompasses clauses concerning environmental and social factors, while the World Trade Organization's Government 21 Purchase

deal similarly mandates that purchase choices be rooted in environmental and social sustainability. SPP also serves as a pivotal aspect of the Green Economy discourse, particularly for less affluent nations. However, in order to ensure that SPP policies effectively label these new problems, shareholders must revisit prior lessons learned and adapt them to SPP policies in light of the dynamics of the world-wide capital and trade markets, conflicts over natural resources, fight for foreign direct investment, and the ongoing need for new ideas, skill development, and enhancement to maintain competitiveness.

Numerous global organizations hold the viewpoint that Sustainable Public Procurement (SPP) may impact in a big manner on motivating businesses to adopt environmentally responsible approaches through the implementation of distinct environmental management strategies. As outlined by the OECD (2003), the environmental effectiveness of public procurement indicates that Green Public Procurement (GPP) could potentially create an environment in which companies can develop innovative technologies and advancements in production (whether radical or incremental) in the realm of environmental services. But also, little study has been done to assess the degree to which the adoption of GPP will substantially influence managerial decisions to put money in environmental administration methodologies.

According to Seitz and Wells (2006), although adopting an environmentally friendly lifestyle is an appealing concept, there exist several potential disadvantages to embracing green practices:

Initial Investment: One significant drawback of transitioning to green practices is the substantial upfront cost. For instance, making eco-friendly home improvements like installing new insulation or a more efficient roof to retain heat within the house requires a significant financial investment. Similarly, opting for a hybrid vehicle with improved fuel efficiency is a step towards green choices, but hybrid cars often come with a higher price tag compared to non-hybrid counterparts. The initial expenses of going green pose a significant barrier (Seitz and Wells, 2006).

Limited Savings: In many cases, the goal of adopting sustainable strategies, as building a power-efficient house or getting a hybrid car, is to lessen environmental effects while getting long-term financial gains. Because eco-friendly buildings and automobiles consume less energy, the starting capital are expected to be recovered over time through reduced energy expenses. However, the issue arises when the actual savings derived from going green are often less than anticipated, failing to immediately offset the initial expenditure and making the transition economically feasible (Seitz and Wells, 2006).

Competitive Disadvantage: While embracing environmentally friendly practices might be a noble goal in the business sector to gain public support and goodwill, this can potentially make a company at a competitive disadvantage, unless these green changes are economically viable. For example, if a company chooses to adhere to stringent self-imposed pollution regulations that require costly technology setup and additional staffing, while other adopts more lenient standards, the latter may profit from lower manufacturing costs. Even if national legislation were implemented to force companies to embrace green practices, this might still give international corporations a competitive edge. (Seitz and Wells, 2006).

Marginal Impact: Despite the focus of green initiatives on reducing environmental harm, the individual impact of each person's green efforts is often minimal. The underlying concept is that if everyone embraced green practices, the collective effect would be substantial and noticeable. However, not everyone can be persuaded to adopt green habits, and many argue that these efforts have limited meaningful impact beyond economic considerations. Green choices often remain a personal decision for individuals, which may not always translate into tangible monetary or environmental gains (Seitz and Wells, 2006).

Time Constraints: one more noteworthy downside of adopting green practices is the element of time. Time-related challenges manifest in two ways within green living. First, going green lifestyle can be time-intensive, especially for individuals with busy schedules. Fully committing to green living might involve tasks like making homemade beauty products, which can be more time-consuming compared to walking directly into the shop and buying it. Additionally, it can take time to prepare dinners and buy for organic or environmentally friendly items, particularly in areas lacking convenient resources like farmer's markets or natural food stores. Time is also a concern in terms of the payback period for specific green investments. While choices like gardening or transitioning to energy-efficient light bulbs have positive effects, they often require a significant time investment. For instance, Compact fluorescent light bulbs (CFLs) can be an environmentally friendly and cost-effective alternative to incandescent bulbs, however the savings from decreased energy usage can take many months to make up for the greater initial expenditure. (Seitz and Wells, 2006).

2.2.6 Potential advantages of SPP for emerging nations

Sustainable Public Procurement's (SPP) potential advantages are numerous and frequently connected. Green technologies, for instance, yield economic advantages through job creation and wealth accumulation, social benefits in terms of employment opportunities and skill development, and environmental benefits like enhanced resource efficiency. However, the under-

standing of SPP's impacts is limited, and there exist actual or perceived barriers to SPP acceptance, particularly in less developed nations. This discourse examines the potential benefits of SPP, along with the challenges of its implementation, with a specific focus on developing countries, as elucidated through impact studies (Roos, 2012).

Environmental Perspective: According to Roos (2012), governmental entities, due to their substantial role as customers, have the capacity to positively influence environmental concerns through SPP. It can aid in tackling environmental problems like soil erosion, biodiversity loss, climate change, and guaranteeing a way for clean water. Governments can help mitigate the risk of detrimental environmental impacts on individual health, safety, or well-being arising from public procurement within a nation or ecosystem. Governments can also achieve cost savings through measures such as resource conservation and reduction of waste. Factors such as material sourcing, production methods, use of reusable resources, power and water utilization, durability, recyclability, waste management, packaging, and transportation need to be considered during the procurement process.

Table 1: Potential Environmental Benefits

Environmental Aspect	Description
Contributing to Addressing Environmental Challenges	Reacting to climate change, soil deterioration, decline in biodiversity, and the availability of clean water entails actions such as minimizing consumption, reutilizing, recycling, and ultimately decreasing the volume of waste directed to landfills.
Playing a Role in Attaining Mandatory Objectives	Diminishing greenhouse gas emissions, enhancing energy efficiency, and meeting domestic environmental objectives.
The Encompassing Surroundings	Supplying cleaning products that are free from toxins, enhancing the healthiness of educational settings, or employing low-emission buses to enhance the quality of local air.

Source: Sustainable Procurement, CIPS course book, 2010

SPP can thus align with national environmental strategies, ensure compliance with ratified worldwide environmental agreements, and helps to global targets like harmful gas emissions

lessening goal of the Kyoto Protocol. At local level, considerable potential exists for environmental benefits. For example, using less polluting cleaning products can enhance better educational environments, even while using low-emission public transit can enhance native air quality (European Commission, 2004; United Nations, 2008).

Social Perspective: Similar to this, SPP can help with compliance with local, national, and world wide social and labor laws. SPP also reinforces adherence to social development goals, including fundamental ILO Conventions that combat involuntary and children employment, encourage the creation of unions and make discrimination a non-issue. SPP can help to raise living standards and lessen poverty in developing countries by supporting voluntary social standards like Fair Trade. Furthermore, SPP also helps in advance social equity and inclusiveness. For instance, South Africa has implemented a rule to support the advancement of historically marginalized individuals due to unfair treatment based on disability, gender, or race. Social components include embracing diversity, respecting fundamental labor quality, providing fair working conditions, encouraging employment and skill development, and supporting local communities. (European Commission, 2004; United Nations, 2008; IISD, 2007; UNEP 2012d).

Table 2: Potential Social Benefits

Potential Social Benefit	Description
Adherence to Social and Labor Regulations Has Been Enhanced	Respect for the fundamental ILO Conventions, which prohibit discrimination in employment and occupation, guarantee the freedom of organization and cumulative bargaining, and prohibit involuntary and children employment.
Enhanced Living state	Advocating for voluntary social criteria like Fair Trade, which contribute to alleviating poverty.
Enhancements in Social Justice Have Been Achieved	Incorporation of individuals with disabilities or enhanced gender and ethnic equality.

Source: Sustainable Procurement, CIPS course book, 2010

Economic Perspective: A product's initial ownership cost is only one component of its overall cost.. Determining the product's lowest whole-life cost ensures enduring value and substantial financial savings. A comprehensive approach calculates the expenditure profile across a product's anticipated life cycle, including purchase, usage, maintenance, and disposal expenses. In

some cases, sustainable manufacturing processes lead to reduced upfront costs of sustainable products. Moreover, this approach can contribute to diminishing societal costs related to pollution and global warming by incorporating externalities. SPP can also stimulate innovation and serve as a catalyst for ecologically and social markets, particularly where public buyers significantly influence the market. Industries like construction, healthcare, public transportation, and information technology could experience substantial transformation. For instance, SPP can drive markets towards cleaner technologies, thereby fostering economic growth and enhancing supplier competitiveness on national and global scales. SPP can also serve as a model for others, encouraging the procurement of accessible information technology for individuals with disabilities and promoting market access for small and medium-sized businesses (Berry, 2011; European Commission, 2010; United Nations, 2008).

Table 3: Potential Economic Benefits

Potential Economic Benefit	Description
Financial Savings	Whole-life cost (WLC) reductions encompass the overall expenses for purchase, usage, maintenance, and disposal. It's important to acknowledge that initial price for nature helping materials could be less owing to greenly manufacturing techniques. This approach can lead to decreased societal costs associated with pollution, global warming, and other factors.
Markets are Being Compelled to Embrace Innovative Solutions	Stimulate markets to transition towards cleaner technologies at a swifter pace, leading to increased revenue, heightened supplier competitiveness, and ultimately reduced costs due to economies of scale. Augment the presence of markets that foster the attainment of social objectives and serve as role models through the establishment of standards and provision of information.
Enhanced Market Entry	Fostering minor and med-sized companies growth and encouraging sellers variety.

Source: Sustainable Procurement, CIPS course book, 2010

Unintended Benefits: Increased public needs for sustainably finished goods and services can lead to favourable indirect outcomes, like heightening consumer consciousness about the environmental and social applications of various purchases. This awareness spurs interest in socially responsible consumer behaviour, fostering the demand for sustainable consumption and production practices. By establishing SPP initiatives, governments can set an example of responsible governance, manage risks, and promote behavioural change. Implementing sustainable procurement policies effectively showcases an authority's commitment to sustainability and enhances public perception and legitimacy (United Nations, 2008).

Table 4: Indirect Benefits

Indirect Benefit	Description
Raising Consumer Consciousness	Enhance consumer understanding about the environmental and social implications of purchases. Promote the adoption of eco-friendly consumption and production trends.
Displaying Accountable Governance	Address the escalating public demand for governments to exhibit environmental and social responsibility through actions that manage risks and stimulate changes in behavior.
Enhancing Public Perception and Legitimacy	Blend sustainable long-term growth with reduced environmental impact and improved living conditions. Fulfill ethical and political responsibilities by the public sector.

Source: Sustainable Procurement, CIPS course book, 2010

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2.2.7 Forces behind sustainable procurement

Drivers mention about motivating things that lead to addition of sustainability considerations into procurement processes. These drivers serve as catalysts that encourage actions toward sustainable procurement. For instance, elements like resource scarcity, legal mandates, reputation risks, stakeholder pressures, and others prompt organizations to undertake sustainability-oriented measures (Seitz and Wells, 2006).

Drivers play a preparatory role before the actual implementation of a sustainability program, influencing its initiation. These factors can be divided into internal and external ones. Table 5 and Table 6 provide an overview of major general external and internal drivers for natural procurement. Notably, the relevance and impact of certain drivers might vary across sectors. As a result, organizations should assess which drivers can be most effectively employed to advance a sustainable procurement start.

Table 5: External Drivers for Sustainable Procurement

Drivers	Indicators of the Drivers
Political Influences	Governmental Policies, Objectives, Incentives, and Sanctions; Government Procurement Guidelines and Employment Policies
Economic Factors	Decline in Market Demand for Unsustainable Products/Services and greater interest in sustainable Alternatives
Social and Moral things	Social attitudes and values are changing as a result of the media, banking, and consumer advocacy industries; Increasing Sustainability forces: Demands from society for moral behavior, social justice issues, corporate governance, fair trade, and industry ethics codes
Technological Influences	Competitive and Market Dynamics: Adoption of Sustainable Technologies, Unveiling Unsustainable Practices, and Prospects in Emerging Sustainable Technology Markets (e.g., Alternative Energy)
Legal Factors	Influences of National and International Laws: Regulations Covering Wastages, Emissions, Worker's Rights, Health and Safety, Consumer Rights, Corporate Governance.
Nature related factors	naturally available materials lessening and Associated Expenses (Mainly Energy Costs), Significance of Key Stakeholders' Issues (e.g., Climate Change, Greenhouse Gas Emissions, Deforestation, Water Management, Biodiversity Preservation, Pollution, Waste Reduction), and Alignment with National Goals in International Accords
Influences on External Stakeholders	Customers, Workforce, Investors, Activism from Pressure Groups, and the Prospects of Cause-Related Marketing Present both Obstacles and Prospects for the Organization, Influencing Resource Acquisition and Collaborative Endeavors

Source: Sustainable Procurement, CIPS course book, 2010

However, despite external pressures, a significant number of organizations have not fully working on sustainability in their procurement practices. This situation poses a considerable risk to end users and the regulations and standards that oversee supplies in the public procurement supply chain (Tregidga and Milne, 2006). The emphasis on sustainable procurement might largely stem from the legal mandates of environmental management, which compel agencies to adopt the practice and perceive it as a means to mitigate risks and negotiate contracts more effectively. Furthermore, consumer consciousness regarding sustainable procurement emphasizes aspects like recycling, reuse, and reverse logistics, which can lead to increased expenses (Tregidga and Milne, 2006).

Neglecting these external factors can hinder the adoption of a comprehensive approach to sustainable procurement practices. While procurers might have some awareness of these concerns, they could prioritize other aspects that are equally crucial for procurement sustainability, possibly sidelining procurement decisions solely based on cost. However, if management perceives these external factors narrowly, obstacles to embracing a broader approach to sustainable procurement practices will persist. It's commonly argued that managers who align with the organization's values are motivated to advance sustainability-related goals (Koplin et al., 2007).

The effects of internal sustainability drivers have been studied, emphasizing role of organizational attributes that endorse sustainable procurement practices (Tregidga and Milne, 2006). Therefore, the successful integration of sustainable procurement practices depends on internal support established through policies.

Table 6: Internal Drivers for Sustainable Procurement

Drivers	Indicators of the Drivers
Organizational Aims	Sustainability principles and targets are incorporated into the corporate vision, mission, and goals.
Organizational Situation or Position	corporate social responsibility goals and policies.
High amount of Dedication	Champions, advocates, and proponents of sustainability within senior management.
Business Influences	Reasons in favor of sustainability encompass enhanced reputation, bolstered brand strength, increased sales revenue, reductions in costs and waste (eco-efficiencies), improved innovation and efficiency within the supply chain, and alleviated regulatory burdens.
Accountability is an Established Reality	Mechanisms of accountability that demonstrate commitment and link rewards to sustained progress and performance over the long term.
Awareness of Risks	Emphasis is placed on risk management and business perception. Non-sustainability presents risks to reputation and the supply chain, along with potential reputational damage.
Influences on Stakeholders	Internal Stakeholder Sustainability Requirements.

Source: Sustainable Procurement, CIPS course book, 2010

2.2.8 Challenges to sustainable procurement

Sustainable procurement has a number of obstacles that hinder its adoption and application. A crucial part of procurement in companies' transformation, both in the public and private sectors, serving as a tool for policy execution. In countries like Ethiopia, public procurement institutions are mandated to ensure transparency, fairness, and value for money (PPPAA,

2010). However, effectively embedding sustainable procurement practices often faces obstacles during implementation. It's important to note that these challenges impact both public and private procurement entities (Roos, 2012).

Legislative Support: Countries must establish legislative frameworks that address sustainability criteria in public procurement. Although directives like the Public Procurement Directive/Manual in Ethiopia exist, they do not encompass sustainable procurement practices, such as procuring sustainable products for value. The absence of clear regulations for integrating sustainable procurement hinders progress. National legislation needs to include provisions allowing the integration of sustainable practices (Roos, 2012).

Accounting procedures and financial structures: Budgeting and financial structures for public facilities can pose challenges. Short-term focus on results can lead to inefficient resource allocation and compromise long-term benefits. Budget constraints and a focus on short-term gains can hinder sustainable purchasing decisions (Lee et al., 2013).

Political Commitment: High-level political commitment is crucial for proper application of sustainable procurement practices. Consciousness of the advantages of sustainable items and services might be lacking, leading to conflicting priorities and misalignment with national objectives (Roos, 2012).

Technical Capacity: Procurement officers' capacity is often insufficient for effective implementation. Clear guidelines and training are necessary to put sustainability criteria in whole procurement process, from tendering to evaluation (Steurer and Konrad, 2007).

Low Multi-Stakeholder Approach: Successful sustainable procurement requires multi-stakeholder involvement. Apart from primary value chain actors, other stakeholders like researchers, government bodies, and other supporting agencies need to collaborate for improved sustainability. Managing differing perspectives is essential to ensure all actors benefit (Boomsma, 2008).

Lack of Social Drive: The absence of external pressures like consumer demand or NGO activism indicates a lack of social responsibility. NGOs and media pressure can drive awareness and accountability for sustainability (Erdmenger, 2008).

Supply Constraints: Limited domestic industry readiness can hinder implementation. Sharing best practices and successful experiences can aid organizations in promoting sustainable policies. Leadership commitment is vital for policy alignment and coherence (Steurer and Konrad, 2007).

Mandatory SPP and Government Alignment: Implementing mandatory sustainable procurement requires government-wide commitment and clear managerial expectations. Centralized

and decentralized procurement systems must ensure sustainability decisions are consistent (Koplin et al., 2007).

Research studies, such as those following the approach developed by the RELIEF project, have highlighted barriers to sustainable procurement in developing countries. Identifying potential barriers, engaging relevant actors, structured assessments, and strategy development are essential steps to address these challenges (Barth et al., 2005).

2.3 Empirical literature review

The main target of this section is to inspect the empirical research conducted by other scholars on topic of sustainable public procurement of various countries. The empirical study is divided into two subsections, focusing on the actions of SPP in both emerged and emerging nations. Objective is to review and analyse the contributions made by researchers in understanding how sustainable public procurement is implemented and experienced in different national contexts.

2.3.1 SPP practices in some developed nations

Roos (2012) emphasizes in her research that Sustainable Public Procurement (SPP) guidelines in industrialized nations, including Europe, the US, Canada, Japan, and Australia, demonstrate significant cross-national variation due to differing national policy priorities.

For instance, the European Union (EU) follows Core principles like optimizing value for resources and ensuring equity in public procurement. The EU's overall policies aims to foster competition within the Union's public procurement market. Notably, discussions about sustainable public procurement in the EU primarily revolve around environmental considerations. However, there is a noteworthy diversity among EU member countries regarding the development, implementation, and focus of their national SPP policies.

On the other hand, according to the UNEP (2012) study, Sustainable procurement policies in the United States give special attention to social considerations. These policies aim to avoid differentiation and guarantee equitable opportunities for businesses owned by women and minorities. Furthermore, the US procurement policies also include measures to support and purchase from native people.

Likewise, in Canada, federal procurement guidelines encompass economically focused elements of procurement. Furthermore, the country has established specific measures to offer

procurement prospects for indigenous businesses, underscoring the social dimensions of sustainable procurement.

As evident from the research by Roos (2012) and UNEP (2012), the function of Sustainable Public Procurement of these developed countries differ significantly, reflecting their respective national policy priorities and goals. Understanding these variations and policy emphases that Sustainable procurement practices can aid in the creation of strategies that are more efficient and tailored to the specific context, which could be relevant to my master thesis focusing on sustainable public procurement policies.

2013 saw the completion of a comparison study by Islam and Siwar between Australia and Malaysia to examine the present exercises of Sustainable Procurement (SP) and found out the main chances and hurdles to SP engagement in the government sector of both nations. Data for the study was collected by different kinds of processes like asking people opinions, reading people's daily exercises etc in Australia and Malaysia. Findings revealed that while few SPP practices were apparent of both nations, the scope and character of these activities varied significantly.

Specifically, Safety aspects of SPP received greater attention in Australian public organizations, while Malaysian organizations prioritized diversity. However, overall, Malaysian public sector organizations outperformed their Australian counterparts in most dimensions of SPP practices. The study identified monetary pressures as the most important disadvantage to SPP implementation in both countries. On the other hand, organizational efficiency and transparency presented the best opportunities for implementing SPP practices.

In Japan, the main emphasis of sustainability criteria lies in environmental aspects, coupled with the enforcement of corporate governance measures. Meanwhile, in Australia, local businesses are aided by state-based programs. Sustainable procurement policies can vary in focus, including promoting certain demographics, ensuring good governance, supporting environmental sustainability, and prioritizing local sourcing. The particular policy emphasis corresponds to one or multiple dimensions of sustainable development's three pillars, which vary based on each country's preferences.

According to Brammer (2007), EU nations like Netherlands, Sweden, Norway, the United Kingdom (UK), and Denmark are at the forefront when it comes to SPP policies and initiatives. These nations exhibit a notable degree of consciousness and implementation of sustainable procurement regulations within their company's procurement ideas and processes.

In summary, the studies conducted by Islam and Siwar (2013) and Brammer (2007) provide practical insights into the implementation of government policies related to Sustainable Procurement in Australia, Malaysia, Japan, and European countries. They highlight the varying approaches, practices, and challenges faced by different countries in integrating sustainability into public sector procurement processes. These findings could be relevant to my master's thesis focusing on sustainable procurement policies and practices worldwide.

2.3.2 SPP practices in some developing nations

UNEP (2012) conducted an extensive investigation on sustainable public procurement (SPP) implementation in different nations across different regions. In an effort to improve public procurement, Ghana is actively engaging in a prominent SPP program in Africa.. Additionally, the International Institute of Sustainable Development (IISD) has been advocating for SPP in emerging economies, initiating projects in nations like India, South Africa

In Asian countries such as Korea, Thailand, India, and China, SPP activities are permitted by law, and attempts are being made to assure compliance by developing eco-labels for goods and services.

Roos (2012) explored the SPP practices observed in certain developing nations, specifically focusing on Mauritius and Chile. In Mauritius, the government recognizes the potential social, public health, environmental, and economic impacts of public procurement decisions , pledges to incorporate sustainable criteria into the procurement procedure. While Mauritius does not have explicit provisions for SPP in its current procurement legislation, the legal environment is conducive to SPP implementation, and the government aims to ensure that Value-for-money is delivered through acquired commodities, employment, and services while limiting nature harm and enhancing social advantages.

Abdul-Aziz (2013) conducted a study in Ghana with the goal of assessing the scope of sustainable practices in public sector procurement. The research revealed several challenges faced in implementing SPP in Ghana, including the insufficient funds for both internal and external assistance, absence of Key Performance Indicators (KPIs) to measure progress, higher cost for sustainable products, limited availability of sustainable materials in local markets, absence of backing from upper management, supplier opposition, inadequate legal framework and enforcement, deficient internal knowledge about sustainability matters, conflicting goals, and inadequate information about supplier corporate social responsibility actions.

Overall, these studies shed light on the efforts and challenges related to sustainable public procurement practices in different nations, providing valuable insights that can contribute to the application of effective and sustainable procurement strategies in various national contexts, which is relevant to my master's thesis on sustainable public procurement policies and practices.

2.4 Theoretical framework for concepts

2.4.1 Adding SPP in procurement

Figure 2 below shows essential integration of sustainable public procurement practices across seven fundamental stages of the procurement process, as proposed by the Chartered Institute of Procurement Supply (CIPS, 2012).

This diagram presents a generic representation of the steps involved in procurement, which the researcher utilizes as a conceptual framework to scout the incorporation of Sustainable Public Procurement (SPP) in each stage of procurement cycle. This framework serves as a guide to understand how SPP practices can be effectively integrated at various points throughout the procurement process, facilitating the successful adoption of sustainable practices in public procurement initiatives

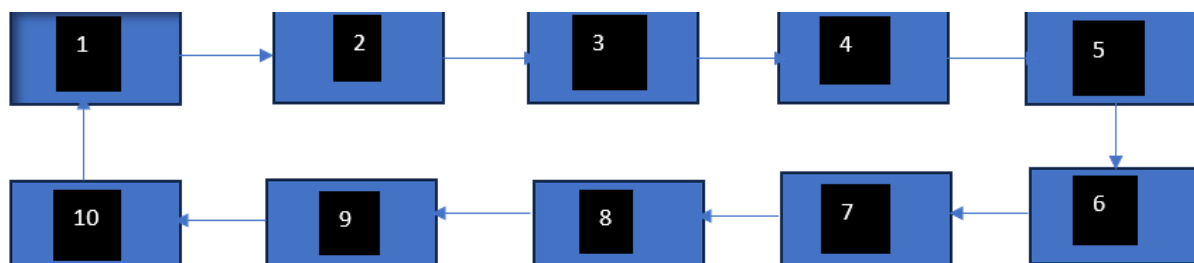


Figure 2: General procurement cycle

Source: CIPS, Sourcing in Procurement and Supply, Hand Book, 2012

1 is specification, 2 is develop contract terms, 3 is identifying potential suppliers, 4 is evaluate suppliers, 5 is request estimates or bids, 6 is selection of bids, 7 is discuss greatest values, 8 is contract is handed, 9 is contract managing and 10 is identify the needs

The described process includes both before contract handing situation and those after contract handing situation. The pre-contract handing periods involve several essential steps, starting with the identification and definition of the procurement needs. Subsequently, procurement

planning takes place, followed by the development of the contract. The process then involves conducting a market survey and engaging with potential suppliers. The appraisal and selection of suppliers are crucial in this stage, and the offers received are carefully evaluated before the contract is ultimately awarded.

On the other hand, the post-contract award stages involve various activities such as expediting, ensuring timely delivery of goods or services. Payments to suppliers are processed during this phase. Effective contract or supplier management is also a critical component to ensure the contract's successful execution. Ongoing asset management is carried out to maintain and optimize the use of procured assets. Finally, lessons are learned from the post-contract phase to improve future procurement practices, promoting continuous improvement in sustainable public procurement (CIPS, 2012).

This comprehensive procurement process, comprising pre and post-contract award stages, forms the basis for analyzing how Sustainable Public Procurement (SPP) practices can be effectively integrated at each stage. Understanding how SPP principles are applied throughout these stages can contribute to enhancing sustainable procurement practices in public sector initiatives.

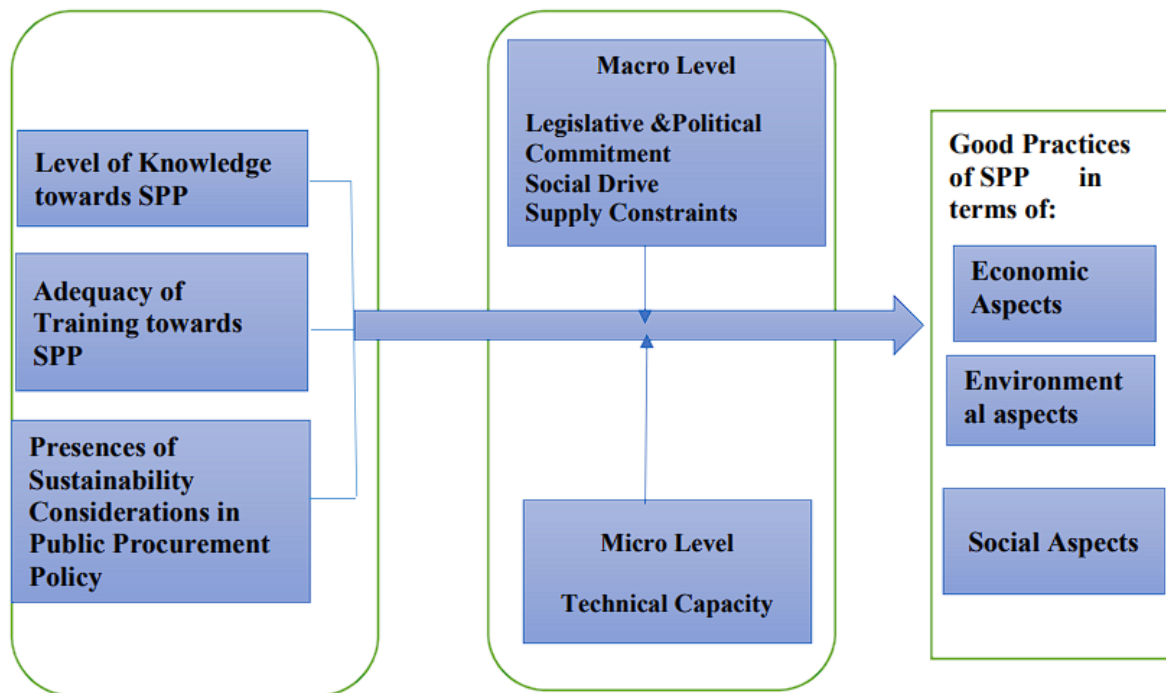
2.4.2 Conceptual structure of the Research

Bogdan and Biklen (2003) define A conceptual structure acts as the core plan composed of abstract components that represent the synthetic, experimental, and observational methods of a envisioned procedures. These abstract blocks are interconnected to form the framework, aiming to achieve specific expected outcomes. In other words, a conceptual framework serves as the fundamental structure that organizes and connects various elements of a research study, guiding the exploration and Comprehension of the research subject matter, guiding towards the desired research results.

INDEPENDENT VARIABLES

DEPENDENT VARIABLE

Challenges of Addressing SPP



Source: Researcher Conceptual Framework.

Figure 3: Conceptual framework

The provided Figure 3 presents a hypothetical conceptual framework that establishes connections between sustainable public procurement (SPP) practices and The components engaged in these activities. The extent of recognition within procurement professionals regarding SPP, includes their knowledge and the adequacy of their training on SPP, significantly influences the implementation of effective approaches in incorporating sustainable public procurement into their daily operations.

Moreover, the existence of strong and comprehensive sustainable public procurement policies, represented in various formats and integrated into public procurement regulations, guidelines, contract conditions, and other relevant procurement documents, serves as a crucial prerequisite for ensuring effective application of sustainable procurement functions within two examined public procurement organizations.

Conceptual framework also emphasizes the importance of various types of support at both macro and micro scales. At the macro level, legislative and political commitment towards

sustainability, societal awareness of sustainability considerations, and addressing supply-side constraints contribute significantly to the effective application of SPP practices in both public procurement sectors.

In summary, this hypothetical conceptual framework illustrates the interconnection between the different elements that influence sustainable public procurement practices. It underscores the importance of awareness, training, policy support, and various types of external assistance to foster proper and effective strategies for implementing sustainable public procurement within the examined public procurement entities.

3 Research Methodology

The methodology serves as the fundamental structure guiding the research in this master thesis on sustainable public procurement. In Chapter 3, The paper outlines the research methodology, data collection strategies, and data collection process. Additionally, it thoroughly elaborates on the procedures, and variables utilized, providing justification for their selection. Moreover, the thesis transparently acknowledges the limitations of the chosen methodology to ensure the authenticity and credibility of this research.

3.1 An explanation of the research area

In this master thesis, the central focus was on delving deep into the realm of sustainable procurement practices within public and construction organizations. To achieve a thorough understanding, the study was supported by the examination of two in-depth case studies: "USA - Sustainable Waste Transport" and "YORbuild sustainable construction." These case studies were chosen due to their noteworthy and pioneering contributions in promoting sustainable procurement practices within their respective domains.

The case study "USA - Sustainable Waste Transport" offered a valuable insight into sustainable procurement practices within the waste transport industry in the United States. Using a thorough examine of this case, the study explored how sustainability principles were integrated into the procurement processes related to waste transport services. The case provided a real-world example of how the public sector collaborated with private waste transport companies to foster environmentally responsible practices, reduce carbon footprints, and minimize waste generation. By investigating this case, the thesis aimed to uncover the innovative approaches, challenges faced, and outcomes achieved in the pursuit of sustainable waste transport practices.

On the other hand, the case study "YORbuild sustainable construction" shed light on sustainable procuring methods in the building sector. YORbuild served as a prime example, illustrating how collaborative efforts between various stakeholders, including the public sector and construction firms, can result in the adoption of strategies for sustainable procurement. By investigating this case, the thesis sought to understand how YORbuild successfully integrated sustainability criteria into construction projects, emphasizing the use of eco-friendly materials, energy-efficient designs, and socially responsible labor practices. The case offered valuable

perspectives on the intricacies and accomplishments of sustainable procurement in the public sector.

3.2 Research approach

In this study, a distinctive study approach was utilized, facilitating the collection of quantitative data. This enabled us to derive robust results from the gathered data. The data was sourced from various reputable journals, research papers, and other scholarly publications that had already been analyzed by different authors. This approach allowed us to identify meaningful patterns in the results and provided a solid foundation for further investigations.

3.3 Research design

According to Kothari (2004), research design compares to conceptual framework which guides the collection, measurement, and analysis of data. It serves as a blueprint for researchers, helping them make critical decisions about the allocation of their limited resources. The research design encompasses various methods such as experiments, interviews, observations, and record analysis, either independently or in combination. It is a structured plan devised to gather responses addressing the research inquiries presented in the study (Cooper and Emory, 1995).

Both case studies serve as exemplary models for sustainable procurement practices, highlighting the importance of collaboration, policy support, and long-term commitment to sustainability goals. By exploring the lessons and successes of these case studies, the study aimed to draw meaningful insights applicable to other contexts, sectors, and organizations seeking to embrace sustainable procurement as a pathway to a more sustainable and equitable society. Furthermore, the research aimed to make a contribution to the expanding pool of knowledge regarding sustainable procurement, identifying best practices and potential challenges that may arise during implementation, and providing recommendations for enhancing the effectiveness and impact of sustainable procurement strategies. Ultimately, the results of this investigation aimed to foster increased recognition and comprehension of the transformative capacity of sustainable procurement in shaping a more sustainable and resilient future for our society and the planet.

3.4 Data sources and data collection

In conducting the study, a rigorous data collection process was undertaken, drawing from a wide array of diverse and reputable sources. The data acquisition encompassed an extensive exploration of the internet, academic journals, research reports, and other relevant authorities. This meticulous approach was instrumental in assembling a rich tapestry of information, constituting the backbone of this study's exploration into the intricacies of Sustainable Public Procurement (SPP).

Inclusion of such comprehensive range of data sources served as a bedrock for fostering a holistic understanding of the multifaceted landscape of SPP. By accessing an abundant pool of knowledge, the research could delve into different facets of sustainable procurement practices, examining theoretical frameworks, empirical case studies, policy guidelines, and legal considerations. The amalgamation of these datasets paved the way for a thorough examination of the drivers, challenges, successes, and potential areas of improvement within the domain of sustainable procurement.

Moreover, the integration of diverse datasets played a vital role in corroborating and validating the findings. By cross-referencing information from multiple sources, the research established a strong basis for credibility and reliability. This triangulation of data added layers of robustness to the study's outcomes, ensuring that the conclusions drawn were not contingent on a single data stream but were supported by a cohesive network of evidence.

Furthermore, the utilization of data from various authoritative entities and reputable sources endowed the research with a sense of authority and expertise. Academic journal articles provided scholarly insights and theoretical underpinnings, while research reports and official documents, on the other hand, shed light on the broader policy landscape, illuminating the legislative framework underpinning sustainable procurement practices.

In conclusion, the comprehensive and diverse data collection process has laid the foundation for this study on Sustainable Public Procurement. By tapping into a multitude of information sources, the study has gained a nuanced and multifaceted understanding of SPP's functioning and significance. The synthesis of these datasets has not only enriched the research findings but also empowered the study to make valuable contributions to the burgeoning field of sustainable procurement, inspiring advancements in policy, practice, and the pursuit of a more sustainable and equitable future for our society and the planet.

3.5 Research quality

Throughout the study, our focus was on ensuring reliability and validity. Reliability relates to the study project's steadiness, and its potential for replication (Saunders et al., 2012). To achieve replicability, we maintained complete transparency throughout the research process, thoroughly documenting all sources and procedures. Moreover, we conducted a thorough review and cross-validation of our work to mitigate biases and prevent misunderstandings.

Internal validity was a key consideration in measuring what the study aimed to assess (Merriam, 1995). To enhance internal validity, we adopted a comprehensive approach during the data collection phase. By raising clarifying inquiries and examining matters from various viewpoints and angles, we ensured that our measurements aligned with the research objectives.

Conversely, external validity refers to the generalizability of the exploration findings (Saunders et al., 2012). Throughout the whole study, we encountered challenges in generalizing the findings due to the inherent differences between USA procurement practices and those of YORbuild. However, we addressed this issue by meticulously ensuring that the data from both cases were aligned and yielded equitable results. Despite the contrasting contexts, our rigorous approach allowed us to draw meaningful insights and create connections between the two cases, contributing to a comprehensive understanding of sustainable procurement practices.

4 Case studies

4.1 Relevance of the selected case studies

The case studies of YORbuild Sustainable Construction in the UK and Metro's Waste Transport project in the USA are relevant on multiple fronts, primarily for their strong commitment to sustainable development. Both projects exemplify how public entities, namely YORbuild and Metro, strategically integrate environmental, social, and economic considerations into their initiatives. This comprehensive approach is indispensable for tackling contemporary challenges and forging a path towards a more promising future. By prioritizing sustainability, these cases serve as beacons of responsible project management in an era where such efforts are crucial for the well-being of our planet and communities.

In terms of procurement practices, these cases shine a light on innovative methods that transcend traditional contract awards. YORbuild's tailored frameworks and Metro's exploration of alternative transportation methods demonstrate a forward-thinking approach to achieving project goals. These innovative procurement strategies are pivotal in optimizing resource utilization, fostering efficiency, and aligning projects with specific needs and contexts. The adoption of these inventive approaches not only enhances project outcomes but also sets a precedent for similar endeavors, promoting adaptability and effectiveness in the face of complex challenges.

A standout feature in both cases is the active engagement with local communities. These projects recognize the importance of community involvement, seeking input from stakeholders and giving the public a voice in decision-making processes. This inclusive approach goes a long way in building trust, ensuring that projects resonate with community needs, and aligning outcomes with broader societal goals. By fostering open dialogues and addressing community concerns, YORbuild and Metro set an exemplary standard for public projects that consider the diverse perspectives and involvement of people.

The emphasis on inclusivity, as demonstrated by YORbuild's integration of minor and medium-sized companies (SMEs) and Metro's exploration of varied transportation solutions, underscores a commitment to diversity. YORbuild's focus on SMEs creates a more vibrant pool of contractors, fostering competition and providing opportunities for businesses of different sizes to participate. Meanwhile, Metro's consideration of alternative transportation methods showcases an openness to breaking away from the conventional, ensuring that innovative ideas

are explored and considered, even in well-established domains. This inclusive mindset fosters a dynamic and forward-looking project environment.

Environmental responsibility is another crucial aspect highlighted in these cases. Both YORbuild and Metro prioritize environmental impact reduction by promoting waste reduction, considering renewable energy technologies, and addressing carbon footprints. These Endeavor's are praiseworthy not only within the framework of global climate change Endeavor's, but also set a standard for industries that inherently impact the environment. By actively seeking sustainable solutions and incorporating them into their projects, YORbuild and Metro contribute to a more environmentally-conscious construction and transportation landscape.

Moreover, the economic impact of these sustainable projects cannot be understated. They provide fertile ground for local businesses to thrive, create job opportunities, and inject vitality into the regional economy. By prioritizing sustainability while recognizing economic potential, YORbuild and Metro demonstrate that responsible projects can drive positive economic outcomes, leading to a winning scenario for both the environment and the local economy.

Transparency and accountable governance, as exemplified by Metro's adherence to their charter and commitment to open dialogue, form a fundamental aspect of both cases. Transparent decision-making processes build public confidence, ensuring that the actions of public entities are accessible and comprehensible to the communities they serve. This aspect not only fosters trust but also encourages responsible governance, a crucial element in the effective execution of public projects.

These case studies provide valuable lessons for other projects, regardless of their domain. They showcase the successful integration of sustainability, community engagement, innovative procurement, and transparent governance, setting a high standard for organizations operating in various sectors. The real-world examples offered by YORbuild and Metro offer practical insights that can be adapted and applied in diverse project contexts, promoting better outcomes and responsible practices.

Furthermore, the policy implications of these cases are substantial. They offer policymakers a roadmap for effective approaches to achieve sustainable development goals. The lessons learned from YORbuild and Metro can guide the formulation of more robust and comprehensive policies that prioritize sustainability, inclusivity, community engagement, and transparency. These policies, informed by the practical experiences of these cases, have the potential to catalyse positive change on a broader scale, influencing the direction of future projects and contributing to the overall betterment of society.

In conclusion, the YORbuild and Metro case studies stand as inspiring real-world examples of how public entities can drive positive change through sustainable, inclusive, and innovative project management. They offer insights that extend beyond their immediate domains, setting standards for responsible governance, community involvement, and environmental stewardship. These cases serve as valuable models for organizations, governments, and individuals seeking to make a positive impact in their communities, ultimately contributing to a more sustainable and prosperous future for all.

4.2 Case study 1: YORBuild Sustainable Construction, England, UK

YORbuild sustainable construction is a collaborative partnership entity comprising municipal authority bodies from Yorkshire and Humber, UK, with an annual procurement amount of 471 million dollars (300 million euros) over four years, aiming to achieve sustainable development impacts encompassing environmental, social, and economic aspects.

4.2.1 Context

Construction constitutes the largest category of expenditure, amounting to 1.86 billion dollars annually throughout every municipality within the Yorkshire and Humber region of England. The significant financial investments in construction contracts, coupled with the substantial potential impacts of such projects, have necessitated the adoption of an innovative and collaborative approach to sustainability.

YORbuild comprises a collaborative set of construction frameworks developed for acquiring new construction, refurbishment, and design build projects. It serves the needs of 22 municipalities, along with various public sector entities and third sector organizations located in the Yorkshire and Humber region. The framework's development focuses on fostering collaboration, accommodating the geographical and demand diversity across the extensive 15,500 square kilometers of the region, which is home to roughly 5 million residents scattered in cities, towns, and villages. (YORbuild)

4.2.2 Project description

The YORbuild structure entails a four-year contractual deal between the YORbuild municipalities and that of the selected corporation that have been awarded with the contract. As

outlined in the documentation provided by YORbuild, the framework provides the following advantages to its participants:

The YORbuild framework offers five distinct call-off methods (A call-off method refers to a contractual approach that provides increased flexibility, 2010), providing users with enhanced flexibility in their contracts, making it easier to tailor the agreements to individual needs. These call-off methods are designed to be efficient, with administration taking just a few weeks, as they comply with EU legislation requirements. The framework also allows for adaptable allocation of price/quality weightings, accommodating specific project considerations. Furthermore, it simplifies the process of appointing contracts within the NEC3 family of contract. It is highly regarded by UK central government's. Government Procurement Service for promoting effective project management principles and practices, along with providing a solid legal foundation.

NEC3 encompasses a range of contracts designed to facilitate the application of efficient project management morals and functions. while establishing clear legal relationships. It is a versatile set of contracts suitable for procuring a wide variety of projects, including Works, Services, and Supply, ranging from bigger structured projects to smaller works and the acquisition of supplies and goods.

To promote a more diverse pool of contractors, the YORbuild framework was strategically divided into 6 lots. This division aimed to create equal opportunities for both major companies and minor to medium-sized enterprises (SMEs), with SMEs often serving as subcontractors to larger firms.

The implementation of YORbuild structure led to start of 97 constructing projects in 2010. However, its most remarkable feature lies in the innovative approach adopted during the initial procurement process and subsequent call-offs. The three pillars of sustainable development—environmental, social, and economic—were given priority in the framework, throughout the entire procurement and project execution stages.

4.2.3 Social pillar

Within the realm of social responsibility, YORbuild adopted a proactive approach to promote employment and skills development. Instead of the typical passive "best endeavours" approach, YORbuild actively sought to implement formal contractual arrangements to address these objectives. As a component of the assessment procedure, bidders were required to complete a table outlining their commitments to invest in various relevant areas. For projects

meeting specific size criteria corresponding to the thresholds established for the six lots, bidders were tasked with determining the extent of their commitment in the following areas.

Under the umbrella of social responsibility, YORbuild took proactive measures to enhance employment opportunities and skills development. This involved promoting various initiatives such as school/college site visits, workshops, involvement of universities in research, opportunities for individuals aged 16–17 to engage in work experience placements, work experience combined with level 1 and entry qualifications for those aged 18 or above, apprenticeship programs, and workforce development initiatives through national vocational qualifications (NVQs), is a competence-based qualification. It focuses on hands-on, job-related assignments to equip participants with the abilities and understanding necessary to perform a job efficiently. NVQs are formulated according to national benchmarks tailored to different professions. These criteria outline the skills required for a person to be considered competent in their respective job roles. As students undertake the NVQ course, they assess and compare their skills and knowledge against these standards, enabling them to identify the areas they need to improve to meet the competency requirements. (GOV.UK)

To ensure accountability and measure the commitment of bidders, specific targets were established in these areas, referred to as industry baselines, which were predetermined by the 'Construction Industry Training Board (CITB): Construction Skills.' These benchmarks given to the buyers as supplementary part of the tender documents. During the assessment process, the numbers submitted by bidders were compared to these baselines, and their ambition to surpass or meet these targets was duly assessed. YORbuild considered the scale and significance of the individual projects in the evaluation. Higher-value projects were expected to demonstrate greater efforts in improving employment opportunities and generating skill development opportunities. This approach incentivized bidders to actively contribute to the social development aspects of the projects they were involved in, promoting a more responsible and inclusive construction industry. (YORhub)

4.2.4 Economic pillar

The good economic impacts can be justified by incorporating local businesses into sub-contracting agreements and engaging them as suppliers of materials and equipment. Additionally, involving social enterprises, the 3rd sector, and community groups further enhances these beneficial effects. (Scottish Government)

As part of the tender evaluation process, prospective contractors were obligated to outline their strategy for managing the supply chain and their engagement with minor and mid-sized companies (SMEs) operating in a project areas. Once contractors were selected, a supply chain engagement program was implemented, aiming to integrate more SMEs into the the supply chains of the contractors within the structures.

YORbuild project also emphasized maximizing beneficial effects on the local economy. Bidders were actively promoted to present their previous experiences with locality-focused supply chain management practices through case studies. Furthermore, they were expected to demonstrate how their participation in the framework could bring economic benefits to the local community.

The YORbuild project's creators showed a strong interest in understanding how bidders included local subcontractors in their broader supply chain, especially in procuring construction materials and machinery from the region. Additionally, bidders who could demonstrate proactive engagement with the 3rd sector, Giving preference to voluntary and community organizations, charities, and social businesses. (UNEP 2012)

4.2.5 Environment pillar

The construction industry is highly environmentally sensitive, necessitating companies to showcase their endeavours in minimizing environmental impact. In the case of the YORbuild framework, bidders' expertise and past experiences in employing carbon reduction methods and renewable energy technologies were evaluated, along with their dedication to waste reduction and recycling practices.

YORbuild identified two key parameters for its framework, specifically methods to reduce carbon emissions in construction and strategies for managing construction waste. To ensure contractors' compliance with carbon reduction requirements, YORbuild mandated them to demonstrate their expertise in utilizing mitigation techniques. This involved showcasing particular expertise and practical familiarity with carbon reduction technologies, proposing how these methods could be effectively employed within the framework to achieve significant carbon reductions across the region, establishing a comprehensive system of governance, and presenting a formal application idea.

Moreover, prospective contractors were required to provide three examples of their previous work in sustainable construction. They received favorable consideration if they could exhibit a track record of adopting comprehensive approaches to sustainable building solutions. Im-

portantly, YORbuild emphasized that their concept of strong sustainability encompasses both the design process and the construction phase. Apart from carbon matters, YORbuild placed significant emphasis on addressing construction waste. Notably, the construction sector in the UK contributes nearly one-third of the nation's overall waste generation. In response, bidders were mandated to demonstrate a commitment to ongoing enhancements in waste reduction and recycling efforts. These claims had to be substantiated with strong supporting evidence. Conforming to the waste management hierarchy, priority was granted to prospective contractors that prioritized waste lessening strategies over sole reliance on recycling measures. (UNEP 2012)

Table 7: Overall Evaluation Parameters

Parameter	Description
Supply chain management	<ul style="list-style-type: none"> • Open methodology • Promotion of sourcing from local supply chains • Efficient monitoring and control.
Employment and skills	<ul style="list-style-type: none"> • Anticipatory involvement • Connected to project recognition/fulfillment • Application of crucial performance measures (KPI's)
Environment	<ul style="list-style-type: none"> • Real-world project-focused endeavor • Minimization of landfill waste and carbon footprint • Environmentally mindful design and effective contract administration.
Economic regeneration	<ul style="list-style-type: none"> • Emphasis on circulating local currency • Back up of social entrepreneurial efforts and small to medium-sized enterprises • Ongoing enhancement.

Source: UNEP report of impacts of SPP, 2012

4.3 Case study 2: Sustainable Waste Transport, USA

In the United States of America, with an HDI of 0.902, a Metropolitan Regional Government of Portland (Oregon) oversees a population of 3.8 million. They have procured waste transport services amounting to 180 million dollars for a span of 10 years, yielding sustainable development benefits across social, economic, and environmental dimensions.

4.3.1 Context

What is Metro?

Metro is an elected regional government in Oregon, known as the Metropolitan Regional Government of Portland. It operates as a public entity of the state and serves over 1.5 million individuals across Clackamas, Multnomah, and Washington counties, encompassing 25 cities within the Portland area situated on the Pacific coast of the United States. (Metro chapter, 1992)

Participation of Metro in sustainability.

For several years, Metro has dedicated to advocating for sustainability. Its objective is to collaborate with nearby residents, businesses, and communities to create a prosperous, sustainable area that helps everyone. Few years ago, Metro has experienced increased levels of unemployment as a result of worl wide economic crisis.

The Metro Charter, ratified by people's vote in 1992 and modified in 2000, articulates the following: "We, the community members of the metropolitan service district in the Portland area, aim to establish an accountable and visible regional government. This government will be responsive to the region's citizens and will work in harmony with local governments. Its primary focus will be on planning and policymaking to safeguard and enhance the health of both present-day and future times, as well as preserving the environment. Additionally, it will supply regional services that are efficiently and effectively provided, as desired and required by the residents. This charter for the metropolitan service district in the Portland area, known as Metro, is hereby ordained." (Preamble of Metro Charter, November 1992).

4.3.2 Project description

The background of the project involving Metro and waste transportation is as follows: In 2007, Metro made the decision to establish a long lasting agreement for the dumping from its transfer

terminals to a disposal location of solid trash situated up to seventy miles far in the Columbia Gorge, beyond Portland. Initially, from 1989, Metro had engaged a trucking company to carry out this service. However, managing this contract became increasingly challenging over time for Metro's Solid Waste Division.

This difficulty arose due to changes in the trucking firm's ownership structure. Initially a locally owned enterprise, the firm had undergone corporate restructuring and buyouts, eventually becoming a component of bigger nationwide firm headquartered near Chicago, Illinois. Also, the business was concerned about nature stemming from insufficient investment in truck maintenance and replacement.

Through extensive efforts and a proactive Request for Proposal (RFP) process, Metro successfully established a partnership with a financially stable contractor that could provide high-quality services. This collaboration simultaneously prioritized environmental protection, local economic growth, and social advantages. Across all stages of a procurement process, from the stages of strategizing til development process of contract negotiation, the principles of sustainable development have been integrated to ensure a comprehensive approach. (Carl Abbott, June 15 2022, Metro Regional government)

4.3.3 Identification of requirements and community engagement

Preliminary procurement and market involvement the procurement procedure was initiated two years before the expiration of the current contract, aligning it with the broader institutional requirements. Metro initiated a conversation with the local community, fostering connections and involving individuals in the decision-making process to address the societal components associated with waste transportation. This involved arranging public gatherings that included community associations, neighbourhood groups, and environmental advocates. The aim of these meetings was to establish central elements for the selection of a new contractor, while also providing a platform for expressing concerns and priorities.

A preliminary Request for Proposal (RFP) was formulated and shared with transportation sector for input. Although trucking had traditionally been responsible for hauling regional waste, Metro extended consideration to other feasible options like rail and barge transportation. These alternatives were incorporated into the process, expanding the scope of potential solutions.

4.3.4 Evaluation and Agreement Discussion

Multiple suppliers presented a total of 8 proposals, suggesting diverse transportation methods, with a notable emphasis on trucking (7 of the bids). To thoroughly evaluate these opportunities, Metro used outside guidance in the hiring process by using a consulting engineer with knowledge of the waste industry. Using established standards, each proposal underwent assessment and scoring. After thorough deliberations, Walsh Trucking, situated in Gilliam County, was ultimately chosen to be awarded the 10-year contract. (UNEP 2012)

4.4 Results and impacts of both case studies

4.4.1 Results of case study 1 (YORBuild Sustainable Construction)

The construction projects executed under the YORbuild initiative encompass a variety of building types, such as educational institutions, medical facilities, government offices, and residential complexes. Although the socioeconomic consequences of these projects typically remain detached from the specific function of the constructed edifice, the environmental effects are more closely tied to the subsequent utilization of the building. Hence, we will examine the broader range of socioeconomic implications associated with all endeavours overseen through the YORbuild framework.

Social impact: The project's collective influence on society has been noteworthy. To illustrate, up to this point, 2,091 students from schools have participated in visits and workshops at the construction sites. Moreover, 286 individuals have transitioned from training programs to gainful employment due to the initiative. The scheme has facilitated the successful completion of 310 sponsored NVQ certifications for current staff members, while also offering 195 opportunities for work experience placements. Furthermore, 45 apprenticeships have been made available as part of the project's impact.

Significant endeavours have been dedicated to establishing collaborations with a wide array of entities within the construction industry. These include associations like Education Business Partnerships and the Yorkshire and Humber Apprenticeship Training Agency (YHATA). YHATA's objective is to guide the creation of adaptable and top-tier construction opportunities, prioritizing the interests of both workers and participants within the regional context. (UNEP 2012)

Environmental impacts: Within the YORbuild context, it is a fundamental goal that all construction projects must consider the specific environmental implications associated with each

project. Moreover, Many projects have at least one of the following strategies: passive approaches for improving air flows and illumination, collection of rainwater, generation of combined heat and power, utilization of small-scale power generation methods (including photovoltaic cells, heat pumps, and wind turbines), incorporation of solar panels, use of materials with recycled or renewable content, and implementation of green roofs. As previously mentioned, YORbuild places a special emphasis on managing construction waste. Monitoring waste statistics is a mandatory practice due to YORbuild's commitment as a participant in the Waste and Resources Action Programme's (WRAP's) initiative aimed at reducing waste sent to landfills by fifty percent. (UNEP 2012)

monetary and market effects: The starting establishment of YORbuild's program for procuring materials locally has involved the structured management team in arranging and executing four 'meet the buyer' events. Total of more than 1,200 participants presented in this event, representing regional suppliers under YORbuild, their subcontractors, and possible new participants. Additionally, a collaboration is being developed with Think Zero, an organization that will assist the YORbuild team in future refining plans to engage with the aim of enhancing the local economy through strengthened cross-tier supply chain associations within YORbuild. Results from the attendance at the 'meet the buyer' events reveal that 73 percent of the attendees successfully established connections with new customers, and 27 percent identified chances to make offer for outsourcing tasks below primary YORbuild contractors. This outcome underscores the effectiveness of the initiative. (UNEP 2012)

4.4.2 Key success factors and lessons learned from case study 1

YORbuild serves as a compelling illustration of the substantial advantages gained from adopting a pragmatic sustainability approach. By focusing on the construction sector—recognized as pivotal in terms of sustainability—the Yorkshire and Humber regional partners have successfully integrated robust environmental and socioeconomic criteria into the framework. This integration has attracted a selection of highly qualified contractors with proven experience in social responsibility.

The framework's exceptional performance has exceeded initial expectations, laying the groundwork for even more remarkable accomplishments ahead. The current challenge lies in urging contracting authorities to exhibit increased ambition and foresight when outlining their requirements, particularly with regard to environmental and social aspects. Nonetheless, the prospects are promising, evoking optimism.

YORbuild's concentrated efforts are poised to progressively imbue the region's infrastructure with greater environmental consciousness, yielding heightened value. This impact extends beyond new constructions to encompass refurbishments and retrofitting projects. Furthermore, the framework's influence is far-reaching. For instance, social housing complexes constructed under its purview will integrate measures fostering energy efficiency. This will ultimately lead to cost savings for economically disadvantaged tenants, mitigating fuel poverty.

Educational institutions and other public sector structures involved in the structure will also enjoy the possibility for reduced energy expenses. Additionally, the chances provided to individuals with less skills or employment prospects alleviate the strain on taxpayer-funded welfare systems and foster local economic readiness for future growth.

Through consolidating regional public sector demands, significant efficiency gains have been estimated at tens of millions of pounds throughout the agreement's duration, resulting in substantial financial savings.

Lessons Learned:

The YORbuild collaborative initiative imparts several valuable insights:

- The exchange of expertise and insights concerning sustainable procurement and the construction industry yields significant advantages. Formulating such a framework enhances sustainable development outcomes by motivating the market to provide sustainable solutions.
- The project's principal success element lies in its pioneering socioeconomic efforts and its innovative approach. This approach was directed at achieving efficiency gains while simultaneously supporting strategic objectives centered on sustainable development.
- Additionally, a robust spirit of collaboration among local authorities played a pivotal role in establishing the YORbuild partnership. This novel structure not only facilitates more prudent resource allocation but also cultivates shared societal benefits. It is noteworthy that efficiency was a common thread interconnecting all the framework's objectives.

4.4.3 Results of case study 2 (USA-Sustainable Waste Transport)

Environmental results and impacts

Enhanced fuel efficiency is a critical goal in modern transportation, and the utilization of advanced technologies within the trucking industry is playing a significant role in achieving this objective. One such technology is the automatic idle shutdown feature, which is now inte-

grated into every truck as part of an ongoing effort to conserve fuel and reduce environmental impacts.

When a truck idles for extended periods, fuel is consumed unnecessarily, contributing to both economic costs and greenhouse gas emissions. The automatic idle shutdown feature addresses this issue by activating after 5 minutes of idle time. This means that when a truck comes to a stop and idles for more than 5 minutes, the engine will automatically shut down, conserving fuel that would otherwise be wasted during periods of inactivity. This not only saves costs for the trucking company in terms of fuel expenses but also helps in reduction in the emission of harmful greenhouse gases, which are a significant driver of climate change.

The implementation of automated air systems in these trucks further enhances their fuel efficiency. These systems continuously monitor and maintain optimal tire pressure. Properly inflated tires experience less rolling resistance, allowing the truck to move more easily and efficiently. As a result, the truck requires less fuel to cover the same distance, leading to increased mileage. This directly translates into improved fuel efficiency and reduced fuel consumption, which, in turn, contributes to decreased greenhouse gas emissions.

By combining the automatic idle shutdown feature with automated air systems, the trucking industry is making substantial strides in optimizing fuel efficiency and reducing its environmental footprint. These innovations not only yield economic benefits through fuel savings but also align with broader sustainability goals by decreasing the industry's contribution to climate change. As technology continues to advance, such initiatives will likely play an increasingly pivotal role in shaping a greener and more sustainable future for transportation. (UNEP 2012)

socioeconomic effects and outcomes

The introduction of latest wastage agreement has yielded notable social and economic benefits to the region. With a total of 52 drivers employed under the contract, an impressive 39 of them were recruited locally. This localized recruitment approach has not only provided job opportunities but also had a positive impact on mitigating unemployment levels within the region. This outcome underscores the contract's contribution to addressing a significant socio-economic challenge.

Since its inception in 2010, the waste transport contract has played a pivotal role in fostering an economic resurgence within the region. The financial resources generated through this contract have been channelled towards various avenues that collectively contribute to the region's overall growth. Notably, these funds are strategically allocated to towns, public donations,

social contracts, and initiatives like Minor organizations growth, all of which are aimed at bolstering the region's economic fabric.

The practice of redistributing funds to cities has likely led to improved urban infrastructure and services, enhancing the quality of life for residents. Allocating resources to social funds might have facilitated the implementation of welfare programs and services for marginalized communities, addressing societal inequalities. The support directed towards public projects may have contributed to the development of vital infrastructure, such as transportation networks or public facilities, thereby creating a more conducive environment for economic activity.

Moreover, the allocation of funds to initiatives like Small Business Development suggests a focus on fostering entrepreneurship and supporting local businesses. This, in turn, could result in job creation, increased economic diversification, and enhanced resilience of the local economy.

Collectively, these efforts paint a picture of a holistic and comprehensive approach to regional economic development. By effectively utilizing the funds generated from the waste transport contract, the region has managed to stimulate economic growth, enhance social well-being, and empower local businesses, all contributing to a more prosperous and vibrant community. (UNEP 2012)

4.4.4 Key success factors and lessons learned from case study 2

The significance of the Oregon State law, embodied in the public procurement code, cannot be understated in its impact on the viability and sustainability of the procurement contract at hand. This legal framework has endowed purchasers with the means to actively bolster local businesses, providing them with a unique opportunity to prioritize and support enterprises located within the state's boundaries.

One of the key features of this state law is the provision that allows for a preference to be given to local bidders and goods produced within the state. This preference, often quantified as a specific margin, such as 5 percent, provides an advantage to local entities, enhancing their competitiveness in the procurement process. Essentially, it encourages the utilization of resources and services available within the state, which not only fosters economic growth but also bolsters the local business ecosystem.

In the context of this specific procurement agreement involving Metro, the local government or relevant authority, the legal framework empowered them to establish criteria that explicitly favored local enterprises. This approach not only promotes economic development but also has a

social aspect, as Metro actively supports and encourages underrepresented and women-owned businesses. These businesses, which are well-represented in the Portland region, receive an additional boost through this emphasis on local procurement.

The overall effect of these measures, sanctioned by the Oregon State law, is a more resilient and vibrant local economy. By providing a legal avenue to promote local businesses, especially those owned by minorities and women, and by emphasizing the utilization of in-state resources, the public procurement code aligns economic, social, and community objectives. This approach creates a positive cycle where local businesses thrive, job opportunities increase, and the local community benefits, reinforcing the sustainable nature of the procurement contract and contributing to the overall growth and prosperity of the Portland place.

Lessons Learnt: The method employed to assess our requirements became an important decision in the growth of this procurement, especially in sustainability. By actively involving a diverse group of parties involved, including local community associations, environmental non-governmental organizations (NGOs), and legal experts, we gained valuable insights into the various needs and interests at play. This comprehensive engagement was crucial in devising a unique and customized solution that effectively met the expectations of all stakeholders.

Despite the logical alignment between stakeholder engagement and sustainability, its significance is frequently underestimated. In this case, the choice of method was innovative, acknowledging the often-overlooked value of involving all those affected by the decision-making process.

Furthermore, a complete transformation of the waste transportation process was undertaken. This involved a meticulous analysis and redesign of every stage of the process, resulting in a more environmentally and socio-economically sustainable approach. This included the adoption of larger, more efficient trucks and the implementation of less polluting engines. These changes collectively contribute to a significantly improved waste transport system within Metro, positively impacting both the environment and the local economy.

4.5 Comparison of both case studies

The YORbuild Sustainable Construction case in the UK and the Metro's Waste Transport project in the USA share fundamental goals of sustainable development, but they diverge in scope, focus, and the sectors they address. Both cases emphasize the integration of environmental, social, and economic considerations, yet they do so in distinct ways, reflecting the unique challenges and opportunities within their respective contexts.

YORbuild's ambitious approach focuses on the Yorkshire and Humber region in the UK, a vast area encompassing diverse local authorities, where construction projects constitute a significant portion of annual expenditure. YORbuild's collaborative construction frameworks provide a tailored procurement solution, accommodating the region's geographical and demand diversity. The emphasis on collaboration, innovation in procurement, and engagement with small and medium-sized enterprises (SMEs) showcases YORbuild's commitment to inclusivity, both in terms of contractors and the community. This approach serves as a model for sustainable construction practices, showcasing the benefits of strategic partnerships and the inclusion of diverse stakeholders. The YORbuild case study provides valuable lessons for similar projects globally, illustrating the power of innovative procurement, community engagement, and the comprehensive integration of sustainability principles.

On the other hand, Metro's Waste Transport project is more localized, focused on waste transportation in the Portland area of Oregon, USA. While the scope is narrower, the project's impact on sustainability is significant, given the environmental challenges associated with waste management. Metro's proactive engagement with the local community, consideration of multiple transportation methods, and emphasis on transparency and accountability in the selection process highlight a robust approach to addressing waste management concerns. Metro's commitment to sustainability is evident through the incorporation of environmental, social, and economic pillars, aligning with their regional governance charter. By prioritizing local economic benefits, community involvement, and environmental responsibility, the Metro case study showcases how public entities can make a positive impact on a more localized scale. This case offers insights for waste management projects elsewhere, demonstrating the importance of community engagement and responsible decision-making.

In summary, the YORbuild case study illustrates the power of collaborative frameworks and innovative procurement in a broader construction context, promoting inclusivity and sustainable development across a large region. Meanwhile, Metro's Waste Transport project showcases the significance of localized sustainability efforts, focusing on waste management within a specific community, while demonstrating the importance of transparency, local economic impact, and community involvement. Together, these case studies exemplify diverse approaches to sustainable development, offering valuable lessons for public entities, organizations, and policymakers seeking to make a good impacts in their communities, whether on a regional or more localized scale.

4.6 Discussion

4.6.1 General Requirements and Benefits in Sustainable procurement practices

Requirements for sustainable procurement:

Sustainable procurement necessitates a comprehensive approach grounded in an understanding of local, regional, and global dynamics. This involves recognizing environmental and social challenges, regulations, and trends on various scales to align procurement decisions with overarching sustainability objectives. To achieve this, a company's culture, strategy, and mission must embody sustainability, with leadership championing these values and empowering employees at all levels to incorporate them into their roles. A pivotal component is strong corporate social responsibility (CSR) leadership, which involves setting clear CSR goals, engaging stakeholders, monitoring progress, and continuously improving initiatives to ensure ethical and environmental alignment.

Integral to sustainable procurement is the integration of sustainability considerations into both operational and strategic decision-making processes. This entails evaluating suppliers based on sustainability criteria, aligning procurement choices with long-term strategic goals, and emphasizing sustainability as a driving force for the company's overall direction. The performance of suppliers must also be consistently measured, evaluating their adherence to environmental and social standards to propagate positive change throughout the supply chain.

An essential aspect is proactive risk management, wherein potential sustainability-related risks are identified and strategies developed to mitigate disruptions, reputational threats, and compliance issues. Transparent communication further reinforces sustainable procurement practices, as companies openly share their sustainability goals, progress, and challenges with stakeholders, nurturing trust and accountability.

Sustainable procurement also presents opportunities for innovation, inspiring the exploration of eco-friendly alternatives, collaboration with suppliers for inventive solutions, and the creation of new business avenues, thereby merging positive change with business growth. In essence, sustainable procurement embraces a holistic approach, embedding sustainability within a company's culture, strategy, and decision-making processes. It extends beyond environmental and social goals to fortify the company's overall resilience and prosperity. (Procurement tactics PT)

Advantages of sustainable procurement practices:

Sustainable procurement practices offer a myriad of advantages that span beyond the realm of environmental and social responsibility. One of the primary benefits is risk reduction, as engaging with suppliers adhering to ethical and sustainable practices helps shield companies from supply chain disruptions, regulatory non-compliance, and potential environmental or social issues, thus safeguarding against legal, reputational, or operational risks.

Additionally, although there may be initial investment costs, sustainable procurement can lead to long-term cost reduction. Embracing energy-efficient products, waste reduction measures, and optimizing supply chain processes can culminate in lower operational expenses, consequently bolstering the company's overall financial performance.

Furthermore, sustainable procurement opens the doors to expanded revenue growth. Attracting new markets and customers who prioritize environmentally, and socially responsible suppliers translates to increased sales and revenue, as companies that visibly demonstrate their commitment to sustainability become more appealing to a larger customer base.

A robust focus on sustainability enhances a company's reputation within its industry and among consumers, establishing a positive perception that can bolster customer loyalty, enhance brand image, and provide a competitive edge. Such a reputation is vital for remaining relevant and resilient in an evolving business landscape, effectively future-proofing the company's strategy.

Moreover, sustainable procurement often promotes supplier diversity, fostering inclusivity and representation within the supply chain. This not only aligns with social responsibility goals but also introduces diverse perspectives and innovative solutions from a broad spectrum of suppliers, enriching the company's ecosystem.

The pursuit of sustainable procurement invariably leads to the discovery of new business opportunities. This exploration of innovative, eco-friendly products and services can lead to valuable partnerships that align with sustainability objectives, creating fresh avenues for growth and development.

Equally important is the aspect of industry compliance. Integrating sustainable practices ensures companies are more likely to meet evolving environmental and social regulations. By proactively adhering to these standards, companies minimize the risk of penalties or disruptions stemming from non-compliance, thus maintaining a solid standing within their industry.

In summary, sustainable procurement delivers a comprehensive array of benefits that encompass risk reduction, cost savings, revenue expansion, a favourable industry reputation, future readiness, diversity enhancement, adherence to industry standards, and the embrace of new

business prospects. As a strategic imperative, it encompasses both responsible practices and the fortification of the company's competitive position, ultimately contributing to a sustainable and prosperous future. (Proxima Group)

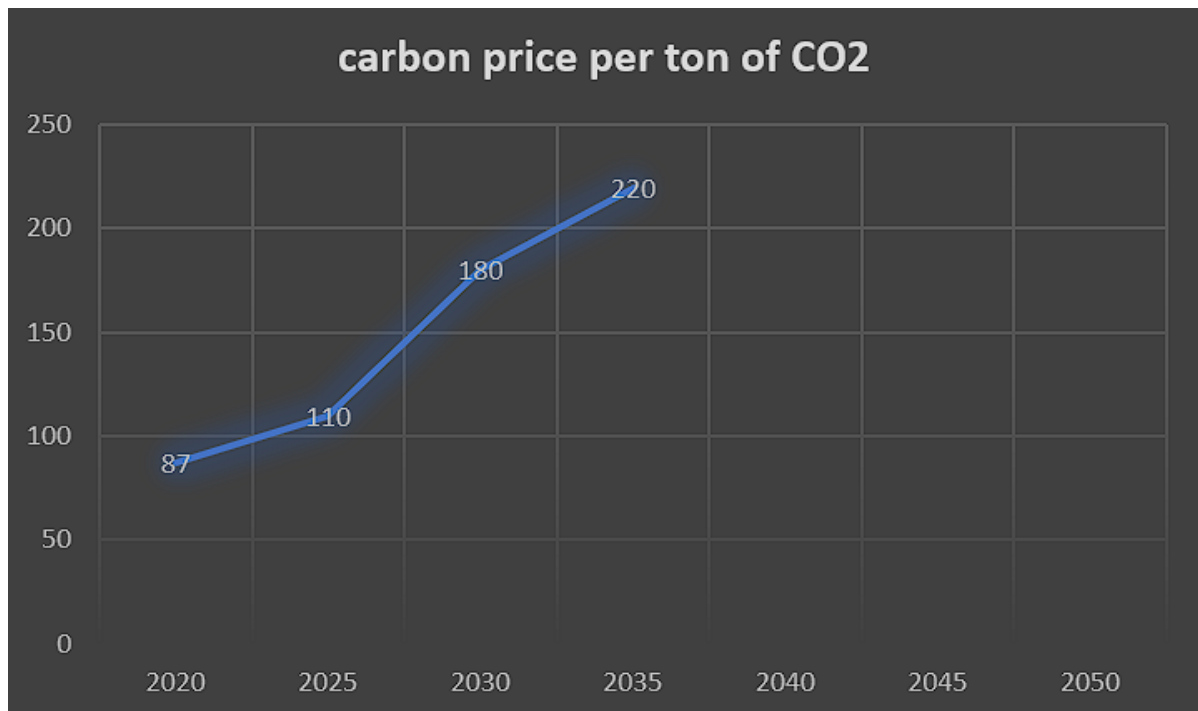


Figure 4: Cost increase of carbon in respective years

(Source: Roland Berger, JUNE 9, 2022 By Marcus Shuller)

According to the graph above, the price of carbon is currently at 100 euros per ton and is expected to increase in the future. Although this price spike cannot be controlled, good SPP use can at least help to prevent a sudden rise in price. Therefore, it is recommended for everyone because SPP offer several benefits, one of which is maintaining a consistent carbon price.

4.6.2 Relevance and Implications of the Findings

The case studies of "YORbuild Sustainable Construction" and "USA-Sustainable Waste Transport" offer valuable insights into sustainable procurement practices that have broader significance for organizations across different sectors and regions. These findings highlight key principles and lessons that can contribute to the advancement of sustainable procurement practices:

The case studies underline the imperative of embracing an integrated perspective on sustainability within the procurement process, encompassing environmental, social, and economic considerations. This holistic approach ensures that organizations address the full spectrum of sustainability impacts, leading to more robust and enduring benefits. Collaboration emerges as a central theme, with engagement of various stakeholders such as local government bodies, third sector organizations, communities, and suppliers, bolstering accountability, transparency, and the overall effectiveness of sustainable initiatives.

Flexibility and innovation in procurement strategies are paramount, as demonstrated by diverse call-off methods and alternative transportation options in the case studies. Organizations should strive to tailor their procurement approaches to unique circumstances while steadfastly aligning with sustainability objectives. Long-term planning and accountability mechanisms are critical in maintaining sustainable practices, achieved through multi-year contracts, industry baselines, and continuous progress tracking.

Stakeholder engagement, especially involving local communities, SMEs, and social enterprises, emerges as a catalyst for social development, economic growth, and community benefits. Environmental impact reduction stands as a key imperative, necessitating careful evaluation of bidders' environmental expertise and commitment to minimizing their ecological footprints. The implications for advancing sustainable procurement practices are multi-fold. Organizations should adopt comprehensive procurement strategies that transcend cost considerations, embracing broader sustainability dimensions to achieve long-term sustainable development. Capacity building initiatives, as observed in the YORbuild case, offer a valuable avenue for promoting employment opportunities, skill enhancement, and workforce development, contributing to social responsibility.

The promotion of local economic growth, exemplified through engagement with local businesses, SMEs, and the third sector in supply chains, underscores the positive impact on regional economies. Organizations should proactively seek opportunities to stimulate local economic progress through their procurement activities.

Environmental compliance should be a central criterion when selecting suppliers, necessitating that bidders showcase expertise in sustainable practices, carbon reduction, waste reduction, and recycling to align with environmental objectives. Transparency and accountability practices, mirroring those in the case studies, foster trust and responsibility. Communicating sustainability goals, involving stakeholders, and setting clear targets are essential for measuring the impact of procurement decisions.

Furthermore, fostering a culture of continuous improvement by encouraging bidders to share best practices and lessons learned, as evident in the YORbuild case, facilitates innovation and the enhancement of sustainable practices. Organizations should create platforms for knowledge exchange and incentivize suppliers to continually refine and innovate their sustainable approaches.

By embracing these generalized implications, organizations can elevate their grasp of sustainable procurement, align their procurement practices with overarching sustainability goals, and play a pivotal role in driving positive environmental, social, and economic impacts within their regions.

4.6.3 Practical Applications

An integrated sustainability approach in procurement mandates a thorough consideration of the interconnected nature of environmental, social, and economic factors across the whole procurement process. From first planning to supplier selection, contract negotiation, and project execution, this comprehensive approach ensures that sustainability criteria permeate every facet of procurement, leading to more enduring and impactful outcomes for sustainability goals. This shift in mindset views sustainability as an indispensable factor in decision-making, fostering a culture of responsible procurement.

Collaborative procurement, as exemplified in both case studies, cultivates a cooperative environment by engaging diverse stakeholders, including local government bodies, third sector organizations, communities, and suppliers. By involving these stakeholders throughout the procurement process, organizations gain valuable insights, address concerns, and ensure that the collective interests of the community are fully accounted for. This collaborative spirit fosters a stronger sense of ownership and commitment to sustainability objectives, ultimately resulting in more effective and meaningful project outcomes.

Flexibility and innovation, highlighted in the case studies, drive adaptive procurement methods. Offering diverse call-off methods and exploring alternative transportation options allows organizations to tailor procurement strategies to meet specific project needs while remaining aligned with sustainability principles. Contract flexibility facilitates customization, promoting efficiency and alignment with project requirements. Innovation in procurement practices can lead to optimized resource utilization, reduced environmental impact, and more favorable social outcomes.

Long-term planning with clear sustainability targets ensures a consistent commitment to sustainability over time. Continuous monitoring and progress tracking against these targets hold organizations accountable for achieving sustainability objectives, fostering the integration of sustainable practices into core business operations, and resulting in sustained positive impacts.

Fostering skills development, training, and engaging local subcontractors not only promotes social responsibility but also contributes to local economic growth, particularly benefiting small and medium-sized enterprises (SMEs). This multi-faceted approach addresses social needs while supporting economic development within the community.

Environmental compliance, waste reduction, and prioritization of environmental responsibility in supplier selection are crucial components of sustainable procurement. Mandating bidders to demonstrate expertise in carbon reduction, waste reduction, and recycling mitigates the environmental impact of procurement activities, aligns with regulatory requirements, and sets a high standard for environmentally conscious procurement.

Transparency and stakeholder engagement, emphasized in both cases, build trust and ensure diverse perspectives are considered. Open communication of sustainability goals and involving stakeholders, particularly the local community, fosters a sense of shared ownership of sustainability objectives, leading to better overall project outcomes and a positive reputation.

A culture of continuous improvement, where suppliers share best practices and lessons learned, enhances sustainable procurement practices. This learning approach drives efficiency, effectiveness, and better sustainability outcomes in future procurement activities.

Furthermore, exploring alternative solutions, leveraging expert evaluation, community engagement, and adherence to governance and legal frameworks reinforce a comprehensive sustainable procurement strategy. By embracing these practical implications, stakeholders can establish a responsible and sustainable procurement approach that delivers positive outcomes while contributing to societal betterment, economic growth, and environmental preservation.

5 Summary, conclusions and recommendations

This section of the study paper encompasses a condensed overview of the primary discoveries derived from secondary sources. The conclusions drawn from these findings are closely aligned with the study's predefined objectives. Additionally, the researcher proposes potential recommendations that encompass both the research process and the organizations being examined. Furthermore, the section provides insights into potential areas for future investigation, offering guidance for subsequent researchers interested in exploring the subject matter.

5.1 Summary

Primary focus of this research is to examine the integration of sustainable practices in public organizations and resulting impact on these organizations. This investigation aimed to shed light on the process of incorporating sustainability principles into their procurement practices. The study also intended to explore the various benefits, challenges, and risks associated with sustainable procurement practices. By thoroughly examining these aspects, the research sought to provide a comprehensive understanding of the implications of adopting sustainability-driven procurement processes in public organizations.

To achieve these objectives, the study utilized two carefully selected case studies. These case studies served as practical examples, offering insights into how sustainable procurement practices were implemented in real-world scenarios. By analyzing the results and impacts of these case studies, the research aimed to derive broader conclusions and generalize findings applicable to a wider range of public organizations.

In this chapter, we will delve into the extensive effects of sustainable procurement practices. We'll travel over how adoption of sustainable procurement principles affects various aspects of public organizations. This includes examining how it can improve environmental outcomes, drive economic efficiencies, enhance social responsibility, and contribute to the overall mission and goals of these organizations.

Moreover, we will thoroughly discuss the advantages that can be realized through the adoption of sustainable procurement practices. These benefits may include cost savings, reduced environmental footprint, enhanced reputation, increased innovation, and the creation of a more resilient and sustainable supply chain.

However, we'll also acknowledge the challenges and risks inherent in implementing sustainable procurement practices. These challenges may involve resistance to change, higher initial

costs, possible disturbances in supply chain, and need for increased collaboration and coordination among various stakeholders.

By analyzing the case studies and exploring these diverse aspects, we aim to offer a complete perspective of the effects of sustainable procurement practices on public organizations. This broader understanding will be instrumental in driving further adoption of sustainability practices in the procurement processes of public organizations, contributing to both their individual success and the advancement of sustainable practices on a larger scale.

5.2 Key findings

The case studies of "YORbuild Sustainable Construction" and "USA-Sustainable Waste Transport" reveal a set of generalized key findings that underscore the essence of sustainable procurement practices. These findings offer crucial insights into establishing procurement processes that prioritize environmental, social, and economic sustainability. Both cases highlight the significance of inclusivity by creating equal opportunities for various stakeholders. YORbuild's approach, involving division into lots, promotes fairness between large corporations and SMEs, while the USA's waste transport initiative considers inputs from diverse transportation methods to devise a comprehensive solution.

Engaging stakeholders emerges as a pivotal factor in sustainable procurement. YORbuild actively involves bidders in commitments that contribute to relevant sectors, and the USA's waste transport project facilitates public engagement to address societal aspects of waste transportation. Long-term planning is also paramount, as demonstrated by the extended contractual agreements of both projects—YORbuild's 4-year commitment and Metro's 10-year contract—ensuring lasting positive impacts on development. Flexibility within contracts is a recurring theme, with YORbuild's call-off methods offering adaptability and Metro's consideration of various transportation options enabling tailored solutions. Both case studies emphasize accountability and measurement, as YORbuild establishes industry baselines for social responsibility and Metro evaluates proposals based on specific criteria to ensure commitment fulfillment.

Environmental considerations are central to both projects, with YORbuild focusing on carbon reduction and waste management evaluations, while Metro prioritizes environmental protection and minimal impact in its waste transport endeavor. Additionally, economic development features prominently, as YORbuild involves local subcontractors and supply chains, and

Metro integrates local businesses, social enterprises, and community groups, fostering economic growth.

Collaboration emerges as a linchpin in sustainable procurement practices. YORbuild encourages cooperation among local authorities and diverse organizations, while Metro collaborates with different groups, companies, and people to forge a sustainable region. Transparency is another pivotal aspect, evident in YORbuild's transparent evaluation process and Metro's public engagement initiatives, fostering clear decision-making processes.

A balanced approach encompassing environmental, social, and economic dimensions is the overarching principle of both projects. This equilibrium ensures that sustainable procurement practices yield positive outcomes across multiple facets of development. In essence, these generalized key findings offer invaluable insights into the intricate tapestry of sustainable procurement, highlighting the importance of inclusivity, stakeholder engagement, long-term planning, flexibility, accountability, environmental consciousness, economic development, collaboration, transparency, and a holistic approach to achieving sustainable outcomes in procurement endeavors.

5.3 Research Limitations and Future Research

The presented case studies, while valuable, come with several important limitations that warrant careful consideration when interpreting their findings. First and foremost, it's essential to recognize that these studies have a specific regional focus. One is centered around the YORbuild sustainable construction initiative in Yorkshire and Humber, UK, while the other examines the waste transport project under the oversight of the Metropolitan Regional Government of Portland, Oregon, USA. As such, the applicability of the insights derived from these cases to other regions with distinct socio-economic, environmental, and regulatory contexts may require adaptation to suit local conditions. This regional specificity underscores the importance of considering local nuances when implementing similar sustainability initiatives elsewhere.

A temporal limitation also exists, given the case studies' knowledge cutoff of September 2021. The evolving nature of policies, regulations, technologies, or market dynamics beyond this point may not be fully accounted for in the analysis. Therefore, to ensure the continued relevance of the findings, it's crucial to verify their alignment with any developments or changes that have occurred since the time of the case studies. Staying up-to-date with current trends

and shifts in the sustainability landscape is crucial for contextualizing the insights and their implications.

While the case studies do address environmental, social, and economic dimensions of sustainability, it's important to acknowledge that other aspects, such as cultural and governance considerations, have received relatively less attention. A more comprehensive exploration that encompasses a broader range of sustainability dimensions would provide a greater comprehensive comprehension of the overall impact of sustainable procurement initiatives.

Moreover, the depth of the analysis in the case studies is contingent on the availability of detailed data on the projects. Limitations in data accessibility may have influenced the extent to which certain aspects, such as specific data points, metrics, or qualitative information on the projects' long-term effects, could be thoroughly examined. This limitation underscores the need for robust data collection and reporting practices in future sustainability initiatives.

Lastly, the transferability of the practical implications from these case studies to organizations or regions with differing capacities, resources, or stakeholder dynamics may necessitate thoughtful adaptation. Recognizing the uniqueness of each context is crucial to ensuring the successful implementation of recommended strategies and best practices.

To address these limitations, future research should consider various avenues for deeper exploration. Longitudinal studies that assess the long-term impact of sustainable procurement initiatives would provide valuable insights into the durability and effectiveness of sustainability practices. Comparative analyses involving diverse regions and sectors would help to find context-dependent elements that affect success and challenges of such initiatives, allowing for the identification of effective practices that can be adapted across different contexts. Furthermore, a deeper understanding of stakeholder engagement strategies, legal and governance frameworks, and alternative transportation methods can significantly enhance the implementation and effectiveness of sustainable procurement practices. Exploring sustainability initiatives in sectors beyond construction and waste transport, incorporating emerging technologies, and evaluating sustainability in different industries can expand the application of sustainable procurement principles. Addressing these limitations and pursuing these future research areas will pave the way for a more comprehensive understanding of sustainable procurement practices and drive impactful sustainability initiatives across sectors and regions.

5.4 Conclusion and Recommendation

The research conducted on sustainable procurement practices in both the YORbuild Sustainable Construction project in the UK and the sustainable waste transport initiative led by the Metropolitan Regional Government of Portland in the USA offers crucial insights into the transformative potential of sustainability-focused procurement. These case studies underscore that sustainable procurement is not a mere business practice; it is a strategic imperative that has far-reaching positive effects on various dimensions of society.

One of the most significant values of sustainable procurement is its alignment with broader societal and environmental goals. Traditional procurement often prioritizes cost and efficiency, but sustainable procurement expands this perspective. It prioritizes the well-being of communities, the reduction of environmental impact, and the advancement of sustainable development as core objectives. By integrating these principles into procurement processes, organizations contribute to the greater good, beyond just their project outcomes.

The environmental impact of sustainable procurement cannot be overstated. Both case studies demonstrate that such practices significantly reduce the environmental footprint of projects. Whether through carbon reduction techniques in construction or waste management and recycling, sustainable procurement actively contributes to eradicating the bad effects of construction and waste transport on the environment. This approach ensures that projects are not just about immediate benefits but also about safeguarding the planet for future generations.

Moreover, sustainable procurement practices promote social inclusivity and economic growth, as evident in the YORbuild framework. By fostering employment opportunities, apprenticeships, and vocational qualifications, these initiatives empower individuals, enhance the social fabric of construction sector, and support development of local economies. The community engagement aspect of the Portland waste transport project ensures that social considerations are at the forefront, reinforcing the positive impact on society.

The broader implications of these case studies are profound. They demonstrate that the sustainable procurement is a powerful tool for organizations, governments, and society as a whole to drive positive change. By prioritizing sustainability in procurement, we not only achieve project goals but also set the stage for a more responsible and sustainable future. These findings serve as a testament to the transformative potential of sustainable procurement.

The potential benefits for organizations embracing sustainable procurement practices are numerous. This includes a tangible reduction in the environmental footprint of projects, improved social outcomes through skill development and community engagement, and the strength-

ening of local economies by involving local businesses and social enterprises. The collaborative aspect of sustainable procurement also fosters enhanced cooperation among stakeholders, leading to better outcomes for everyone involved.

In conclusion, the value of these findings lies in providing a comprehensive roadmap for organizations to embrace sustainable procurement. This roadmap enables organizations to contribute significantly to environmental preservation, societal well-being, and economic growth while achieving their project goals. The realization that sustainable procurement is not just about procurement itself, but a holistic approach to creating a more sustainable and prosperous future for all, highlights its strategic imperative. The collective adoption of sustainable procurement practices can lead us towards a brighter, more sustainable tomorrow.

The profound impact of sustainable procurement, as exemplified by the YORbuild Sustainable Construction project and the waste transport initiative led by the Metropolitan Regional Government of Portland, extends far beyond the confines of specific projects. These case studies provide a powerful testament to the multifaceted benefits that sustainable procurement brings to society, the environment, and the economy.

First and foremost, the emphasis on sustainability reflects a shift in mindset from traditional procurement practices that often prioritize short-term gains to a more holistic approach that considers long-term implications. This transition has tangible effects on the environment. By incorporating strategies to reduce carbon emissions, manage construction waste, and promote renewable energy, these projects demonstrate a commitment to environmental responsibility. This approach not only mitigates negative impacts but also contributes to broader climate and sustainability goals, setting an example for others to follow.

The social inclusivity promoted by sustainable procurement is equally noteworthy. The active involvement of local communities, the support for skill development, apprenticeships, and the engagement of minor and mid-sized companies (SMEs) reflect a commitment to social well-being. These initiatives foster a more diverse and resilient workforce, empower local businesses, and create opportunities for individuals across different age groups, thereby strengthening the social fabric and promoting a more equitable society.

Economically, the sustainable procurement practices outlined in these case studies lay the foundation for vibrant local economies. By engaging local subcontractors, businesses, and social enterprises, there is a positive ripple effect that generates economic growth. Additionally, the emphasis on responsible procurement can result in money savings for a lengthy period, as efficiencies in resource use and waste reduction contribute to overall project effectiveness.

The significance of these findings extends beyond the specific projects examined. They provide a roadmap for organizations, whether public or private, to navigate the path of sustainable procurement. By adding environmental, social, and economic features into their procurement strategies, entities can also make a lasting positive impact. Furthermore, the collaborative nature of these initiatives demonstrates that sustainable procurement is a collective effort, involving governments, businesses, communities, and other stakeholders in a shared commitment to a better future.

In conclusion, the exploration of these case studies is not merely an academic exercise but a call to action. The lessons learned highlight the profound importance of embracing sustainability as a guiding principle in procurement. This commitment has the power to transform the way we approach projects, reshape industries, and contribute to the well-being of our planet and its inhabitants. As we move forward, the journey towards sustainable procurement is a path worth taking, and the outcomes of these endeavors inspire us to prioritize sustainability in all aspects of our procurement practices. This collective effort will ultimately lead us to a brighter, more sustainable tomorrow for generations to come.

Bibliography

- Abdul Aziz, M. (2013). Towards a Sustainable Procurement in Ghana. Unpublished Thesis.
- Amann, M., K. Roehrich, J., Eßig, M. Harland, C. (2014). "Driving sustainable supply chain management in the public sector: The importance of public procurement in the European Union". *Supply Chain Management: An International Journal*, 19(3), pp. 351-366.
- Barth, R., Erdmenger, C. Guenther, E. (2005). *Environmental Friendly Public Procurement*, Heidelberg.
- Berry, C. (2011). *The Sustainable Procurement Guide: Procuring Sustainably Using BS 8903*. British Standard Institute.
- Bogdan, R.C., Biklen, S.K., (1998). *Qualitative Research for Education: An Introduction to Theory and Practice*, Alley and Bacon
- Boomsma. (2008). Sustainable procurement from developing countries. Practices and challenges for business and support agencies. Bulletin 385, Amsterdam: KIT publishers
- Borgatti, S., 2003. The network paradigm in organizational research: a review and typology. *J. Manage.* 29, pp. 991–1013.
- Brammer, S. Walker, H., 2011. Sustainable procurement in the public sector: an international comparative study. *International Journal of Operations Production Management*, 31(4), pp.452–476.
- Bratt, C.; Hallstedt, S.; Robèrt, K.-H.; Broman, G.; Oldmark, J. (2013): Assessment of criteria development for public procurement from a strategic sustainability perspective. In *Journal of Cleaner Production* (52), pp. 309–316.
- CALL-OFF ORDERS : Awareness of call-off orders and their use (2010), Available online: <https://documents.manchester.ac.uk/display.aspx?DocID=8182#:~:text=A%20Call%2Doff%20Order%20is,a%20range%20of%20dispersed%20sites>) (Accessed 6 August 2023)
- Carl Abbott, June 15 2022, Metro Regional government, Available online: <https://www.oregonencyclopedia.org/articles/metro/> (Accessed 7 August 2023)
- Carter, C., Ellram, L. and Ready, K. (1998). Environmental Purchasing: Benchmarking Our German Counterparts, *International Journal of Purchasing and Materials Management*, No. November, pp. 28–38.

Chartered Institute of Purchasing and Supply (2009). Whole Life Costing: The CIPS Position and What the Buyer Needs to Know. Hnad Book. Chartered Institute of Purchasing and Supply (2012). Sourcing in Procurement and Supply, Handbook

Commission of the European Communities, 2003. COM (2003) 302 final.

Council of the European Union, 2006. 10917/06e Renewed EU Sustainable Development Strategy

Council of the European Union, 2006. 10917/06e Renewed EU Sustainable Development Strategy.

DEFRA (2006), Procuring the Future – The Sustainable Procurement Task Force National Action Plan, DEFRA, London.

Dittrich, M., Bringezu, S. (2010). The physical dimension of international trade. Ecological Economics, 69 (9), 1838–1847.

Edler, J. Georghiou, L. 2007, "Public procurement and innovation—Resurrecting the demand side", Research Policy, vol. 36, no. 7, pp. 949-963.

Environmental Protection Agency (EPA) (2000), “State and local government pioneers: how state and local governments are implementing environmentally preferable purchasing practices”, available at: www.epa.gov/oppt/epp (accessed 29 July 2023).

Erdmenger, C. (2003). Introduction. In C. Erdmenger (ed.), Buying into the Environment: Experiences, Opportunities and Potential for Eco-Procurement. Greenleaf Publishing, Sheffield, UK, pp. 9-17

European Commission (2011b). Buying Green: Green Public Procurement in Europe. [Online] Available at: http://ec.europa.eu/environment/gpp/pdf/handbook_summary.pdf. (Accessed on 30 July 2023).

European Commission, 2016. DG GROW G4 - Innovative and e-Procurement - [online]- Available at: <http://ec.europa.eu/DocsRoom/documents/20679/attachments/1/translations/en/renditions/native> (Accessed 24 July 2023)

European Commission. (2004). Buying Green! A Handbook on Environmental Public Procurement.

European Union (2014). Directive 2014/24/EU of the European Parliament and of the Council of 26 February 2014 on public procurement and repealing Directive 2004/18/EC. [online] European Union.

GOV.UK (http://www.direct.gov.uk/en/EducationAndLearning/QualificationsExplained/DG_10039029) (Accessed August 6 2023)

IISD (International Institute for Sustainable Development). (2007). State of Play in Sustainable public procurement. [Online] 97 Available at: www.iisd.org/pdf/2007/state_procurement.pdf. (Accessed on 30 July 2023).

instrument: cost effectiveness. *Environmental Economics*, 4(4), pp.75–83.

Islam, M. M. and Siwar, C. (2013). A Comparative study of public sector sustainable procurement practices, opportunities and barriers. *International Review of Business Research Papers* Vol.9. No. 3. March 2013 Issue.

Kaye Nijaki, L. Worrel, G., 2012. Procurement for sustainable local economic development. *International Journal of Public Sector Management*, 25(2), pp.133–153.

Kiiver, P., Kodym, J., 2014. The practice of public procurement: tendering, selection and award. *Intersentia*

Koplin J, Seuring S, Mesterharm M. (2007). Incorporating sustainability into supply management in the automotive industry – the case of the Volkswagen AG. *Journal of Cleaner Production* 15(11/12): 1053–1062.

Kothari, C. (2004). *Research Methodology: Methods and Techniques* 2nd ed.. London, Pitman Publishers.

Lee, S. M., J. S. Rha, et al. (2013). "Pressures affecting green supply chain performance." *Management Decision* 51(8): 1753-1768.

Linton J.D, Klassen R, Jayaraman V. (2007). Sustainable supply chains: an introduction. *Journal of Operations Management* 25(6).

Lundberg S. Marklund P.-O., 2013. Green public procurement as an environmental policy

Lundberg, S. Marklund, P.-O., 2018. Green public procurement and multiple environmental objectives. *Economia e Politica Industriale*, 45(1), pp.37–53.

Marron, D. (2003). Greener Public Purchasing as an Environmental Policy Instrument. *OECD Journal on Budgeting*, 3 (4): 71-102.

McCrudden, C. (2004) Using public procurement to achieve social outcomes, *Natural Resource Forum*, 28(4), 257-267.

McCrudden, C. (2009): Corporate Social Responsibility and Public Procurement. In D. McBarnet,

Merriam, S. (1995). What Can You Tell From An N of 1?: Issues of Validity and Reliability in Qualitative Research. *PAACE Journal of Lifelong Learning*, 4, pp.51-60.

Meto chapter, 1992, Available online: <https://www.oregonmetro.gov/metro-character> (Accessed 7 august 2023)

Murray, G.J. (2001), “Improving purchasing’s contribution: the purchasing strategy of buying council”, *The International Journal of Public Sector Management*, Vol. 14 No. 6, pp. 391-410.

NEC3, (<http://www.neccontract.com/>) (Accessed 6 August 2023)

OECD (2009), *OECD in Figures*, OECD, Paris.

Parikka-Alhola, K. (2008). Promoting environmentally sound furniture by green public procurement. *Ecological Economics*, 68(1-2), pp.472-485.

PPPAA. (2011). *The Federal Democratic Republic of Ethiopia, Federal Government Public Procurement manual 2011*.

PPPAA. (2014). *Public Procurement and Property Administration Agency 2014 Annual Report*, 12 May 2014.

Preuss, L. (2007): Buying into our future: sustainability initiatives in local government procurement. In *Bus. Strat. Env.* 16 (5), pp. 354–365.

Preuss, L. (2007): Buying into our future: sustainability initiatives in local government procurement. In *Bus. Strat. Env.* 16 (5), pp. 354–365.

Procurement tactics PT, Available online: <https://procurementtactics.com/sustainable-procurement-requirements/> (Accessed 7 August 2023)

Proxima Group, <https://www.proximagroup.com/the-advantages-of-a-sustainable-procurement-approach/> (Accessed 7 August 2023)

Recycling, 112(C), pp.37–44.

responsibility and the law. Cambridge: Cambridge University Press. responsibility, 2nd edn, Brookings Institution Press, Washington, D.C.

Roland Berger, JUNE 9, 2022 By Marcus Shuller Available Online: <https://www.rolandberger.com/en/Insights/companies-can-benefit-from-sustainable-procurement.html> (Accessed 7 August 2023)

Roos, R. (2012). *Sustainable Public Procurement: Briefing Note*. United Nations Development Program .

Saunders, M, Lewis, P. and Thornhill, A. (2007). *Research Methods for Business Students*. 4th ed. England. Pearson Education Limited

Seitz M.A, Wells P.E. (2006). Challenging the implementation of corporate sustainability: the case of automotive engine remanufacturing. *Business Process Management Journal* 12(6): 822– 836.

Steurer, R. and A. Konrad (2007). Sustainable public procurement in EU member states — The survey results, 15th meeting of the EU High-level Group on CSR, Brussels, [Online] Available online: http://www.sustainability.eu/pdf/csr/Sustainable%20Public%20Procurement%20in%20EU_survey%20results.ppt. (Accessed 5 August, 2023).

sustainable public procurement and sustainable business models. Resources, Conservation

SwedWatch (2015). Healthier Procurement Improvements to working conditions for surgical instrument manufacture in Pakistan. [online] Viveka Risberg. Available at:https://swedwatch.org/wp-content/uploads/2016/12/healthier_procurement.pdf Accessed 26 July. 2023.

The Dynamics of Child Labour in Pakistan, WailayLog 2018(<https://wailaylog.com/child-labour-in-pakistan-dynamics/>)

Third Sector, Scottish Government, Available online: <https://www.gov.scot/policies/third-sector/#:~:text=The%20third%20sector%2C%20which%20includes,and%20contributes%20to%20economic%20growth>. (Accessed 6 august 2023)

Tregidga H, Milne M.J. (2006). From sustainable management to sustainable development: a longitudinal analysis of a leading New Zealand environmental reporter. *Business Strategy and the Environment* 15(4): 219–241.

UNEP. (2012). The Impacts of Sustainable Public Procurement: Eight Illustrative Case Studies Available online:<https://wedocs.unep.org/20.500.11822/32156>. (Accessed 6 August 2023)

United Nations Environment Programme. (2010a). Capacity Building for Sustainable Procurement, Issue 3.

United Nations Environment Programme. (2010b). Capacity Building for Sustainable Procurement, Issue 4.

United Nations Environment Programme. (2011). Sustainable Public Procurement Newsletter, Issue No.

United Nations. (1992). United Nations. In United Nations Conference on Environment and Development (UNCED) : Agenda 21. [electronic]. Rio de Janeiro: United Nations. Available via:<http://sustainabledevelopment.un.org/content/documents/Agenda21.pdf>. (Accessed 28 July 2023)

United Nations. (2002). Report of the World Summit on Sustainable Development. A/CONF.199/20. [electronic]. New York: United Nations. Available via:http://www.un.org/jsummit/html/documents/summit_docs/131302_wssd_report_reissued.pdf. (Accessed 29 July 2023)

United Nations. (2008). Sustainable Development Innovation Briefs, Issue 5. [Online] Available at:<http://www.un.org/esa/sustdev/publications/innovationbriefs/>. (accessed 4 August, 2023)

Uyarra, E. and Flannigan, K. (2010), "Understanding the innovation impacts of public procurement", *European Planning Studies*, Vol. 18 No. 1, pp. 123-43.

Vogel, D. ebrary, I., 2005. The market for virtue: the potential and limits of corporate social Voiculescu, T. Campbell (Eds.): The new corporate accountability. Corporate social

Walker, H. Brammer, S., 2009. Sustainable procurement in the United Kingdom public sector. *Supply Chain Management: An International Journal*, 14(2), pp.128–137.

Walker, H., Brammer, S., 2012. The relationship between sustainable procurement and eprocurement in the public sector. *Int. J. Prod. Econ.* 140, 256–268.

Witjes Lozano, 2016. Towards a more Circular Economy: Proposing a framework linking

World Trade Organization. [n.d.]. Government Procurement: Parties and Observers to the GPA. [Online] Available at: http://www.wto.org/english/tratop_e/gproc_e/memobs_e.htm. (Accessed 27 July 2023).

YORbuild – <http://yorbuild.com/>, (<https://companycheck.co.uk/company/04022099/YORBUILD-LIMITED/companies-house-data>) (Accessed 6 August 2023)

Zhu, Q. Sarkis, J. 2004, "Relationships between operational practices and performance among early adopters of green supply chain management practices in Chinese manufacturing enterprises", *Journal of Operations Management*, vol. 22, no. 3, pp. 265-289.

Zhu, Q. Sarkis, J. 2007, "The moderating effects of institutional pressures on emergent green supply chain practices and performance", *International Journal of Production Research*, vol. 45, no. 18-19, pp. 4333-4355.

Zhu, Q., Sarkis, J. and Lai, K. (2013). Institutional-based antecedents and performance outcomes of internal and external green supply chain management practices. *Journal of Purchasing and Supply Management*, 19(2), pp.106-117.

Abbreviations

CIPS: Chartered Institute of procurement and Supply

CSR: Corporate Social Responsibility

FDRE: Federal Democratic Republic of Ethiopia

KPI: Key Performance Indicators

NGO: Non-Governmental Organization

OECD: Organization for Economic Cooperation and Development

PPPAA: Public Procurement and Property Administration Agency

SMEs: Small and Medium Enterprises

SPP: Sustainable Public Procurement

UN: United Nations

UNEP: United Nations Environment Programme

WTO: World Trade Organization

Declaration of own work

I declare that the work for this academic paper/thesis was solely undertaken by myself and that no help was provided from other sources than allowed. References have been included for any sections of the paper that use quotations or describe an argument or concept developed by another author.

Leverkusen, 22.08.2023

Nikhil Udupa Lagadamane Srinivas