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Article

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Article

Ensuring Sustainability: Leadership Approach Model for Tackling Procurement Challenges in Bulgarian Higher Education Institutions

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Abstract: At present, higher education institutions (HEIs) are increasingly expected to incorporate sustainability into all aspects by integrating it not only into education and research but also into operational processes, including procurement. In some cases, national legislation hinders public universities from adhering to sustainability requirements. This paper aims to introduce a leadership approach model that enables public universities to overcome the constraints imposed by the legal framework. To explore the relatively new area of Sustainable Public Procurement (SPP), where still little is known, the Technical University of Sofia (TU-Sofia) was chosen as a testbed for the case study. Firstly, the challenges posed by external factors—such as non-discrimination principles stated in Bulgaria's Public Procurement Act (PPA) and internal incentives at TU-Sofia for sustainable procurement initiatives were identified. Secondly, based on the findings, the recommendation is to adopt a leadership approach model by developing and implementing a Sustainable Public Procurement Policy (SPPP) tailored to harness the university's sustainable development drivers while complying with legislative requirements. As a result of the leadership approach model implementation, the university will not only enhance economic benefits but also mitigate risks and drive transformative change in procurement management processes, contributing to broader societal and environmental goals.

Keywords: sustainable procurement; higher education institutions; leadership approach

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1. Introduction

Not so long ago, the higher education system was seen in the context of sustainable development primarily as a mediator of research to be transformed and transferred as knowledge. However, universities are now increasingly evaluated based on their contribution as institutions to the accomplishment of the Sustainable Development Goals (SDGs). Hence, universities must incorporate sustainability practices into all aspects of the educational process (UNESCO 2009) by integrating sustainability not only into education and research but also into other activities (European Commission 2021). As a result, they have adjusted and implemented their practices to become leaders in promoting sustainable development (SD) (Filho et al. 2020). Some authors emphasize the importance of universities in shaping public perceptions and practices concerning SD. To achieve this goal, they should conduct activities taking into account the needs of both present and future generations, and aligning the entire university system towards training students who will be able to manage organizations responsibly towards sustainable societal models (Lozano et al. 2013; Adams 2013). Numerous endeavors have been made to integrate

SD into HEIs, (Elliott and Wright 2013), acknowledging their function as open systems that actively interact with the environment. This integration occurs at multiple levels, ranging from the university's dedication to sustainable development as a fundamental aspect of its mission and vision, as highlighted by Lee et al. (2013), to its influence on regional development, as examined by Dlouhá et al. (2013), and even on a worldwide scale, such as the mitigation of greenhouse gas emissions, as explored by Klein-Banai and Theis (2013). From an analysis of the literature and practice, it is evident that the efforts made are targeted either at a small part of the elements of the HEI system individually or at a small group of elements, which is not sufficient for the universities to function sustainably. This can be attributed to the fact that HEIs are usually very complex systems (Denman 2005). Therefore, for SD to have a positive impact on society, it must be based on holistic and systemic thinking and action (Ferrer-Balas et al. 2009; Koester et al. 2006). Currently, there is a limited number of studies about how public organizations, including HEIs, can use Sustainable Public Procurement (SPP) to implement sustainable development. However, there is a growing focus on this subject. SPP has become a topic of increasing interest, and one of the reasons for that could be the ranking systems and quality assurance systems criteria that universities have to meet (European Commission 2019). Studies conducted by authors such as (Islam et al. 2017; McMurray et al. 2014) have shown that the implementation of Sustainable Public Procurement policies and practices in public organizations is low in less developed countries. One of the reasons for this is the existing legislation. Despite regulatory prerequisites that outline the inclusion of sustainability considerations in purchasing decisions as an essential parameter for achieving long-term sustainable development (Filho et al. 2021; Yturzaeta 2020), the adoption of such policies and practices still lags. According to Islam et al. (2017), the focus of existing SPP policies and practices is focused on several aspects such as reducing packaging and waste, evaluating suppliers on their environmental responsibility and/or the environmental performance of the products, and reducing carbon emissions from transportation.

Based on the literature and empirical insights, this paper addresses the challenges of integrating sustainability into the purchasing practices of goods and services within state HEIs in Bulgaria. The study aims to identify key challenges and constraints to achieving sustainable procurement of goods and services in HEIs and address these barriers through a leadership approach by adopting policy development.

As a result, the study introduces a leadership model that allows public universities to overcome the external challenges imposed by the legal framework by developing and adopting a Sustainable Public Procurement Policy (SPPP). It is tailored to harness the internal university's sustainable development drivers while complying with legislative requirements. A procedure for developing the SPPP is proposed and implemented in TU-Sofia. It consists of six sequential steps. The first three steps of the procedure concern the analysis of external and internal constraints and incentives, prioritizing the most relevant ones, and defining the scope, objectives, expected results, and policy principles. In the fourth step, legal compliance measures and implementation responsibilities are developed. The measures address three main areas related to reducing costs throughout the product life cycle, engaging all university staff, and increasing awareness and knowledge in the context of sustainability demand. Steps five and six concern impact evaluation and monitoring. Implementing the leadership approach model enables the university to enhance economic benefits, mitigate risks, and drive transformative change in procurement management processes, contributing to broader societal and environmental goals.

The study contributes to the previous literature by identifying the fundamental conflict between the legal procurement principles of non-discrimination and free competition and the sustainability goals of public universities. While the universities have considerable purchasing power that could impact sustainable development, strict legal frameworks limit their ability to incorporate sustainability criteria into procurement. In this context, this research contributes to an emerging stream of research on the importance of extending sustainability efforts in HEIs beyond education and research to include the procurement

management process. It highlights how, to address the challenges posed by external factors, the university needs to adopt a leadership approach to leverage internal incentives. It proposes a leadership approach model for integrating sustainability into the procurement management process, which could serve as a model for other public HEIs facing similar challenges. Last but not least, it suggests that legal frameworks may need to evolve to better support sustainable practices.

2. Evolution and Challenges in HEIs' Sustainable Public Procurement

In today's world, maintaining societal progress without compromising the well-being of future generations is a critical challenge. The widespread adoption of the sustainable development (SD) concept across all aspects of public life presents a complex challenge for all parties involved. Achieving SD requires significant shifts in both the societal mindset and technological and legal frameworks. Among the primary challenges is the paradoxical relationship between the technologies utilized to, for instance, provide access to clean water and electricity for all, and their contribution to greenhouse gas emissions and resource depletion. Often, legal and regulatory barriers hinder businesses from achieving the United Nations' Sustainable Development Goals (SDGs). In this context, there are numerous strategies and tools available to tackle the modern SD demands. Education for SD is recognized as a key element in the search for approaches to address the challenges (UNESCO 1997), which brings the role of universities (HEIs) to the fore (European Commission 2017). HEIs have a "moral obligation to raise the awareness, knowledge, skills, and values needed to create a sustainable future", particularly since they prepare most of the professionals who will play a key role in adapting our society to a sustainable model of living (Cortese 2003). In fact, we can only have a sustainable world if universities actively promote sustainability (Glavič and Lukman 2007). To fulfill their function as educational institutions, universities play an active role in national and international markets by consuming goods and services. The national legislative framework sometimes prevents universities from adhering to the requirements of the SD concept since many of them are public universities and the supplies of goods and services are subject to public procurement regulations.

Public procurement is a process in which public sector organizations, as defined by country-specific legal regulations, award contracts for the supply of goods, services, or works. This process is also known as public tendering and is essentially an administrative procedure. To understand the concept of Sustainable Public Procurement (SPP), it is important to know that it comprises two key aspects—procurement and sustainable development. Procurement refers to the process used by public organizations to purchase goods, and services, or outsource work from private sector businesses. The second component relates to sustainability, which requires organizations to consider the social, economic, and environmental aspects of their activities, respecting the balance between the three dimensions (European Commission 2008; United Nations 2008). Both of these components are subject to government regulation, but very often public sector organizations face several contradictions in the conduct of their activities, which pose some challenges related to compliance with legal provisions and the sustainability of operations.

It is worth noting that the concept of SPP emerged later than public tendering. However, public procurement has been used for many years ago as a tool to encourage the social and economic policies of the countries. For instance, the Indian Industries Act of 1951 required preferential purchase of specific products from domestic manufacturers. Another example is the Korean Veterans Health Service Act of 1981, which mandated the preferential purchase of products made by military veterans in the Republic of Korea. Since then, numerous countries have established laws, policies, and regulations to enhance and encourage the adoption of public procurement in its full dimension, including not only the socio-economic but also the environmental aspects. The incorporation of the Sustainable Development Goals into the procurement of goods, services, or works by public entities is referred to as SPP. This can be defined as a process in which a public organization meets its needs for the supply of goods, services, and/or works in a way that brings long-term value

on a whole-life basis while not only generating benefits for the economy and society but also reducing the harmful impact on the environment (DEFRA 2006; Walker and Phillips 2009). To better understand SPP, it is important to differentiate it from Green Public Procurement (GPP), although these two terms are often used interchangeably. According to the definition given by the European Union, Green Public Procurement (GPP) is a process where public organizations aim to purchase goods, services, and/or works that have a minimal environmental impact throughout their entire life cycle compared to other similar options that would have been purchased otherwise. It is clear from the two definitions that the difference stems from the fact that the concept of SPP is more broad in terms of aspects and includes the socio-economic dimension of SD. Both definitions share the same base principle with reference to the value of money. The costs for purchasing the goods or services can be broken down into the capital cost related to the initial acquisition of the asset and the cost of usage and disposal, which is often referred to as the total cost of ownership. The reason for this is that the cost of acquiring an asset is just a small portion of the overall cost of owning it in practice. Therefore, during the procurement process, organizations should consider the environmental and social impacts, also known as 'externalities', that come with the purchase. This is important to ensure that the purchase provides value for money while also taking into account its impact on society and the planet (Nabhi 2023).

In this context, GPP could be a powerful tool for achieving sustainable production and consumption patterns (Bratt et al. 2013). However, as mentioned earlier, the concept of SPP is larger and encompasses not only environmental, but also social, and economic aspects (Brammer and Walker 2011). The nature of SPP policies and practices is changing, as they are now expanding to include various issues such as environmental management, workplace well-being, non-discrimination of employees, human rights, occupational health and safety, community engagement, and support for local producers and small suppliers. Despite the recognition of the social, environmental, and economic benefits of implementing SPP practices, there is still a lack of common understanding and commitment across the public sector on which both policymakers and procurement managers can build (UNEP 2021).

The first step in integrating procurement into sustainable development implementation was the Marrakech Task Force on Sustainable Procurement (MTF on SPP). It was established in 2005 by the Swiss Government as the first international initiative to promote sustainable procurement at the global level and was one of the seven working groups under the Marrakech Process on Sustainable Consumption and Production, led by UNEP. In 2012, a working group released guidelines that can be used as a methodology for implementing SPP, known as the "SPP approach". This approach was piloted in seven countries between 2009 and 2012. Later, the "SPP approach" was tested in 15 countries, and data were collected to identify problem areas and best practices for improving the methodology. As a result, the methodology was reviewed and republished in 2021 (UNEP 2021). According to the same source, the adoption of SPP has three main incentives based on stakeholder views. These incentives include political commitment, national legislation, and strong leadership within the organization. It is noteworthy that, according to stakeholders, the application of SPP is subject to a top-down policy approach, or in other words, it depends on the top leadership. The organization's competencies in the field of SPP, including staff knowledge and training, legal, environmental, and economic aspects, are also mentioned as highly influential factors. The political commitment to public procurement regulation is crucial, but well-trained practitioners are also significant for its implementation. This enables public organizations, including universities, to integrate SPP into their activities by seeking management solutions at the organizational level. According to the same survey, the two most frequently cited barriers to SPP are the perception that sustainable products and/or services are more expensive than others with the same functions and the lack of expertise in implementing SPP practices.

Depending on the nature of the obstacles identified, different approaches may be used to overcome them. Certain sustainability challenges can be addressed by organizations

themselves. For instance, the shortage of skills and knowledge required to implement SPP practices can be tackled by providing training and promoting knowledge sharing. However, some obstacles, like conflicts of interest that stem from legal provisions, may require more complex solutions. According to surveys, although these barriers are defined as significant and/or permanent, it is revealed that most of them can be overcome over time. Adopting and implementing methodologies based on life-cycle costing (LCC) can play a crucial role in overcoming barriers related to the cost of products and/or services. This is because all organizations are looking for approaches to increase profitability. The positive effect of such a costing methodology can not only affect the organization itself but also the macroeconomic level through fiscal policy as it is analyzed in the Sustainable Procurement Barometer developed by EcoVadis (2019).

A review of the literature reveals that SPP in HEIs is an issue of increasing interest and is studied from different perspectives. Primadasa and Tauhida (2021) developed a twelve-indicators model based on their mutual interrelationship in order to improve the process of SPP in HEIs. Kumar Sahu et al. (2021) studied these issues from the perspective of sustainable supply chain management in emerging economies. The findings show that despite the fact it is considered of great importance, still little is known, especially in terms of empirical or case study research. For a deeper understanding, Sánchez-Flores et al. (2020) suggests the matter be studied from different standpoints, such as sustainable supplier collaboration and sustainable innovation. It has become evident that SPP in public HEIs faces similar challenges to those encountered by other public organizations. Many authors in the literature sources on the subject of SPP in HEIs have identified several obstacles that are generally consistent with those found in public organizations. The following can be highlighted as significant: cost and resource constraints (Preuss 2007); poor awareness, competence, and decentralized purchasing structures, along with tight timelines, conflicting interests, and lack of leadership commitment (McMurray et al. 2014); lack of willingness to adopt these practices linked to the leadership style (Roman 2017); insufficient availability and range of sustainably produced goods and services and difficulties in finding sustainable sources of supply (Brammer and Walker 2011; Walker et al. 2012; Walker and Brammer 2009; Young et al. 2016); and there are no mandatory guidelines available for the implementation of SPP (Gormly 2014). On the other hand, while identifying and analyzing the barriers that hinder the implementation of SPP (Bala et al. 2008; Ferrer-Balas et al. 2009) and Walker and Brammer (2009), Walker and Phillips (2009) found that there is a trend in the literature to focus on the incentives and drivers, to emphasize the positive impact of SPP. For a better understanding of the obstacles and levers for the implementation of SPP, some authors have attempted to categorize them (Tay et al. 2015) and divided them into strategic and operational. Those which fall into the group of "strategic" include the extent to which the SPP strategy aligns with the strategy of the HEIs. "Operational" aspects can include the impact of internal corporate social responsibility policies and the level of sustainability competence within the procurement of goods and services. Other scholars (Walker et al. 2012; Ma et al. 2023) divided them into internal and external from an organization's standpoint. For example, cost reduction, level of leadership commitment, and employee involvement are referred to as internal. The external ones are mainly related to regulatory constraints and customer requirements. According to some authors, if the factors that facilitate or hinder the implementation of SPP are examined more thoroughly, it might be discovered that with the right measures in place, many of the obstacles can be turned into opportunities. This can enhance the capacity of HEIs to act as SPP promoters. Such measures include the following: the product life-cycle costs; change in leadership attitude; level of competence of employees involved in SPP; and level of stakeholder engagement (Leal Filho et al. 2019). Leadership has been seen as an internal factor of great importance. Visser and Courtice (2012) explore the nature of sustainability leadership and develop a model of sustainability leadership based on the context, personal characteristics, and activities. From a business leadership standpoint, Strand (2014) finds that corporate sustainability positions in top management are created to

address crises or leverage opportunities, reflecting strategic leadership's role in integrating sustainability into corporate governance. These positions help embed sustainability into organizational practices through the establishment of formal structures and processes, ensuring sustained focus on sustainability even if the leadership role is later removed. In the research of Casarejos et al. (2017), they develop a comprehensive conceptual framework, strategic actions, and an assessment scheme to help higher education institutions achieve sustainability goals, effectively integrating global guidelines and providing a practical tool for performance evaluation. This approach is validated as both practical and robust, facilitating the measurement and enhancement of sustainability in HEIs.

3. Materials and Methods

The choice of the leadership approach as a methodology for embedding sustainability in the procurement management process at TU-Sofia can be justified by the fact that leadership is increasingly being promoted as a critical factor for embedding sustainability, both in the literature and in practice, as stated in Anane-Simon and Olusegun Atiku (2023). The results of the study indicate that inclusive leadership supports sustainability by stimulating creativity, improving organizational performance, and promoting social and environmental responsibility. To achieve the SDGs, organizational leaders must manage resources wisely, adhere to ethical principles, and focus on long-term goals without compromising core values (Burns et al. 2015).

In the context of public HEIs, this could not happen without considering the procurement management process. The role of leadership is critical to maintaining high levels of engagement, which is essential for future success (Niță and Guțu 2023). Achieving sustainable development within HEIs requires a holistic approach where managers are responsible for the ongoing planning, implementation, and monitoring of strategies and policies that can be put into practice, including sustainable procurement. After all, strong leadership, a well-structured process of sustainable procurement, and the commitment of all relevant departments, staff, and stakeholders are critical to ensure that sustainable procurement contributes to the achievement of the SDGs at both the institutional and broader levels.

The case study methodology has been widely used to explore the different aspects of the problems related to sustainability implementation in HEIs. Hussain and Albarwani (2015) use a case study to explore leadership in higher education in Oman, focusing on how Sultan Qaboos University integrates sustainability into its curriculum, research, practical projects, and community development. The university leaders outline concrete steps taken to promote sustainability. They highlight their role in driving educational change and promoting sustainability not only in the university but also at the national level. The study of Novawan and Aisyiyah (2020) is in line with these findings. Through case studies conducted between 2012 and 2014, they examine curriculum change leadership at Politeknik Negeri Jember (POLIJE), a pilot institution for the Indonesian Qualifications Framework. The authors highlight the role of senior and middle leaders in navigating the complexities of curriculum development in the context of globalization and democratization in higher education. The study found that while senior leaders used a transformational leadership model, middle leaders used less hierarchical approaches, with both levels needing to focus more on organizational learning to support effective change and sustainable development. A case study conducted by Bantanur et al. (2015) at the Indian Institute of Technology, Roorkee, complements the previous ones by revealing that students prioritized environmental factors over governance factors, and both factors were considered more important than education and research in terms of campus sustainability. These findings suggest that integrating environmental considerations into management and governance strategies can enhance an institution's sustainability efforts.

To outline the challenges and opportunities in integrating sustainability in HEI (El Bedawy 2014) focuses on the integration of sustainable development in higher education in Egypt, using the sustainable development of the University of Heliopolis as a model.

The case study of Heliopolis University illustrates how sustainable development can be integrated into higher education, providing insight into the challenges, opportunities, and recommendations for advancing sustainability in the higher education sector. In the same context, Awuzie and Emuze (2017) examine the commitment of South African universities to integrate teaching, research, and community engagement with the sustainable development (SD) agenda. The authors argue that although higher education institutions (HEIs) are increasingly expected to play a leadership role in sustainable development, there is a lack of research that identifies specific drivers for SD implementation, particularly in developing countries such as South Africa. To explore these drivers, a single case study was conducted at the Central University of Technology (CUT), using semi-structured interviews and document review. The study used purposive snowball sampling to select interviewees based on their involvement in the implementation of CUT's sustainability agenda. Thematic analysis of the interview data revealed a consensus among the participants that while a variety of factors influence sustainability efforts, cost reduction is the most important factor for the effective implementation of the sustainability program at CUT.

Wright et al. (2022) used a case study approach to examine how Wingate University developed its Collaborative for the Common Good (CCG) to align with the global Sustainable Development Goals (SDGs). The case study demonstrates that fostering a culture of collaboration in higher education institutions (HEIs) can help them address their unique challenges and position them as "change-maker" universities that effectively engage with students and external stakeholders, even in the face of challenges such as those amplified by COVID-19.

Elmassah et al. (2022) present a framework for sustainability assessment (SA) in higher education institutions (HEIs) by examining a case study involving HEIs in Germany, Japan, and Egypt. The case study, which includes semi-structured interviews with staff at Cairo University and an analysis of university websites and reports, develops a new framework for assessing SD. This framework, which covers strategic leadership, student support, staff competencies, stakeholder engagement, and sustainable practices on university campuses, aims to guide HEIs in supporting their countries' SDG commitments. The findings suggest that Cairo University could benefit from adopting successful practices from the University of Lüneburg and the University of Tokyo, and aligning more closely with Egypt's Vision 2030 for higher education.

A review of the literature on the implementation of sustainability in HEIs shows that useful practices applicable to other HEIs with the same characteristics can be derived from case studies. The case study methodology was chosen for this research due to its ability to provide an in-depth and practical understanding of the issue. It is also clear that issues related to the implementation of sustainable procurement are a relatively new problem that has not been addressed in depth from both a scientific and applied perspective, but is an essential component of the sustainable transformation of higher education institutions and the establishment of their leadership role in achieving SDGs. Therefore, the authors believe that a case study would be appropriate due to the fact that the findings would be applicable to all public universities facing the same regulatory problems.

Grounded theory was employed to systematically generate insights from the data gathered at TU-Sofia, enabling the development of a leadership approach model based on internal incentives that help public universities overcome legal constraints. By examining real-life instances of the development and implementation of SPPP, the grounded theory approach ensures that the measures derived are directly applicable to practical scenarios, enhancing their relevance and utility. This method allows for the emergence of theories grounded in empirical data, providing a robust framework for understanding and addressing the challenges of SPP in public HEIs.

4. SPP Challenges in TU-Sofia

TU-Sofia was selected for the case study due to its status as a publicly funded university with considerable purchasing power. The number of people involved in the activities

of TU-Sofia, including students, and academic and non-academic staff, exceeds 13,000. According to data from the National Statistical Institute of Bulgaria, 13.4% of the country's population lives in settlements with a similar average number of inhabitants. TU-Sofia also has a large number of buildings with different functions, the maintenance and operation of which require considerable resources. The total floor area of the buildings is 394,837.7 sq.m and they are situated in various cities in the country. Figure 1 shows the number of different types of buildings and people involved in the educational processes, both are key factors influencing the achievement of sustainable development.

Figure 1. Technical University of Sofia as an object of the case study—numerical data.

These characteristics make TU-Sofia an important market and economic actor in Bulgaria, with a significant impact on SD. This impact can be found in various aspects. In terms of the role of TU-Sofia as a consumer of goods and services, it can significantly influence SD by encouraging suppliers to offer sustainable products and develop sustainable policies and practices, which will lead to a change in supply chain sustainable practices. In the context of SPP, best practices entail a set of measures that focus on optimizing the use of resources, minimizing waste, ensuring product safety, and complying with ethical and environmental standards. Key aspects of SPP include reducing packaging and waste, assessing product safety, upholding employee labor rights, ensuring supplier capacity to produce eco-friendly goods, and prioritizing the reduction of carbon emissions associated with transportation. By supporting these practices TU-Sofia can influence suppliers to adhere to more sustainable and responsible production and packaging that is both ethical and environmentally friendly.

As a public institution, TU-Sofia is required to comply with the regulations of the Public Procurement Act (PPA) when purchasing goods and services. The legal procedure includes drafting procurement notices, conducting competitive procedures to select suppliers, evaluating proposals, and awarding contracts to the winners, ensuring competition and efficient use of public funds. The provisions of PPA law are intended to ensure transparency and fairness in the procurement process, but in fact, act as legal barriers that prevent the university from promoting procurement policies aimed at the SDGs. The analysis of the PPA reveals several requirements that pose significant challenges to the implementation of SPP at the university. Ensuring equality and non-discrimination, maintaining free competition, and ensuring proportionality and transparency, are all rules that may conflict in the context of SPP. According to PPA, the criteria for evaluating the suppliers must be objective, measurable, and correctly defined in advance in the procurement documents. When awarding public contracts, the university must not limit competition by imposing conditions or requirements that provide an advantage or restrict suppliers' participation in public procurement, as imperatively stated in the PPA (https://lex.bg/bg/laws/ (accessed on 1 August 2024)). On the other hand, SPP usually involves qualitative and/or complex criteria, such as environmental impact, social responsibility and/or life-cycle costs that

are difficult to quantify when responding to PPA. Another issue is related to the most commonly used criteria, which is the "lowest price". When it comes to the SPP, usually, sustainable products and services are initially more expensive, although they offer long-term benefits such as lower life-cycle costs, reduced environmental impact, or social value. The PPA often prioritizes immediate costs over long-term value, focusing on direct, short-term financial implications rather than broader, long-term sustainability benefits. Complexity in defining sustainable criteria can also be considered as a restriction. Developing environmental or social criteria must be clearly defined, non-discriminatory, and directly related to the subject matter of the contract. The sustainability criteria may be considered subjective or indirectly linked to the objectives of the procurement. This could increase the risk of legal problems on the part of unsuccessful bidders. Last but not least, to comply with both PPA requirements and sustainability goals the university needs the administrative capacity to deal with extensive documentation, justification, and reporting. While not a direct restriction, the lack of expertise and awareness in sustainable procurement can be a significant barrier. Therefore, complying with the legal requirements TU-Sofia cannot play a significant role in advancing sustainable development by leveraging its influence on the supply chain. To be able to use its purchasing power to influence sustainable development, the university has been forced to look at different ways of incorporating sustainability criteria when selecting suppliers for the procurement process.

There are several scientifically proven methods that universities can use to make their strategic and tactical decisions (Menon and Suresh 2022). For example, multi-criteria methods as a decision-making tool are valuable when decisions involve trade-offs between different factors such as cost, quality, time, and/or risk, and are widely used in different fields. The study in Mrzygłocka-Chojnacka and Ryńca (2023) presents a tool for assessing the factors influencing sustainable development in higher education faculties using multi-criteria analysis. By evaluating the faculties of a leading Polish technical university, the approach provides a holistic view of sustainability implementation. A multi-criteria approach was also applied by Makki et al. (2023) to perform decision ranking for university colleges to assess the quality of education.

In the sustainability context, Budihardjo et al. (2021) examine sustainability efforts at Universitas Diponegoro (UNDIP) in Indonesia, focusing on factors that influence sustainability in HEIs. Through bibliometric analysis, key factors are identified, including institutional commitment and guidelines for sustainability implementation. In order to examine the need to include sustainability criteria in university rankings, which traditionally focus on teaching and research, Burmann et al. (2021) propose a target programming methodology to determine objective, transparent, and reproducible weights of multiple criteria, addressing common criticisms of subjectivity and interrelated criteria. The results show that sensitivity analysis of the impact of changes in the weighting parameter on the rankings highlights the importance of carefully defining criteria weights to ensure fair and accurate assessments.

Multi-criteria analysis has many advantages, such as consideration of multiple criteria, which makes the decision more objective; the systematic approach makes the process transparent and communicative; and the flexibility to consider a wide range of both qualitative and quantitative criteria. While multi-criteria methods are valuable in decision-making in the private sector, their application in public procurement under the Bulgarian PPA is limited due to the strict legal requirements for objectivity, transparency, and equal treatment. Assigning weights and scores could lead to subjectivity and potentially influence the results based on the subjective judgment of the decision-makers, which is inconsistent with PPA. If the criteria are not sufficiently objective, clear, and understandable to all potential suppliers, this could be seen as conflicting with the principles of equal treatment and non-discrimination. Multi-criteria analysis might be more complex and not be easily understood by all parties involved, including the bidders and even the procurement authorities. This complexity could lead to misinterpretations of the evaluation process, increasing the risk of legal challenges and disputes. PPA prioritizes clear, pre-defined,

and objective criteria to ensure that all suppliers are assessed on a fair and equal basis, reducing the potential for subjectivity or perceived bias that multi-criteria methods could introduce. To overcome all these challenges, public universities need additional resources and expertise to effectively integrate sustainability into their procurement processes.

Based on the literature and regulation analysis, it can be concluded that to address challenges posed by external factors, the university should adopt a leadership approach model to leverage internal incentives. In this context, two main approaches are identified: the top-down approach, driven by administrative leaders through official statements and policy documents, and the bottom-up approach, which starts with small-scale initiatives by committed individuals that gradually become institutionalized and contribute to larger-scale transformative changes. Figure 2 provides a graphical representation of the approach taken in this study—a combination of bottom-up and top-down approaches through the development and implementation of a Sustainable Public Procurement Policy (SPPP).

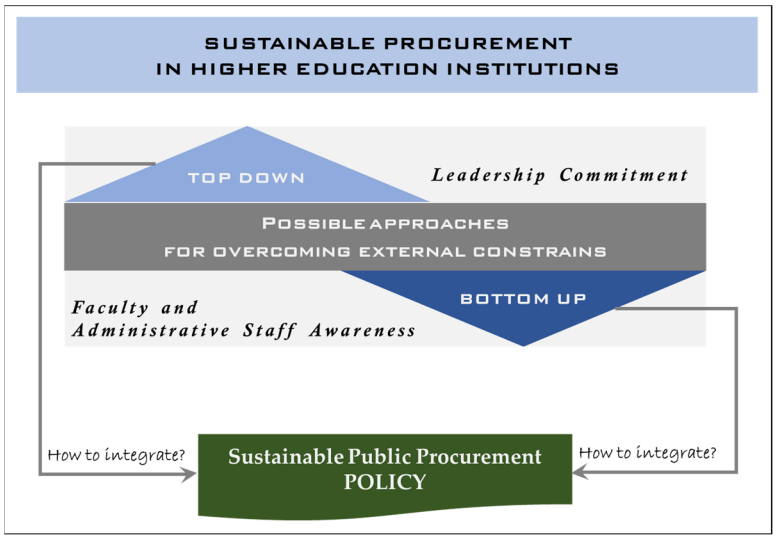

Figure 2. Possible approaches for overcoming external constrains for sustainable procurement in HEI.

5. Leadership Approach Model for Tackling SPP Challenges in TU-Sofia

TU-Sofia is not able to directly influence the external constraints imposed by PPA such as non-discrimination principles. Thus, an internal leadership approach is needed to find solutions for introducing sustainability in the procurement process. The introduced model of leadership approach aims at encouraging and supporting sustainable purchasing of goods and services by developing and implementing SPPP. Figure 3 presents the model of the leadership approach applied and the relationships between the different stakeholders involved in public procurement management process processes. The development and implementation of the SPPP sets out the basic principles, measures, and responsibilities of the staff involved. On the one hand, all academic and non-academic staff of the university must have a sustainable mindset, commitment, and in-depth knowledge to determine the sustainability characteristics of the products and services needed for teaching and research activities. On the other hand, administrative staff, especially those directly involved in the procurement management process, must strictly comply with legal restrictions and discuss in detail with faculty members all aspects and characteristics of the procured products and services so as not to be considered discriminatory. If there are such concerns, they should make recommendations and together find a common solution. This will lead to sustainable procurement, which will ensure that suppliers deliver sustainable products and services.

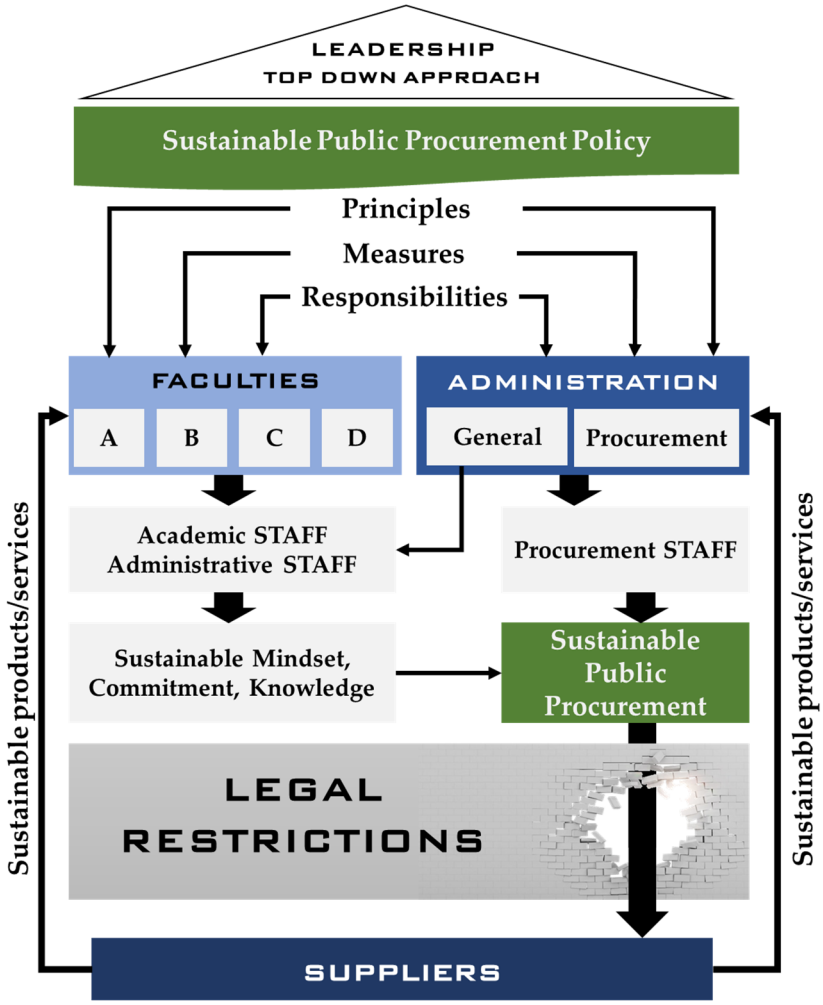

Figure 3. Leadership approach model.

The procedure for policy development proposed in the study is illustrated in Figure 4 and includes the following steps:

Step 1. Analyzing strategic, tactical, external, and internal constraints and opportunities.

Step 2. Prioritizing the analysis results through the identification of the most significant incentives to drive transformative change in sustainable procurement management processes.

Step 3. Defining the scope, objectives, expected outcomes, and principles of the SPPP.

Step 4. Developing SPPP measures ensuring compliance with the PPA and defining the implementation responsibilities.

Step 5. Defining evaluation impact parameters to assess the results of SPPP implementation.

Step 6. Monitoring of the SPPP measures and taking corrective actions for improvement if it is needed for the given period.

The results from the proposed procedure are as follows:

Step 1. External strategic constraints—lack of political commitment; external tactical constraints—restricting legal environment; internal strategic constraints—institutional resilience to changes, limited financial resources, sustainability knowledge and skills, internal tactical constraints—limited training, lack of expertise in sustainable procurement management process. External strategic opportunities—increasing social awareness. External tactical opportunities—increasing market signals, internal strategic opportunities—strong leadership commitment, internal tactical opportunities—increasing students' and staff's motivation and awareness.

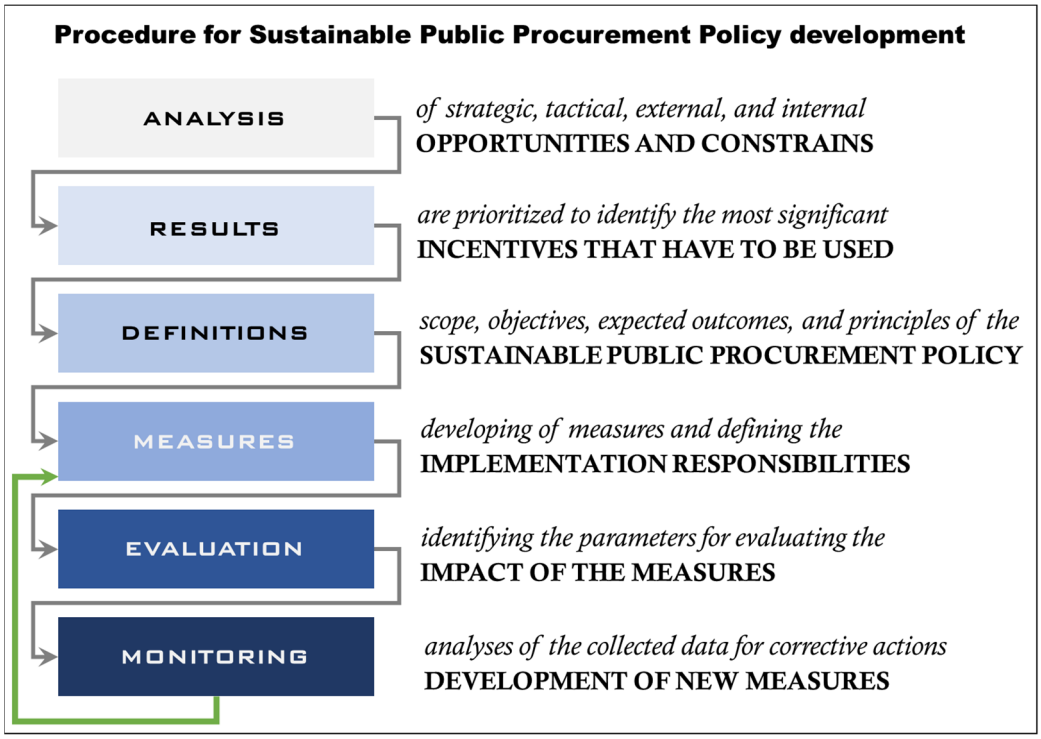

Figure 4. Procedure for Sustainable Public Procurement Policy development.

Step 2. The strong leadership commitment that is evident in the overall activities of TU-Sofia can be defined as a most significant opportunity. The university strives to function as a leading research and educational institution, integrating sustainability in all its activities. The articulated vision is evident in the institution's overarching mission—to excel as a leading research and educational institution. The vision is emphasized by the university's commitment to integrating sustainability into every aspect of its activities. The leadership recognizes that decisions and actions related to the purchase of goods, services, and works have not only an economic but also social and environmental impact on society and the environment. TU-Sofia considers this as a valuable opportunity to consolidate its position as a leading European research and education center, applying the principles of the SD concept in the field of public procurement. At the strategic level, there is consistency between the university's overall strategy and sustainability strategy. Based on this, the development and implementation of SPPP aims to integrate environmental and socio-economic aspects in all stages of the procurement management process.

Step 3. At this step, the scope, objective, expected outcomes, and principles are defined. To allow SPPP to fulfill its functions, the scope includes all structural units of TU-Sofia. This provides a unified and sustainable way of making decisions and encourages all the activities that contribute to the achievement of the objectives set out in the university's Sustainable Development Strategy.

The defined objective of the SPPP is to enhance the effectiveness and efficiency of the public procurement management process, thereby increasing economic benefits, reducing risks, and limiting the adverse impact on society and the environment.

Expected outcomes are defined as follows:

1. To allocate the financial resources to achieve the best sustainable outcomes for all stakeholders, including students, academic and administrative staff, the community, and the economy of the country as a whole;
2. To ensure the legitimate and efficient use of public funds while guaranteeing the publicity and transparency of Sustainable Public Procurement at TU-Sofia.

To contribute to the sustainability of TU-Sofia, the defined SPPP principles are as follows:

- SPPP effectiveness: The TU-Sofia's decisions regarding the purchase of goods, services, and construction through procurement are based on a balance between the economic benefits to the university and the impact on society and the environment;
- SPPP sustainability: TU-Sofia endeavors to procure goods and services that adhere to life-cycle sustainability criteria;
- SPPP publicity and transparency: The SPPP is accessible to all structural units of TU-Sofia, as well as to public procurement contractors when necessary, and is available on the university's website;
- SPPP continuous improvement: TU-Sofia provides procurement management staff training and guidance on contractor relationship management, tender evaluation, and contracting.

Step 4. Developing SPPP measures ensuring compliance with the PPA and defining the implementation responsibilities. As TU-Sofia is prohibited by the PPA from imposing sustainability requirements on the suppliers, measures are developed in the SPPP to ensure sustainable procurement. To avoid discrimination against suppliers, TU-Sofia imposes requirements on the products to be purchased related to reducing costs over the product life cycle. It also imposes requirements for its structural units related to the sustainable manner of operation. Finally, it continuously improves the competence and awareness of all university staff. This makes it possible, by implementing measures at a sustainable procurement management process, to achieve the Sustainable Development Strategy objectives.

The identified measures focus on three main areas: reducing costs throughout the product life cycle; engaging and involving all university staff in the implementation of sustainability in the procurement management process; and raising awareness and increasing the skills and knowledge of all university staff in the context of sustainability demand.

Measure 1. Sustainable Cost Reduction

Procurement decisions are based on the consideration of the costs and impact that the procured subject causes on society and the environment throughout its life cycle.

1. TU-Sofia encourages the procurement of products that are sustainably produced from recyclable and/or renewable resources and/or that require minimal transportation;
2. TU-Sofia encourages the procurement of products with a minimum amount of packaging and, where possible, they should be made of recycled or recyclable materials;
3. TU-Sofia encourages the procurement of assets that have a minimal environmental impact during their operation (reusable, energy-saving, etc.);
4. TU-Sofia encourages the procurement of products that can be recycled or discarded with minimal environmental impact;
5. TU-Sofia does not support procuring goods/or services with harmful impacts on the environment when it is possible to use sustainable, alternative ones.

Measure 2. Sustainable Procurement Management

Procurement decisions made by internal buyers are consistent with the TU-Sofia sustainability strategy:

1. TU-Sofia encourages all structural units to assess the demand for goods and/or services following the principles of the SPPP;
2. TU-Sofia strives to encourage structural units to adopt sustainability criteria in their decision making for the selection of goods and/or services;
3. TU-Sofia supports the inclusion of sustainability criteria in the technical specifications for procurement products, including the life-cycle assessment of goods;
4. TU-Sofia supports the structural units to perform all the activities sustainably, including the procurement of products and services.

Measure 3. Sustainable Demand Awareness

Raising awareness and increasing the skills and knowledge of all university staff in the context of sustainability demand:

1. TU-Sofia encourages all structural units to systematically review and evaluate the demand of procured goods and/or services in order to minimize them wherever and whenever possible;
2. TU-Sofia provides sustainable procurement management process training and guidance to facilitate the implementation of the SPPP.

At step 4, the responsibilities for the SPPP implementation are also defined. To achieve the objectives of the TU-Sofia Sustainable Development Strategy, it is important to recognize that responsibility for the implementation of the SPPP rests not only with the staff directly involved in the procurement management process, but also all the academic and non-academic staff of the structural units.

Academic and Non-Academic Staff's Responsibilities

- To observe the principles of the TU-Sofia Sustainable Development Strategy;
- To make the decisions for procuring goods and/or services based on the analysis of options for reuse and sharing assets;
- To be aware of the sustainability of the procured goods and services, and to strive to reduce the harmful impact on the environment;
- To give priority to procured goods and/or services that meet sustainability criteria;
- To increase sustainability awareness and knowledge to make informed decisions.

Procurement Management Staff's Responsibilities

- To observe the principles of the TU-Sofia Sustainable Development Strategy;
- To consult with sustainable procurement specialists when it comes to high-value, high-volume, high-impact, and/or high-risk products/or services;
- To conduct and take part in training on the implementation of SPPP at the university;
- To ensure that information on SPPP is easily accessible and available to all stakeholders;
- To provide consultation and advice on sustainable procurement issues within the TU-Sofia structural units;
- To actively engage with potential procurement contractors to ensure awareness and transparency of the TU-Sofia SPPP.

Step 5: At this stage, impact assessment parameters are set to evaluate the results of the implementation of the SPPP. In order to assess the overall impact of the implementation of the SPPP, the impact parameters should be from different areas such as financial, environmental, social, and legal. From a financial perspective, the change in the level of life-cycle costs of purchased goods and/or services is relevant. From an environmental perspective, changes in the university's sustainability performance are relevant. From a social perspective, the change in the university's position in rating systems is relevant. From a legal perspective, the number of lawsuits filed is relevant.

6. Discussion

Traditionally, HEIs have focused on incorporating sustainability into education and research, but this study highlights the critical need to extend these efforts to procurement management practices. Previous studies have highlighted similar challenges in public institutions pursuing sustainability under strict procurement laws. The literature suggests that while external factors such as rigid legal frameworks are essential to ensure fairness, they often conflict with internal sustainability initiatives that require flexibility and innovation. The results of this study are consistent with these observations and underscore the need for a balanced leadership approach that encompasses both compliance and sustainability.

The key findings of the case study on TU-Sofia are related to the identification of significant challenges and opportunities related to the implementation of Sustainable Public Procurement (SPP) within the constraints of the Bulgarian Public Procurement Act (PPA). The findings of the study extend the current knowledge in the field of HEI sustainability by addressing the integration of sustainability into operational processes, particularly public procurement, which has received limited attention. Despite the university's considerable purchasing power and its potential impact on sustainable development, legal constraints

pose significant obstacles to integrating sustainability criteria into procurement processes. By using the Technical University of Sofia as a case study, the research identifies specific challenges posed by both external legal requirements and internal incentives for sustainable procurement. The proposed model, which includes developing and implementing a Sustainable Public Procurement Policy, offers a novel solution to these challenges. It extends existing knowledge by demonstrating how a leadership-driven approach can align sustainable procurement practices with legislative requirements, thus overcoming traditional barriers. The model could not only enhance economic benefits and mitigate risks but also drive transformative change in procurement management, contributing to broader societal and environmental goals.

In terms of interpreting the results, the findings reveal a fundamental conflict between the principles of non-discrimination and free competition established in the PPA and the sustainability goals that TU-Sofia seeks to achieve. The strict regulations of the PPA, designed to ensure transparency and fairness, in fact unintentionally limit the university's ability to include sustainability criteria in procurement contracts. This highlights a critical tension between legal compliance and sustainable procurement and suggests that legal frameworks need to be evolved to better support sustainable practices.

The implications of the study are diverse. At the macro level, for policymakers, it suggests the need to review and possibly revise public procurement regulations to more effectively support the Sustainable Development Goals. For public HEIs such as TU-Sofia, the findings highlight the importance of internal leadership awareness and commitment to navigate legal constraints while pursuing sustainability goals. The development and implementation of a Sustainable Public Procurement Policy (SPPP) at TU-Sofia serves as a model for other public universities facing similar challenges.

This study has several limitations that must be acknowledged to fully understand its implications and scope. Although the study identifies the internal incentives in TU-Sofia that could support the adoption of sustainability in procurement process management, it does not provide a detailed analysis of how these incentives may influence the policy implementation process. Differences in internal perceptions and reactions of the university staff to these incentives could affect the effective implementation of the proposed policy. The focus on an internal leadership-driven approach to address legal constraints might overshadow other critical factors influencing the sustainable procurement process, such as financial constraints, administrative capacities, or stakeholder engagement. These factors are essential for a comprehensive understanding of the challenges and solutions in sustainable procurement. While this study focuses on a single HEI, the impact of the PPA on all public institutions mitigates this limitation, as the legal constraints and challenges identified are applicable across the public sector in Bulgaria. Therefore, the findings are broadly relevant and provide valuable insights that can inform the practices of other public HEIs, not only in Bulgaria, that are facing similar constraints. However, the analysis is still constrained by the current legal framework, which may evolve, affecting the relevance of the proposed solutions.

Future research could expand the investigation and analysis of specific internal factors that contribute to or hinder the adoption of sustainable procurement policies across diverse higher HEIs. This research should focus on understanding how internal incentives, organizational culture, and institutional biases affect the implementation and effectiveness of sustainable procurement initiatives. Future studies could also be aimed at understanding how sustainable procurement practices interrelate with other sustainability initiatives such as campus operations, community engagement, and curriculum development, and identify synergies or conflicts between these initiatives. Investigating how different leadership styles and approaches impact the success of university sustainability initiatives will shed light on evaluating the effectiveness of various leadership models in overcoming legal and institutional barriers to sustainability. Future research should explore the impact of potential changes in public procurement laws on sustainability outcomes. The focus should be on creating flexible models and strategies that can adjust to changes in legislation while

maintaining the effectiveness of sustainable procurement initiatives. Comparative studies involving multiple institutions across different regions could provide broader insights into the effectiveness of various approaches for integrating sustainability into public procurement. Additionally, longitudinal studies could assess the long-term impact of SPPP on institutional sustainability performance.

7. Conclusions

In conclusion, TU-Sofia faces significant challenges in implementing SPP due to legal constraints imposed by the PPA. However, by adopting an internal leadership approach and developing a comprehensive SPPP, the university can navigate these challenges and promote sustainability. This study contributes to the broader discourse on sustainable procurement by highlighting the need for regulatory reform and the importance of an internal institutional leadership approach. Through sustainability-committed leadership and policy development and implementation, TU-Sofia can influence sustainable practices despite external constraints, setting a precedent for other public HEIs.

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