

IMPACT OF PRACTICAL CONSTRAINTS ON PROMOTING THE SUSTAINABILITY OF MOROCCAN PUBLIC PROCUREMENT

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Abstract. This article aims to analyze the determining factors for the adoption of sustainable procurement in Moroccan public bodies. It also aims to highlight the impact of several practical constraints on the development of sustainability in public procurement. Thus, our methodology is exclusively quantitative and relies on a survey conducted through a questionnaire targeting a sample of 410 officials in the field of public procurement. The collected data were analyzed using the partial least squares method (SmartPLS). The study highlights the importance of implementing public policies to promote sustainable procurement, as well as the need to strengthen governance, training, awareness, and dissemination in this field.

Keywords: *sustainable public procurement, promotion factors, practical constraints, sustainable development, public organizations.*

Reikšminiai žodžiai: *Tvarūs viešieji pirkimai, skatinimo veiksniai, praktiniai suvaržymai,*

darnus vystymasis, viešosios organizacijos.

JEL classification: H57, Q58, D73

Introduction

Public procurement accounts for roughly 24% of gross domestic product (GDP) in Morocco, 14% of the GDP within the European Union, and 12% of that in Organisation for Economic Co-operation and Development countries (Below 2017). In many developing countries, this proportion can reach up to 30% of GDP (UNEP 2017). For several decades, governments worldwide have actively sought to mitigate the adverse effects associated with production and consumption processes through sustainable procurement (Ho et al. 2010). For several years, governments globally have been working to mitigate the adverse effects of production and consumption by promoting sustainable procurement practices (WCED 1987). Sustainable public procurement reflects a concern for economic, social, and environmental aspects in procurement decisions (Brammer and Walker 2011). This requires the adoption of sustainable approaches that balance these three aspects for both the current and future generations (WCED 1987), as well as their interrelations (Lozano 2008).

Our analysis aims to examine the perception of public officials regarding sustainable procurement. It highlights the influence of various practical constraints on the development of sustainability in public procurement in Morocco. To achieve this, we will first explain the concepts utilized in this research, then analyze the factors promoting sustainability and the barriers to the development of sustainable procurement based on a review of specialized literature. Finally, the last section is dedicated to presenting the results of our quantitative study.

1. Literature review

1.1. Economic factors and barriers

In the context of sustainable public procurement, costs enable public entities to make more informed and sustainable purchasing decisions by considering long-term economic impacts (Brammer and Walker 2011; Georghiou et al. 2014). Thus, the integration of sustainability criteria into supplier selection and evaluation processes is synonymous with economic innovation (Uyarra et al. 2014; Brammer and Walker 2011). Moreover, pooled procurement increases bargaining power with suppliers. Such demand aggregation through consortium purchasing is, for example, recommended in the National Procurement Strategy for local governments as a means to make procurement more cost-effective (Walker and Preuss 2008). Additionally, the advancement of Small and Medium-sized Enterprises in sustainable public procurement is an economic factor promoting sustainability

(Karjalainen and Kemppainen 2008).

The practical and successful implementation of sustainable public procurement faces multiple constraints that limit its development. Budgetary constraints are major obstacles (Schaltegger and Burritt 2010). Thus, sustainable public procurement often requires significant initial investments (Meehan and Bryde 2011). Moreover, there is an additional constraint related to the perception of value, as public buyers often believe that the long-term benefits of sustainable procurement are insufficient compared to the immediate cost savings (Brammer and Walker 2011; Walker and Brammer 2012). Additionally, the lack of training (Brammer and Walker 2011; Laing 2003) and awareness (Brammer and Walker 2011; Testa et al. 2014) are obstacles to the development of sustainable public procurement. In this regard, the absence of advance payments or flexible credit terms limits the participation of SMEs in sustainable public contracts (Loader 2013). Thus, the lack of material resources is the most frequently cited obstacle to the implementation of sustainable procurement. Approximately one-third of public sector organizations emphasized that products derived from sustainable practices were perceived as more expensive than competing products, and their budgets did not allow for the expansion of sustainable procurement practices (Min and Galle 2001; Rao and Holt 2005). Similarly, the perception of high costs may discourage public organizations from adopting sustainable practices in the absence of sufficient financial incentives (Walker and Brammer 2009).

1.2. Social factors and barriers

The social aspect of sustainability implies that public administrations should ensure suppliers adhere to fair labor conditions by monitoring compliance with child labor laws, inspecting suppliers' premises to ensure that they are not using substandard facilities, and paying their workers a fair wage by requiring them to provide a decent salary above the minimum wage established in the country (Brammer and Walker 2011; Carter and Jennings 2004). In this regard, the professional inclusion of people with disabilities through the implementation of public procurement policies that promote the employment of disabled individuals can also serve as a lever for supplier companies to adopt more inclusive practices, thereby contributing to a more equitable labor market (Solomon and Solomon 2006). According to an exploratory study conducted by Fernández-Pérez and Luque-Vílchez (2024), a relevant observation in this context is the emphasis on employing at least 2% of individuals with disabilities among the workforce, with the usage frequency of this indicator ranging from 53.33% in 2017 to 75% in 2019. Similarly, the implementation of gender-responsive procurement, which prioritizes awarding public contracts to women-owned businesses, is an increasingly adopted strategy to promote both gender equality and economic sustainability (Williams 2024).

Moreover, several social constraints are associated with the development of sustainable public procurement—for instance, products and services sourced ethically or from suppliers adhering to high social standards are often more expensive than conventional

alternatives due to higher production costs related to fair worker compensation and the adoption of responsible labor practices (McCrudden 2004). Furthermore, for an organization to successfully adopt sustainable procurement practices, it is essential to have a comprehensive understanding of the concept of sustainable procurement itself, along with the relevant governmental policies and frameworks that underpin its implementation (Brammer and Walker 2011). Sustainability is, in itself, a contested and complex concept, and procurement professionals may lack the necessary skills due to the absence of senior leadership in the field and the knowledge required to successfully implement sustainable procurement (Meehan and Bryde 2011; Brammer and Walker 2011). Practitioners frequently cite the lack of knowledge as a potential barrier to sustainable procurement (Brammer and Walker 2011; Meehan and Bryde 2011), and studies have found that procurement officials are uncertain about the ethical and social issues involved in their purchasing decisions (Copper et al. 2000). The obstacles mentioned in the conceptual model developed by Brammer and Walker (2011), which draw inspiration from the works of Gelderman et al. (2006), include the incentives and pressures placed on staff regarding sustainable procurement. These challenges are partly attributable to the absence of an organizational culture focused on sustainability (Gonzalez-Padron et al. 2008; O'Brien 1999). Moreover, the complexity and rigidity of public procurement processes, which require significant administrative and legal resources, often exclude SMEs and innovative actors (Karjalainen and Kempainen 2008). Additionally, the lack of coordination and standardization of sustainability criteria among different public administrations leads to a fragmentation of sustainable procurement practices (Brammer and Walker 2011).

1.3. Environmental factors and barriers

In the literature, five types of variables are identified as contributing to the promotion of sustainability in public procurement. These variables are as follows: (i) the use of life cycle analysis to evaluate the ecological impact of products and packaging, (ii) the requirement for suppliers to commit to waste minimization, (iii) the implementation of procurement strategies that promote the reduction, reuse, and recycling of materials, (iv) the reduction of materials (Brammer and Walker 2011; Carter and Carter 1998; Carter and Jennings 2004), and (v) Eco-labels encourage suppliers to innovate and improve the environmental footprint of their offerings, thereby contributing to a greener economy (Brammer and Walker 2011; El Haddadi et al. 2021).

Public environmental policy in public procurement faces three major obstacles. The first is related to the analysis of perceived costs and benefits before committing to a sustainable procurement policy (Brammer and Walker 2011; Gelderman et al. 2006). The second obstacle refers to the lack of availability of products and the higher costs associated with sustainable procurement (Brammer and Walker 2011; Gelderman et al. 2006; Norton 1995). In the same vein, the conceptual model of (Brammer and Walker 2011), which was adapted by Gelderman et al. (2006), highlights the lack of availability of sustainable

products (Norton 1995), given that many goods and services acquired by the public sector are highly specified (Brammer and Walker 2011). Sustainable and non-sustainable products vary in terms of their substitutability (Norton 1995). As explained by Brammer and Walker (2011), the provision of green energy or recycled paper can be more easily substituted than specialized medical equipment.

The analysis of this literature review has led us to the development of three key hypotheses, which will be assessed through practical investigations:

- **H₁**: Economic and financial constraints (EFC) negatively impact the promotion of sustainability in public procurement (PSPP).
- **H₂**: Organizational and cultural constraints (OCC) negatively impact the PSPP.
- **H₃**: Structural constraints (SC) hinder the PSPP.

2. Methodology

This study explores the impact of practical constraints on sustainability in public procurement in Morocco, using a quantitative methodology. Public entities defined by Article 2 of Morocco’s public procurement decree were targeted, with data collected via a Google Forms questionnaire (Brammer and Walker 2011). A non-probability sampling method (Heckathorn 2002) was used to capture diverse perspectives. The data were analyzed using SmartPLS, employing open coding to identify and categorize patterns until “category saturation” was reached (Miles and Huberman 1994). This approach highlights key practical constraints affecting the adoption of sustainable procurement practices.

Table 1. Operationalization of promotion factors in the PSPP

PSPP	Code	Items
Economic factors (EF)	EF1	Costs
	EF2	Economic innovation
	EF3	Planning requirements
	EF4	Purchasing pooling / joint procurement among project owners
	EF5	Advances to SMEs
Social factors (SF)	SF1	Guarantee that providers comply with child labor laws
	SF2	Workplace inspections by labor inspectors to ensure favorable use of service providers’ facilities
	SF3	Request for service providers to pay a living wage above the national minimum wage
	SF4	Professional inclusion of individuals with disabilities
	SF5	Gender equality

Environmental factors (ENF)	ENF1	Life cycle analysis of products and packaging
	ENF2	Request for service providers to commit to waste minimization
	ENF3	Participation in the design of dismantlable, recyclable, or reusable products
	ENF4	Labels
	ENF5	Material reduction

Table 2. Operationalization of development constraints in sustainable public procurement

	Code	Items
EFC	EFC1	High costs
	EFC2	Insufficiency of the benefits of sustainable purchasing
	EFC3	Lack of progress
	EFC4	Lack of material resources
	EFC5	Lack of financial incentives
OCC	OCC1	Lack of training
	OCC2	Lack of awareness
	OCC3	Lack of knowledge
	OCC4	Lack of skills
	OCC5	Lack of an organizational culture focused on sustainability
SC	SC1	Inaccessibility of sustainable supply sources
	SC2	Unavailability of sustainable products from suppliers
	SC3	Specialization of goods and services
	SC4	Complexity and rigidity of public procurement processes
	SC5	Lack of coordination and standardization of sustainability criteria among public administrations

3. Results

3.1. Descriptive statistics

Table 3. Descriptive statistics by category of public buyers

	Female	%	Male	%	N	%
Local authority	123.00	30.00	176.00	42.93	299.00	72.93
Public institutions and enterprises	22.00	5.37	29.00	7.07	51.00	12.44
State service/ministry	31.00	7.56	29.00	7.07	60.00	14.63
N	176.00	42.93	234.00	57.07	410.00	100.00

3.2. Measurement model

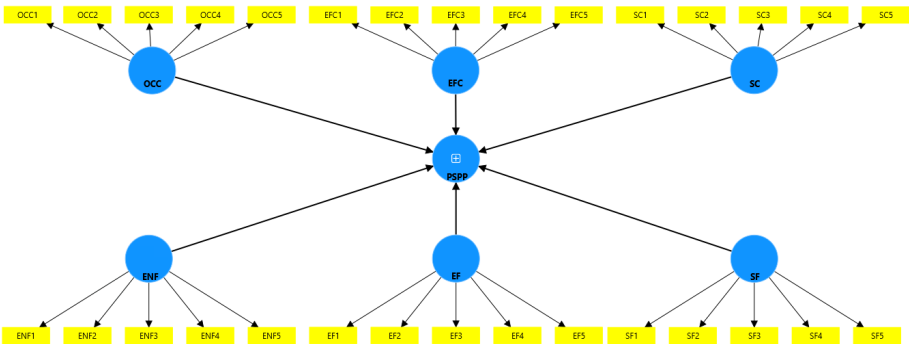


Figure 1. First-order measurement model using the repeated indicators approach <https://www.smartpls.com>.

Table 4. Internal consistency and convergent validity of measurement scales

	Outer loadings	Cronbach's alpha*	Composite reliability (rho_a)**	Composite reliability (rho_c)**	AVE***
EF1	0,759	0,884	0,898	0,914	0,680
EF2	0,824				
EF3	0,848				
EF4	0,842				
EF5	0,847				

ENF1	0,963	0,901	0,935	0,931	0,735
ENF2	0,704				
ENF3	0,966				
ENF4	0,635				
ENF5	0,958				
SF1	0,912	0,895	0,904	0,923	0,708
SF2	0,705				
SF3	0,804				
SF4	0,878				
SF5	0,892				
EFC1	0,709	0,778	0,783	0,849	0,530
EFC2	0,702				
EFC3	0,699				
EFC4	0,700				
EFC5	0,822				
OCC1	0,845	0,883	0,952	0,912	0,677
OCC2	0,765				
OCC3	0,899				
OCC4	0,718				
OCC5	0,873				
SC1	0,756	0,841	0,967	0,854	0,539
SC2	0,737				
SC3	0,730				
SC4	0,745				
SC5	0,702				

Note : * Cronbach's alpha = > 0,70; ** Composite reliability = > 0,70; and *** AVEs = > 0,50 (Hair et al. 2022)

Table 5. Discriminant validity

	EF	EFC	ENF	OCC	SC	SF
EF	0,825					
EFC	-0,730	0,728				
ENF	0,616	-0,468	0,857			
OCC	-0,283	0,268	-0,551	0,823		
SC	-0,463	0,385	-0,443	0,304	0,734	
SF	0,758	-0,608	0,707	-0,315	-0,439	0,842

The second-order factor is a combination of PSPP factors in the public sector (Brammer and Walker 2011).

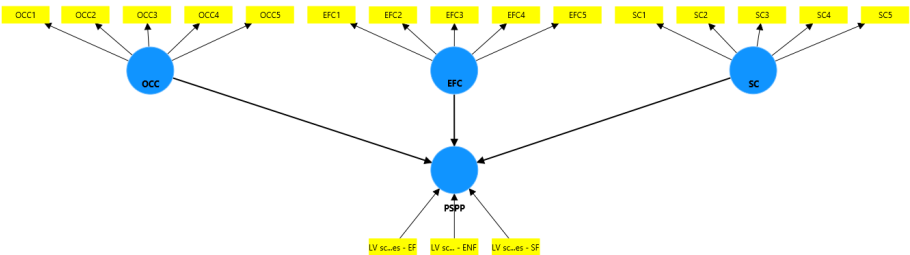


Figure 2. Second-order measurement model <https://www.smartpls.com>.

Table 6. Validation of the second-order construct

	Weight*	T statistics (O/STDEV)	P values	VIF**
LV scores - EF -> PSPP	0,780	9,559	0,000	2,425
LV scores - ENF -> PSPP	0,163	1,728	0,042	2,062
LV scores - SF -> PSPP	0,135	1,730	0,042	3,007

Note: * Weight > 0,10 and ** VIF > 5 (Hair et al. 2022)

3.3. Structural model assessment

3.3.1. The model’s goodness of fit (GoF)

Table 7. Model’s GoF

	R ² *	R ² adjusted
PSPP	0,604	0,601

Note: * R² > 0,10 (Hair et al. 2022)

3.3.2. GoF of the model

$$\text{GoF} = \sqrt{(\bar{R}^2 \times \text{AVE}^2)} = 0.596 \text{ (1)}$$

Note: GoF > 0,36 (Wetzels and Odekerken-Schröder 2009)

3.3.3. Path coefficient of the structural model and regression result

Table 8. Path coefficient of the structural model and regression result

Hypo	Relationship	Path coefficient (β)	P values	Decision
H1	EFC -> PSPP	-0,628	0,000	Supported*
H2	OCC -> PSPP	-0,134	0,001	Supported**
H3	SC -> PSPP	-0,196	0,000	Supported*

Note: * p = < 0,01, ** p = < 0,05.

4. Structural model

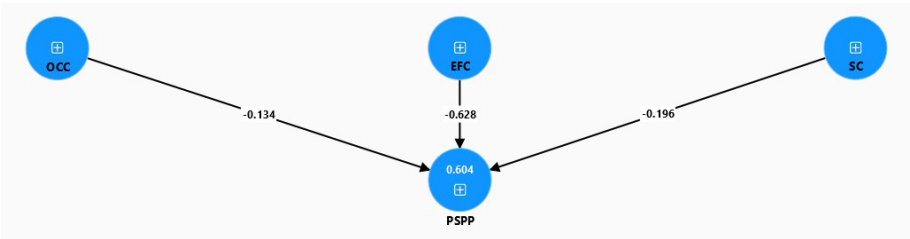


Figure 3. Structural model <https://www.smartpls.com>.

5. Discussion and conclusion

According to Table 8, our analysis shows a negative and significant impact ($\beta = -0.628$, $p < 0.001$) of EFC on PSPP in Morocco—this means that the H_1 is accepted. Similarly, the impact of OCC is negative and significant on PSPP in Morocco ($\beta = -0.134$, $p < 0.002$)—this means that our H_2 is accepted. Finally, the impact of SC on PSPP in Morocco is negative and significant ($\beta = -0.196$, $p < 0.001$)—this means that the third hypothesis of our research is accepted. Thus, our results align with recent studies on the impact of these practical constraints on PSPP. Structural constraints, such as the SC1, SC2, SC3, SC4, and SC5 (Welz and Stuermer 2020), continue to grow and tend to exacerbate EFC, such as EFC1,

EFC2, EFC3, EFC4, and the absence of EFC5 (Bansal and Roth 2000; Rao and Holt 2005). Moreover, despite the growing importance of sustainable development policies implemented by Morocco, OCC as OCC1, OCC2, OCC3, OCC4, and OCC5 focused on sustainability, continue to hinder the widespread adoption of sustainable public procurement. Finally, additional challenges persist, notably the absence of an adequate regulatory framework and insufficient government commitment to sustainable development practices. These issues hinder the integration of sustainable practices despite the growing demand for eco-friendly solutions (Oyewobi and Jimoh 2022).

Beyond its three dimensions, economic, social, and environmental, the sustainable development of public procurement in Morocco also relies on three additional strategic levers. Firstly, the establishment of an appropriate regulatory framework serves as a fundamental lever to effectively guide and regulate sustainable public procurement practices. Secondly, the establishment of clear and comprehensive guidelines for public administration personnel is crucial. These guidelines, designed as practical tools, would facilitate the adoption of sustainability principles within organizations, thereby contributing to a gradual shift in organizational attitudes and a more effective integration of sustainable development goals. Finally, the focus on awareness and training for public managers is essential. In-depth training not only fosters a better understanding of the socio-economic and environmental impacts of sustainable procurement but also enhances the skills necessary to implement these practices effectively.

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PRAKTINIŲ SUVARŽYMŲ POVEIKIS SKATINANT VIEŠŲJŲ PIRKIMŲ TVARUMĄ MAROKE

Anotacija. Šio straipsnio tikslas – išanalizuoti veiksnius, lemiančius tvarių pirkimų vykdymą Maroko viešosiose įstaigose. Taip pat siekiama pabrėžti kelių praktinių suvaržymų poveikį viešųjų pirkimų tvarumo plėtrai. Taigi mūsų metodika yra išskirtinai kiekybinė ir remiasi apklausa, atlikta anketos būdu, atrinkus 410 pareigūnų, atsakingų už viešųjų pirkimų sritį. Surinkti duomenys buvo analizuojami taikant dalinių mažiausių kvadratų metodą (SMART-PLS). Tyrimė pabrėžiama viešosios politikos įgyvendinimo svarba skatinant tvarius pirkimus, taip pat poreikis stiprinti valdymą, mokymą, informuotumą ir skaidą šioje srityje.

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