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Capturing the value creation in public procurement: A practice-based view

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ABSTRACT

Public procurement has struggled to fulfill its mission to create public value due to a narrow interpretation of value emphasizing the costs of procured goods and services. A holistic view of multidimensional value creation in the context of public procurement has received limited research attention despite a significant body of research on the potential benefits associated with public procurement. The purpose of this paper is to fill this gap by analyzing the value components and means of value creation developed through public procurement activities. We conduct a systematic literature review and content analysis of 171 research articles to determine the constituents of the value of public procurement and the practices needed to achieve them. Using the theoretical lens of the practice-based view, we propose a conceptual framework that holistically integrates different components of the value of public procurement for the public buyer, supplier, and user, along with the practices needed to achieve them. The study contributes to the literature by offering a multidimensional conceptual framework, a structured review of value components and associated practices, and the application of the practice-based view as the theoretical lens, all of which have implications for practice and theory.

1. Introduction

A significant proportion of the overall demand for goods and services is attributed to public procurement, which can be defined as "the acquisition of goods and services by government or public sector organizations" (Uyarra et al., 2014, p. 632). According to the Organisation for Economic Co-operation and Development (OECD), public procurement accounts for approximately 12% of the gross domestic product (GDP) and almost one-third of government expenditure in OECD countries (OECD, 2019). Constrained by fixed budgets, uncertain demand, high public expectations, and performance targets, public organizations face the need to manage limited resources strategically and effectively (Meehan et al., 2017). Public procurement has been criticized for putting a major emphasis on regulatory compliance and cost reduction to the detriment of public value and social welfare goals (Erridge, 2007).

Public procurement is seen as a strategic instrument for many public policy initiatives (Grandia and Meehan, 2017). For instance, it is considered a policy tool to stimulate innovation (Storsjö and Kachali, 2017) or promote competitive markets (Caldwell et al., 2005). Despite the strategic relevance of such a perspective, the conceptualization of public procurement solely as a policy tool obscures the complexity and variety of public procurement processes (Grandia and Meehan, 2017). Furthermore, the policy only partially translates into public procurement practice (Flynn and Davis, 2016; Rolfstam, 2015). Recent policy practice gap research yielded results showing that, in many cases, procurement legislation provides general recommendations, and public procurement professionals must decide individually how to implement them in their specific procurement practice (Storsjö and Kachali, 2017). While some or all of public procurement value components can be considered a reflection of policy objectives, in practice, the latter may be too broad to account for the diversity of value benefits that public procurement can provide for its stakeholders.

Public organizations aim to create public value (Moore, 1995). Several researchers attempted to define public value (Alford and O'Flynn, 2009; Meynhardt, 2009; Stoker, 2006); however, a common definition that accurately describes it is still lacking. Horner and Hazel (2015) clarify that public value is created by achieving public goals (such as improved services or enhanced trust) or solving social problems. Jørgensen and Bozeman highlight that "public value[s] are not the exclusive province of government" (Jørgensen and Bozeman, 2007, p. 373), meaning that public value is rooted in society, organizations, and

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individuals as well. In our study, we follow Meynhardt (2015, p. 148) and define public value as "a value from and for the public," where the public procurement acts as an important value creator operating together with other public procurement actors (e.g., users and suppliers).

Similar to Uyarra et al. (2019) and Page et al. (2015), we view public procurement value creation as a dynamic process involving collaboration between different stakeholders. The collaboration is integral to the public procurement process as the value cannot be created by public buyers operating in a vacuum, but rather through combining information, resources, activities, and capabilities with other stakeholders (Bryson et al., 2015). Public procurement can be a crucial demand-side instrument for creating a superior value for its stakeholders (Erridge, 2007). Importantly, value benefits obtained by public procurement differ among buyers, suppliers, and end-users, in large part, because the value is evaluated subjectively (Purchase et al., 2009; Cluley and Radnor, 2020). Thus, there is a need to understand the multifarious nature of public procurement's value in order to allow procurement professionals to consider the value benefits of employed practices (Purchase et al., 2009; Meynhardt, 2021).

The efficacy of public procurement is difficult to demonstrate because competition and profit are not the ultimate aims for public organizations (Arlbjørn and Freytag, 2012; Jung, 2011; Rantanen et al., 2007; Vakkuri, 2010). The performance of public procurement is bound by political objectives and is hard to measure due to vague and unclear goals that are often derived from political agendas and legislation, and usually expressed in oversimplified monetary terms or budget limits (Arlbjørn and Freytag, 2012; Storsjö and Kachali, 2017). Another important aspect of public procurement's effectiveness relates to the relatively high number of stakeholders and their competing, and often conflicting, expectations for the performance of public organizations (Telgen et al., 2012). Therefore, it is very important, but also difficult, to understand what value public procurement holds for different stakeholders, and how this value can be achieved through public procurement practices.

The public procurement process includes a variety of practices starting with the assessment of public needs to contract management and final payment (OECD, 2019). The main stakeholders involved in these practices are public buyers (or public procurers) responsible for coordinating the procurement; suppliers (or contractors) providing the products, services, or works; and users (or consumers) whose needs and demands are fulfilled. The way that public procurement practices are organized has an impact on the performance of public institutions (Patrucco et al., 2019). By adopting a practice-based perspective (Bromiley and Rau, 2014, 2016), this research conceptualizes public value through purchasing and supply chain (PSM) practices that a public buyer adopts alone or in collaboration with other actors, and thereby moves the focus from the outcome to the process. In our study, we build on previous supply management research in the private sector (specifically, Zimmermann and Foerstl, 2014) to determine how diverse types of PSM practices adopted in the public procurement process contribute to value creation.

We contribute to the existing body of knowledge by adopting a new perspective on the multidimensional value of public procurement investigated through the lenses of the practice-based view (PBV) perspective, which has not previously been explicated in the public procurement context. We demonstrate various aspects of the value of public procurement from different perspectives: the public buyer, the supplier, and the user. The unit of analysis in this study relates to organizations or public service users and relationships between organizations or users; thus, the societal elements (e.g., welfare in a region) of public service value are beyond the scope of this study.

We examine the following research questions: (1) What are the main components of public procurement value? and (2) What are the practices that support value creation in public procurement? In answering these questions, we conduct a systematic literature review and content analysis of 171 relevant research articles to identify the potential constituents of the value of public procurement and the practices required to attain value. The study contributes to the literature by offering a multidimensional conceptual framework, a structured summary of the value components and associated practices, and application of the PBV, a theoretical lens proposed but underutilized in the domain of public procurement. Based on the findings, we provide an agenda for future research to initiate relevant inquiries into the eminent phenomenon of public value.

2. Theoretical underpinnings: A supply chain practice-based view on public procurement

This study builds on the PBV (Bromiley and Rau, 2014, 2016), which explains the differences in organizations' performances by the practices that the organizations adopt. More specifically, the PBV highlights the importance of understanding how the performance impact is generated through practices adoption and examines this impact by comparing the performance differences among adopters versus non-adopters. Bromiley and Rau (2014) emphasize that activities or practices, which may be very complex, can be imitated and adopted among many organizations. Moreover, the PBV implies that understanding and diffusion of potentially effective and transferable practices among market actors may improve the performance of underperforming organizations (Bromiley and Rau, 2014, 2016), and thus, support market development. Despite some criticism (e.g., Jarzabkowski et al., 2016a; 2016b), the PBV has attracted considerable research interest but has yet to become a well-recognized approach.

The PBV was extended by Carter et al.'s (2017) supply chain practice view (SCPV) to the interorganizational level of analysis. The need for the SCPV arises from the fact that supply chain management (SCM) practices (e.g., supplier quality management) often extend firm boundaries and stretch to supply chain partners (Carter et al., 2017). Differently from the original PBV, the SCPV also considers combined performance across organizations. According to (Carter et al., 2017, p. 116), "a central tenet of the SCPV is that imitable interorganizational SCM practices can explain performance differences, both within and across organizations."

We believe that our theoretical lenses of the PBV and its extension, the SCPV, are especially appealing for the public procurement context. First, although some competitive forces may influence the public sector, public organizations are not as profit-driven as private firms. Public organizations operate under different circumstances: they follow rather tight regulations that emphasize the delivery of value for the society and receive money inflow in a form of taxes and states' budget (Arlbjørn and Freytag, 2012). Thus, we claim that public procurement research should focus on the performance of public organizations rather than on their competitive advantage. The PBV's postulate, that adopted practices explain performance differences, fits the public context well.

Second, although private companies might be interested in disseminating their effective practices, for example, to suppliers to improve the relational performance (Carter et al., 2017), a risk might be associated with revealing their sources of competitive advantage. Due to the bounded rationality (Simon, 1955) described in the causal ambiguity paradox (Lado et al., 2006), firms are not able to fully understand the value-enhancing attributes of practices and resources and disclose them. In contrast, because the public sector should create value for society, transferring impactful means and value creative practices to improve the performance of a public sector appears as a goal rather than a risk.

Last, the SCPV discusses performance as "the economic (encompassing operational, market, and financial performance), social, and/or environmental performance of an organization, interorganizational dyad, or interorganizational network" (Carter et al., 2017, p. 116), highlighting the interorganizational context. Similarly, public procurement practices can impact the performance of the public organization that employs them, but can also affect its extended network of suppliers,

consumers, and the public.

The performance of the public organization is often difficult to assess because of a frequently convergent opinion of stakeholders on the nature of this performance (Bacanu, 2016). The feasible way to understand the performance of the public organization is through the amount of public value it creates (Bryson et al., 2006). Public value creation in the context of inter-organizational collaboration was defined by Page et al. (2015) as "the extent to which a cross-sector collaboration achieves its overarching and subsidiary purposes, meets applicable mandates, and achieves lasting and widespread benefits at a reasonable cost that no single organization could have achieved alone in a democratically accountable way" (p. 716). Democratic accountability refers to responding to and addressing the concerns of the citizens and elected leaders in a way that ensures that established rules and procedures for procurement are not violated (Telgen et al., 2012). Public procurement practices are seen here as explaining, to some extent, its performance in terms of the amount of value created. In this study, we focus on effective practices adopted by public organizations potentially contributing to value creation, and thus, refer to them as means of creating value.

Practice in the context of the PBV can be defined as an "activity or set of activities that a variety of firms might execute" (Bromiley and Rau, 2014, p. 1249). In the context of this study, we use the term *practice* to refer broadly to an activity or set of activities that public actors might execute either alone or with other organizations. Similar to Carter et al.'s (2017) and Day and Lichtenstein (2006), we, therefore, more specifically define *PSM practices* as a narrower set of purchasing activities of public organization that relate to internal supply chain processes and externally-focused supply chain management practices.

Specifically, we classify PSM practices in the context of public procurement into different categories following existing PSM practices classifications developed by Zimmermann and Foerstl (2014), Kaynak and Hartley (2008), and Terpend et al. (2008). We distinguish internal PSM practices that are contained within the firm and external PSM practices that cross organizational boundaries (Kaynak and Hartley, 2008). Internal PSM practices can be further classified into four sub-categories (Zimmermann and Foerstl, 2014): (i) vertically aligned PSM practices that imply the practice should align with the organization's overall strategic goals, (ii) cross-functional PSM practices that refer to PSM practices integrated with other functions of the organization's internal value chain, (iii) within PSM practices that refer to internal practices within an organization's functional boundaries, and (iv) enabling PSM practices that encompass the practices facilitating PSM capability building (e.g., investment in the development of procurement capability). External PSM practices consist of two sub-categories (Zimmermann and Foerstl, 2014): (i) relational PSM practices that encompass practices in which two or more supply chain actors deploy their resources and collaborate on a common goal, and (ii) non-relational PSM practices that require resource deployment solely from the buyer rather than from other supply chain actors.

In this study we propose that the performance outcome of the public procurement function can be evaluated in terms of the value achieved for stakeholders. Following the main premises of the PBV and SPBV to understand the impact of different PSM practices on the performance of public procurement, research needs to connect the fragmented knowledge on how different types of practice relate with different types of values. The three perspectives we adopt (i.e., public buyer, supplier, and user) distinguish the performance outcomes since the value is not universal but representing the concerns of actors who are defining it (Uyarra et al., 2019). Overall, recognizing and transferring practices leading to the higher performance of public procurement becomes an end in itself and the main purpose of the present study.

3. Method

The mature and diverse public procurement research field incorporates many research topics. Various studies report stakeholder benefits that can be achieved through public procurement. However, the knowledge related to value components of public procurement and corresponding practices is fragmented and lacks a coherent framework. The literature review is an eminent research genre that allows researchers to improve the body of knowledge by a process of accumulation (Durach et al., 2017; Schryen, 2015). The research method helps to advance the theory by connecting the fragmented bodies of evidence and deriving novel interpretation and reconceptualization through integration (Durach et al., 2017; Elsbach and Knippenberg, 2020; Schryen, 2015).

In this study, we apply a systematic, content analysis-based literature review rather than a narrative review to warrant more unbiased and reliable research while analyzing and synthesizing research developments by locating relevant data from multiple sources. First, we synthesize the existing research on value creation in public procurement from three perspectives: the public buyer, supplier, and user. Second, we develop a comprehensive summary of the public procurement practices reported in previous studies that contribute to value creation. Last, we establish a link between different types of value components and public procurement practices through an iterative, multistep process of conceptualization. The method flow chart of this study is presented in Fig. 1 and is explained in more detail in the following part of this section.

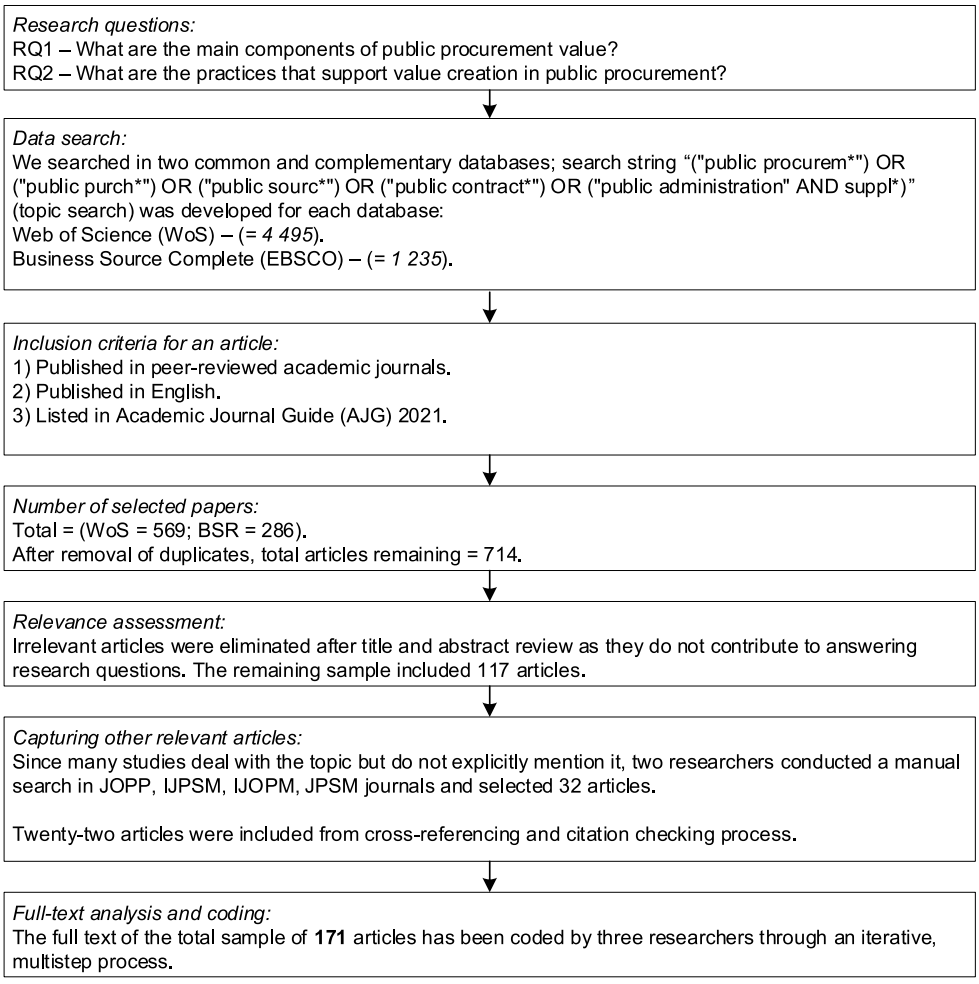
3.1. Literature search

The data were collected from two databases: ISI Web of Science database (WoS) and Business Source Complete (EBSCO). These two databases were selected as they are generally considered comprehensive databases that index top-ranked journals with a wide coverage of public procurement topics and have been previously used in public procurement studies (e.g., Trammell et al., 2020). We collected the data using a two-level keyword formulation with the string connector "AND" within each level and the connector "OR" between levels. We first searched for articles applying the search string "("public procurem*") OR ("public purch*") OR ("public sourc*") OR ("public contract*") OR ("public administration" AND suppl*)". We searched for keywords within the article's title, keyword list, and abstract. The keywords were selected in a manner that allowed for capturing studies relevant to our research. Since public procurement literature often discusses value without using the term "value," we did not require sample articles to mention "value" in their title, keyword list, and/or abstract. Additionally, similar to Akın Ateş et al. (2021), two of the authors conducted an extensive manual search in a number of CABS Academic Journal Guide (AJG) listed and supply chain and public procurement-oriented journals (see Fig. 1 Note for list of journals) to capture other relevant articles. Finally, an additional set of articles has been included from the cross-referencing and citation checking process. The final dataset included a total of 171 articles. The data collection was conducted in November 2021.

3.2. Inclusion criteria and procedure

The data collection process included several inclusion criteria. First, we excluded research that has not been published in peer-review journals, such as conference proceedings, books chapters, and working papers. Second, we retained only studies published in English. Third, to eliminate the papers published in predatory journals, we selected only articles published in journals listed in AJG 2021. We have chosen not to restrict our sample to articles published in top-rank journals, however, as many relevant and innovative works on the topic are frequently published in lesser-ranked journals (Obwegeser and Müller, 2018).

Two authors assessed each data sample candidate. During this process, they examined the abstract of each article and excluded the irrelevant ones. First, we excluded articles that focus solely on barriers to supplier participation in public procurement. Second, we removed papers that discuss public value but do not focus on public procurement functions. Third, we kept out politically focused studies and those that



Note: JOPP, Journal of Public Procurement; IJPSM, International Journal of Public Sector Management; IJOPM, International Journal of Operations & Production Management; JPSM, Journal of Purchasing & Supply Management.

Fig. 1. The systematic literature review process.

analyze the macro-processes of the public administration function. Lastly, we retained the papers that discuss practices and value components associated with public procurement collaboration, but excluded studies specifically focused on the aspects of public-private partnership since the governance models for this partnership differ greatly from conventional procurement (Wang et al., 2018) and are beyond the scope of our review.

3.3. Coding scheme and procedure

Three authors performed the iterative, multistep coding procedure adopted in this study. First, we coded the basic information (i.e., year of publication, journal, applied methodology). Second, we coded the paper's unit of analysis depicting the part of the supply chain that is investigated in a study (Durach et al., 2017). Finally, two authors reviewed and coded the full text of the articles in our sample following meticulous coding guidelines (Corbin and Strauss, 1990; Strauss and Corbin, 1998).

The process began with "open coding" (Corbin and Strauss, 1990) of value components and corresponding practices based on in vivo statements in the sample papers. We coded a statement as value-related when it referred to a positive outcome benefitting the buyer, supplier, or end-user and contributed to the outcome by procurement activities. We coded a statement as a practice if it related to PSM practices necessary to create the specified public procurement value benefitting the buyer, supplier, or end-user. Notably, in the coding process, we focused primarily on the study's findings. In case the value component and related PSM practice were mentioned in the narrative literature review part of the article, we referred to the cited work and included it in our sample (i.e., cross-referencing). The "in vivo" codes formed the basis for establishing first-order codes. First-order codes were additionally coded as being related to value components of either the public buyer, supplier, or user perspectives and labeled by researchers. This process resulted in more than 140 value components associated with almost 300 public procurement practices.

At the next stage, we coded similarities and differences to detect conceptual patterns (Glaser and Strauss, 1967) among these first-order concepts (related to either value components or practices), which helped us group them into second-order themes. The coding at this stage occurred with consideration for the extant public procurement literature (e.g., green public procurement (Testa et al., 2016); early supplier involvement practices (Zsidisin and Smith, 2005)), and when infeasible, new grouping themes were specified for value codes. This reiterative process of continuous back and forth dialogue that multiple researchers carried out with the theoretical findings of previous research helped to reduce expectancy bias (Durach et al., 2017). First-order practice codes were linked to the PSM practice categorization of Zimmermann and Foerstl (2014) in the process of axial coding.

Lastly, the link between practice and value components has been derived from the data in the findings and results of the sample articles.

The coding of the relationship was based on (i) specific wording used in the qualitative paper findings (e.g., "[Interviewees] mentioned *the significance of* holding dedicated buyer-suppliers meets from time-to-time to attract SMEs" (Patil, 2017, p. 15)); (ii) results of hypothesis testing or secondary data analysis; and (iii) outcomes of the simulation or mathematical modeling. Lastly, during the validation process, the third co-author and external researcher assessed the results of analysis (Durach et al., 2017). This reflexive process helped improve the original framework.

4. Descriptive analysis

In the following, we present the descriptive statistics of the data sample. We begin with a yearly analysis of the articles. This is followed by a discussion of the most popular journals. As the articles' methodologies are of interest, we conclude with a discussion of the different methods. Lastly, we categorize sample papers according to the unit of analysis and type of purchase.

4.1. Distribution of articles by year

The distribution of the articles by year ranged from 1994 to 2021. Fig. 2 presents the articles according to their years of publication. Data collection was carried out in November 2021, hence, the year 2021 is not fully covered in our sample. During the period from 1994 to 2011, the number of published articles was relatively low (average of 3.0 publications per year). Starting in 2012, the number increased until 2020 with an average of 15.7 articles published per year. The slope of the graph gives a clear sign that the topic of public procurement is gaining attention among academics and stresses the potential significance of the field and its future growth.

4.2. Distribution of articles by journal

The 171 articles were published in 52 journals. Table 1 lists the journals and the number of papers published in each. Among them, the Journal of Public Procurement (38 articles, 22.2 percent) and the Journal of Purchasing and Supply Management (22 articles, 12.9 percent) published the highest number in the dataset. The Journal of Cleaner Production (16 articles, 9.4 percent) was third. Notably, 44.2 percent of all journals identified have published more than one paper from our sample.

4.3. Methodologies and type of study

Table 2 presents the distribution of the methodologies in the articles in the sample. Case study and survey were the most popular methodologies; the number of articles applying experimental or mixed methods is limited.

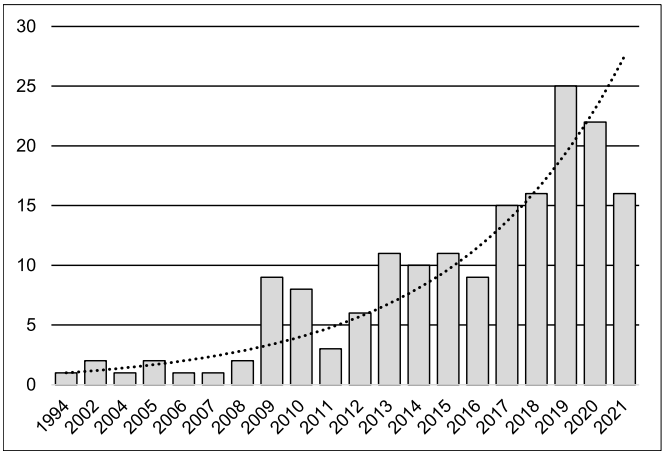


Fig. 2. Articles published per year (1994–2021).

Table 1
Distribution of reviewed articles by journal.

Journal name	No. of articles	%
Journal of Public Procurement	38	22.2
Journal of Purchasing and Supply Management	22	12.9
Journal of Cleaner Production	16	9.4
International Journal of Public Sector Management	8	4.7
Research Policy	7	4.1
Technovation	5	2.9
Innovation: The European Journal of Social Science Research	4	2.3
International Journal of Operations & Production Management	4	2.3
Public Administration	4	2.3
Science and Public Policy	4	2.3
European Planning Studies	3	1.8
Journal of Environmental Management	3	1.8
Public Management Review	3	1.8
Technological Forecasting and Social Change	3	1.8
Other	47	27.4
Total	171	100.0

Table 2
Applied methodologies.

Methodology	Article reference number
Case study	3; 6; 8; 9; 10; 15; 17; 20; 24; 26; 32; 37; 38; 40; 45; 48; 51; 54; 57; 62; 64; 71; 74; 75; 78; 79; 85; 86; 87; 89; 91; 95; 100; 103; 105; 107; 108; 109; 110; 118; 119; 121; 127; 133; 140; 143; 144; 147; 151; 152; 153; 159; 160; 162
Survey	2; 12; 13; 21; 27; 31; 35; 39; 43; 46; 47; 49; 50; 59; 61; 63; 65; 72; 73; 76; 80; 88; 97; 102; 106; 112; 113; 117; 122; 130; 131; 136; 141; 145; 146; 155; 156; 157; 161; 164; 165; 167
Conceptual	23; 29; 30; 33; 41; 55; 69; 93; 98; 99; 104; 111; 114; 138; 163; 166; 169; 170
Content analysis	11; 18; 22; 28; 52; 58; 60; 66; 81; 82; 83; 115; 124; 129; 171
Mathematical modeling	4; 25; 34; 67; 68; 70; 123; 132; 134; 135; 137; 139; 5; 14
Secondary data analysis	36; 120; 44; 101; 142; 149; 150; 154; 158; 68
Interviews	77; 92; 125; 128; 19; 148
Literature review	1; 42; 90; 126
Simulation	7; 16; 53; 96
Experiment	56; 84
Mixed method	94; 116

4.4. Unit of analysis and type of purchase

Fig. 3 presents the distribution of units of analysis and types of purchases in the sample articles. It clearly shows that the majority of the articles adopt the buyer as the unit of analysis. This perspective's popularity is understandable as the public buyer is the main actor and coordinator of the public procurement process. Thirty articles in the sample analyze public procurement from a supplier's perspective and only one paper focuses specifically on the user. There are a number of studies that analyze public procurement from dyadic, triadic, or network perspectives. The type of purchase is defined in most empirical papers. We can see that more articles in our sample research in the context of goods and service purchases and less concentrate specifically on either goods or services. Notably, due to limited number of studies being focus on works, they were assigned to the "Service" category. Lastly, as many surveys and content analysis articles do not define the type of purchase explicitly, they were assigned to the "Not defined" category.

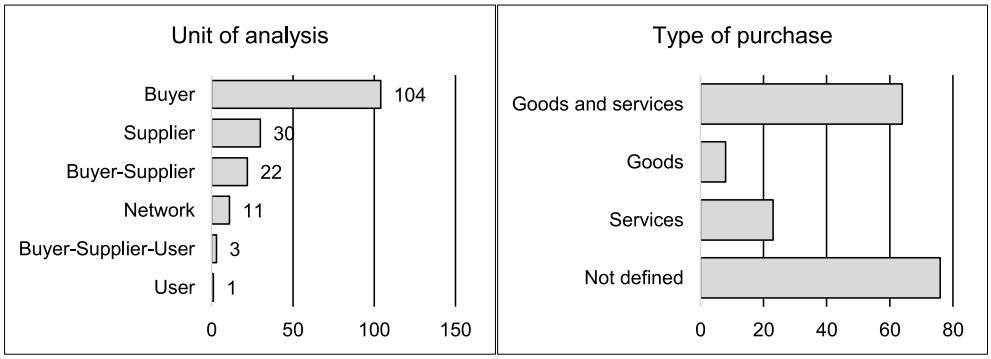


Fig. 3. Unit of analysis and type of purchase.

5. Public procurement value components

5.1. The supplier value perspective

The summary of the results from the supplier's value perspective is presented in Table 3. Analysis reveals that suppliers can obtain four forms of value from public procurement: (i) improved innovativeness, (ii) new market opportunities, (iii) better operative capabilities, and (iv) improved sustainable performance.

One of the potentially important impacts of public procurement is its role in driving innovation. Public buyers may not only provide suppliers with necessary financial (Veugelers, 2012) and knowledge support (Florio et al., 2018), but may also become the first customer of the innovative product, ready to test it for a larger market (Cohen and Amorós, 2014). Suppliers value the public funding received as longer-term R&D investments for innovative projects that otherwise would be neglected (Veugelers, 2012). Another valuable source of support that the suppliers can receive from the public buyers is the possibility of experimenting with new technology and its application in the public sector (Selviaridis, 2020). Furthermore, public buyers can reduce uncertainty and perceived risks related to R&D and new product development (Whyles et al., 2015). Collaboration with a technologically advanced public buyer (e.g., the European Organization for Nuclear Research (CERN)) can improve the supplier's technical know-how, and encourage the development of new products, services, and technologies (Åberg and Bengtson, 2015). Knowledge access and inter-firm networks are an essential benefit that the public buyer may provide to its suppliers (e.g., Alhola et al., 2019; Caloghirou et al., 2016). Notably, following Igel and Islam (2001) in our categorization we separate the value components related to innovative and operative capabilities (discussed later in this sub-section).

Additionally, public procurement may create value for suppliers in terms of opening up the opportunity to supply to new markets (e.g., Groznik and Trkman, 2009; Saastamoinen et al., 2021). A supplier's cooperation with the public buyer may improve the business reputation of the former and, indirectly, its market performance (Correia et al., 2013; Guerzoni and Raiteri, 2015). Through purchasing, the public sector may help demonstrate the benefit of the product to potential users in other markets, allowing suppliers to gain a competitive advantage in the foreign markets (Veugelers, 2012). The importance of small and medium enterprises (SMEs) to overall economic growth is a well-researched topic (Wang et al., 2007). Participation in public procurement can create additional growth opportunities for small- and medium-sized suppliers (SMEs) (e.g., Albano et al., 2015; Loader, 2015; Windapo et al., 2020). Lastly, public procurement may bring value to suppliers in a form of reducing the market distortions and ensuring free and open competition in a market (Myoken, 2010).

Participation in public tendering may not only open up new supply opportunities but also can have a positive impact on suppliers' capabilities. Suppliers may achieve value from public procurement in a form of learning and development of new organizational capabilities such as absorption capacity, human resources, and productive structure (e.g., Åberg and Bengtson, 2015; Sánchez-Carreira et al., 2019). Another value component that suppliers can gain is the enhanced flexibility of the project or product development process as Sparrevik et al. (2018) highlighted. Moreover, Bohari et al. (2017), when reporting the interview findings, highlighted that participating in public procurement projects can help suppliers "to reduce the cost in the long run" (p. 697). Lastly, Schiele (2020) reported that suppliers can benefit from participation in public procurement in terms of operative excellence.

Our analysis shows that the sustainable performance of suppliers may improve as a result of collaborating with public buyers. For example, if public buyers require CSR compliance from their suppliers, this demand may encourage suppliers to make additional efforts to adopt the CSR principles in order to participate in the tender (Snider et al., 2013). Another aspect of value that may benefit suppliers is an advancement in green technology which not only may improve the sustainable performance of the current project with public buyers but the overall environmental sustainability of supplier firms (Lundberg et al., 2015). In their study, Rietbergen and Blok (2013) reported that suppliers' sustainable performance in terms of CO_2 emission reduction may also improve as a result of collaborating with public buyers. Lastly, additional environmental sustainability can be achieved by a supplier of the public organization through the process of value internalization, which implies that suppliers have identified and accepted a public procurement partner's values with regards to green public procurement (Roehrich et al., 2017).

5.2. Value of public procurement: public buyer perspective

The public buyer is the principal actor in the public procurement function. The value components of the public buyer perspective can be classified as (i) innovation generation and promotion, (ii) well-functioning supplier market, (iii) public procurement process effectiveness, and (iv) sustainable public procurement. The value components of the public buyer are presented in Table 3 and described below.

Notably, value is subjective concept (Meynhardt, 2015), and although the overall value of public buyers is to increase the perceived value for the user, the public buyer may benefit from more specific value components. In our study, we separate public buyer value and user value but acknowledge their strong interconnectedness.

The immense innovation potential of public procurement has gained notable attention in the analyzed literature. For example, the public buyer can shape markets and demands for innovation (Miller and Lehoux, 2020), encourage more innovative solutions as an outcome of the procurement process (Storsjo and Kachali, 2017), stimulate R&D investments (Caravella and Crespi, 2020), and create successful service innovation (Holma et al., 2020). Public procurement can generate value in the form of diffusing innovation by accelerating the uptake of products and services (e.g., Chicot and Matt, 2018; Edler and Yeow, 2016).

Table 3
Value components obtained by public procurement actors (i.e., supplier, buyer, user).

Supplier [*Article reference number*]	Public buyer [*Article reference number*]	User (consumer) [*Article reference number*]
Improved supplier innovativeness	**Innovation generation and promotion**	**Availability of product/service**
1) Reduction in the uncertainty of the innovation process [37; 46; 51; 84; 112]	1) Innovation triggering [20; 21; 23; 33; 38; 42; 50; 56; 79; 81; 89; 98; 105; 114; 118; 143; 144; 146; 148; 152; 153, 160; 162]	1) Service availability and location access [100; 121]
2) Increase in the effectiveness of R&D and innovation [6; 33; 47; 60]	2) Diffusion of innovation [36; 38; 42; 62; 111; 113]	2) Market availability [4]
3) R&D investment for supplier [50; 62; 113; 144; 145; 152]	3) Continuous innovation [38; 86]	3) Service coverage [140]
4) Enhanced learning from a knowledge-intensive network [8; 20; 81; 163]	**Well-functioning supplier market**	**Quality of product/service**
5) Improvements in technical know-how [19; 47]	1) Market competition effect [44; 91; 111]	1) Improved public services [34; 42; 89; 115; 125; 127; 129; 138; 158; 168]
6) Opportunity to access to scarce resources [48]	2) Market stability [82; 91]	2) High end-user satisfaction [55; 111; 126; 137; 139]
7) Development of new products, services, and technologies [24]	3) Market growth [22; 33]	3) Improved quality of product [15; 25; 33; 105; 143; 147]
8) Testing of the scalability of technology to a broader market [29]	**Public procurement process effectiveness**	4) High value-in-use of the end product [3; 61; 110]
New and improved market opportunities	1) Equality and transparency in the procurement process [31; 41; 43; 45; 52; 70; 73; 92; 94; 107; 110; 131; 136]	5) High innovativeness of the end product [4]
1) Local SMEs' growth [7; 21; 57; 66; 80; 91; 106; 128; 131]	2) Procurement process efficiency [12; 59; 74; 82; 83; 86; 87; 99; 104; 108; 119; 132; 144; 149; 166; 169]	6) User effect [124]
2) Market growth opportunity [55; 63; 74; 83; 88; 92; 95; 154; 157]	3) Cost certainty and improved risk management in procurement process [20; 32; 38; 44; 50; 51; 62; 65; 71; 86; 87; 94; 95; 96; 110; 112; 143]	7) Technical quality [123]
3) Reputational benefits [30; 56; 114; 117; 144; 157]	4) High competition among the bidders [54; 77; 104; 123; 136]	**Environmental and social sustainability**
4) Higher sales volume [49; 138; 139]	5) Improved status and recognition of public organization [9; 11; 73; 86; 91; 101; 169]	1) High social return on investment [78; 85; 92; 114; 115; 117; 126; 138; 167]
5) Enhanced inter-firm collaboration [50; 111]	6) Better supplier selection process [31; 65; 66]	2) Reduction in social inequality [19; 48; 61; 109; 113; 127; 143; 170; 171]
6) Reduction of the market distortions [23; 148]	7) Control of corruption [53; 67; 83]	3) Safety of employees [106; 122]
7) Higher profitability [84; 90]	8) Collaborative goal achievement between supplier and public buyer [97; 105; 116]	4) Creating environmental value for society [18]
8) Competitive advantage in other/foreign markets [113]	9) Reduced information asymmetry [91; 105; 122]	5) Improved working conditions for employees [73; 127]
9) Networking opportunity for start-ups [54; 144]	10) Organizational learning [101; 133]	6) Delivery of community benefits [74]
Better operative capabilities	11) Fewer complaints and errors in the procurement process [31; 103]	7) Eco-friendly learning of end-user [28]
1) Improved technological capabilities of the supplier firm(s) [3; 18; 36; 72; 111]	12) Agility of procurement process [75]	8) Improvement of health and safety performance over time [27]
2) Organizational learning [101; 126; 136; 153; 157]	13) Improved opportunity seizing ability [64]	9) Municipal sustainability challenges addressed [29]
3) Flexibility in product/project development [103]	14) Supplier compliance [27]	10) Promotion of human rights [69]
4) Long-term cost efficiency [17]	15) Reliability and robustness of the purchasing process [1]	11) Reducing the environmental impact of products, services, and works [17]
5) Operative excellence [88]	16) Uncertainty reduction [105]	
6) SMEs building up their knowledge and capabilities [81]	**Sustainable public procurement**	
Improved sustainable performance	1) Green public procurement [5; 13; 14; 15; 17; 49; 58; 76; 95; 97; 125; 130; 148; 155; 156; 161; 164; 165]	
1) Enhancement in green technology development [68]	2) Environmental savings [10; 26; 48; 86]	
2) CO_2 emissions reduction [134]	3) Environmental innovation [39; 40; 72]	
3) Environmental sustainability achieved through value internalization [125]	4) Life cycle management [35; 103]	
4) Improved CSR compliance [102]	5) Procurement of solutions sustainable in the long-term [86; 130; 143]	
	6) Circular economy [8; 147]	
	7) Low carbon procurement [30]	

When a prominent innovation cannot gain early adoption momentum, public procurement participation in innovation acquisition may improve private buyers' willingness to pursue a new technology or service (Sánchez-Carreira et al., 2019). Lastly, responsive public procurement may successfully contribute to the creation of high-performance solutions and continuous innovation (Edler and Yeow, 2016; Oruezabala and Rico, 2012).

Besides driving innovation, the public sector can create additional value in the form of a well-functioning supplier market. By stating and pursuing clear goals to secure supply, the public buyer may increase supply market resilience (Pazirandeh and Norrman, 2014). A public organization can make a strategic decision to purchase items from outside their region in order to speed up knowledge diffusion (Li and Georghiou, 2016) or purchase locally to support SMEs or encourage new local market entries (Pazirandeh and Norrman, 2014). Through public purchasing, buyers may inspire firms to engage in new areas of activity (Rothwell, 1994) and thus, create more versatile supplier options. Importantly, public procurement has the potential to impact the market on a macro level and achieve immense value in the form of healthy competition in the market (Estache and Iimi, 2011; Pazirandeh and Norrman, 2014; Uyarra and Flanagan, 2010) and market stability (Murray, 2009; Pazirandeh and Norrman, 2014).

Public procurement can create value in a form of the overall effectiveness of the procurement process. For example, the public buyer may benefit from high competition among the bidders in the tender (e.g., Marinelli and Antoniou, 2020; Talebi et al., 2021; Yakovlev et al., 2018), fewer complaints and errors in the procurement process (Costa et al., 2013; Sparrevik et al., 2018), and agility of the procurement process (Meehan et al., 2017). Enhanced status and recognition (e.g., Jason Anastasopoulos and Whitford, 2019; Patrucco et al., 2019) is another

important value component for public buyers. In supplier selection, efficient processes take less time and bureaucracy (Costa et al., 2013; Loader, 2010), increase equality and transparency (e.g., Erridge and Greer, 2002; Flynn and Davis, 2014; Larson, 2009), and lead to improved compliance (Chiarini et al., 2017). For public buyers, cost certainty and efficient risk management ensure continuity of the deliveries, support legitimacy of the contracts, and reduces information asymmetry (e.g., Pazirandeh and Norrman, 2014; Storsjö and Kachali, 2017). Some studies in our sample highlighted the value created in the form of organizational learning (Hartmann et al., 2014; Simcoe and Toffel, 2014) and improved the opportunity-seizing ability (Loader and Norton, 2015).

Many studies showed that public buyers can create sustainable value by adopting various sets of practices. For instance, public procurement can contribute to the achievement of environmental savings (e.g., Allen, 2021; Cerutti et al., 2016; Rodrigues et al., 2018), produce environmental innovations (e.g., Eikelboom et al., 2018; Zelenbabic, 2015), or generate solutions that are sustainable in the long-term (Oruezabala and Rico, 2012; Testa et al., 2016). Some studies in our sample pointed out other related benefits associated with public procurement, such as green public procurement (e.g., Ahsan and Rahman, 2017; Igarashi et al., 2017; Liu et al., 2021), successful life cycle management (De Giacomo et al., 2019; Sparrevik et al., 2018), and circular economy (Alhola et al., 2019).

5.3. Value of public procurement: user perspective

Analysis of the user value perspective revealed three main value components identified in the previous research: (i) service or product availability, (ii) quality of the product or service, and (iii) environmental and social sustainability. The results for the user perspective are summarized in Table 3.

The important value components that users benefit from include public service availability and location access (e.g., Jääskeläinen and Lönnqvist, 2011; Sillanpää, 2013), and service coverage (Cunha Marques and Berg, 2011). The analysis revealed that public procurement not only can support overall supplier market growth but also can have a positive societal impact on companies' employees, who are not directly involved with the public buyer but potentially benefit indirectly from the established cooperation, for example, in terms of increased employment in the region (Preuss, 2009).

The quality of the product and service has an important place in the users' value perspective. As public buyers represent users' needs in their purchase decisions, users wish to see continuous improvement in the quality of the product and/or service (Li and Georghiou, 2016; Meehan et al., 2017). Another important sub-component related to high-value-in-use can be achieved by public buyers through the establishment of dialogue-related activities facilitating communication between the procurer and the user (Torvinen and Ulkuniemi, 2016). For example, users' effective involvement in the procurement process is a practice that improves value-in-use (Torvinen and Haukipuro, 2018). Among others, this includes training sessions and feedback collection that not only elevate the created value-in-use but also positively influence end-user satisfaction (Torvinen and Ulkuniemi, 2016). At the same time, users' negative experiences with a service may lead to the creation of negative value, for example, in the case when users share their dissatisfaction with low ratings for public services and consequently, lead to the latter's bad reputation (Jääskeläinen and Lönnqvist, 2011).

A highlighted viewpoint to user value relates to sustainability-related value. By making purchased products or services widely available to the public, the buyer can help reduce social inequality (Veugelers, 2012). Moreover, through social enterprises' capacity-building activities, public purchasers can address social issues (Preuss, 2009). Public buyers can create additional social value related to the promotion of human rights (Martin-Ortega et al., 2015) and the safety of clients (Jääskeläinen and Lönnqvist, 2011; Tammi et al., 2020) by introducing specific contract performance conditions to suppliers or requesting their compliance with certification standards.

6. PSM practices as a means of creating value

The value that public procurement creates could be greatly improved through the application of the specific PSM practices. Thus, the adoption or non-adoption of certain practices may explain the differences in value-creation performance between public organizations. Although the means of creating value have been mentioned in the literature, they have not been systematically linked to different value components. Existing studies on the role of public procurement in value creation discuss either narrow areas of value such as innovations or refer more broadly to increased value for public money. The present review provides a more coherent and holistic overview of how certain activities and/or sets of activities correspond to certain value components created for different stakeholders. To further structure the identified practices and develop a clear guideline for practitioners, we utilized the classification of PSM practices proposed by Zimmermann and Foerstl (2014) to analyze the means of creating value. Notably, some means reported in the literature were described in more general, societal terms (e.g., public policies or strategic objectives) and could not be directly linked to any of the PSM practices. The types of PSM practices required to create a specific value component are summarized in Table 4 and discussed further.

6.1. Internal PSM practices

6.1.1. Vertically aligned PSM practices

The first type of PSM practice identified during analysis is a vertically aligned PSM practice. This type includes practices that ensure that the PSM function is aligned with the overall strategic goals of the public organization (Zimmermann and Foerstl, 2014). Public procurement is very contextual, and its processes, practices, and activities often need to correspond to the overall agenda and direction set at the policy level. The practices categorized as vertically aligned are related largely to the aims that the government emphasized. These practices include (i) environmentally-oriented demand-side practices (e.g., Alhola et al., 2019; Bakir et al., 2018) that relate to environmentally focused policy goals such as green public procurement or circular economy, (ii) socially-oriented demand-side practices (Chiarini et al., 2017; Cohen et al., 2014) that correspond to social policy agenda, (iii) product lifecycle-oriented procurement practices (Correia et al., 2013; Oruezabala and Rico, 2012) that relate to implementing the life-cycle targets of procured products/services (iv) instructive practices for procurement (e.g., Bohari et al., 2017; Harland et al., 2019), that ensure that public organization is supplied with necessary instructions to fulfill the policy goals, and (v) innovation-inducing demand-side practices (e.g., Caravella and Crespi, 2020; Whyles et al., 2015) that emphasize the demands for innovation in the public procurement function.

6.1.2. Enabling PSM practices

The second type of PSM practice established in the sample articles is enabling PSM practices. The aim of enabling PSM practices is to facilitate the development of PSM capability in a public organization. While most of the practices falling under this type are directed towards public procurement process effectiveness, they can contribute to the creation of various value components benefiting public procurement stakeholders. Enabling PSM practices include (i) risk-reducing practices that are targeting risk avoidance, mitigation, and management (Bala et al., 2008; Uyarra et al., 2019); (ii) image-building practices that ensure the public buyer is considered a reliable and beneficial partner and market actor (Kuitert et al., 2019; Purchase et al., 2009); (iii) benchmarking practices that relate to learning from the best practices of others (Kumar et al., 2015; Nijboer et al., 2017); (iv) e-procurement practices that include activities associated with the establishment and well-functioning e-procurement process (Albano et al., 2015; Carayannis and Popescu,

Table 4
PSM practices adopted by public procurement actors (i.e., supplier, buyer, user).

Type of PSM practice [*Article reference number*]	Definition of PSM practice type	Examples of PSM practices identified in sample articles
Vertically aligned PSM practices	**Imply the practice should be aligned with the overall strategic goals of public organization**	
Environmentally oriented demand-side practices [8; 14; 15; 17; 18; 26; 68; 97; 101; 125; 130; 147; 164]	Practices related to implementing the environmental targets in product or process offering	The procurement of new circular products; progressive introduction of environmental criteria in the tenders; purchasing the products with ecolabel integration
Socially oriented demand-side practices [27; 29; 33; 78; 113; 114]	Practices related to the alteration of public procurement demand in order to enhance the importance of the social component in product or process offering	Creation of products and services that are then widely available to the public; public buyers asking suppliers to follow voluntary documents for improving personnel's safety performance; social procurement practices adopted by the public buyer which require companies tendering to train and employ ex-offenders on their projects
Product lifecycle-oriented procurement practices [30; 86; 160]	Practices related to implementing the life-cycle targets of procured products/services	Public buyer procuring goods, services, etc., with a reduced carbon footprint throughout their life cycle; evaluating the global performance of public buyer from conception to recycling of any equipment or purchased material
Instructive practices for procurement [17; 57; 76; 101; 105; 116; 155; 156; 165; 169]	Practices aiming at the establishment of standardized procedures and processes of the public procurement process	Practices supporting the establishment of better guidance from higher authorities; development and availability of green procurement guidelines; the private supplier's adoption of similar standards adopted by public procurement
Innovation-inducing demand-side practices [21; 37; 38; 47; 50; 62; 81; 111]	Practices aiming at adopting contemporaneous supply-side measures by the public buyer	Inclusion of innovative demand in procurement contracts; demand for goods or services that do not yet exist; creating standards or promoting convergence to a single standard
Enabling PSM practices	**Encompass the practices facilitating the PSM capability building**	
Risk-reducing practices [3; 15; 47; 62; 74; 91; 105; 110; 112; 114; 136; 152; 160; 161]	Practices aiming for risk avoidance, mitigation, and management	Activities facilitating clarity and clear understanding of the potential costs associated with a procurement project; testing and piloting of new products by the public buyer; stockpiling practices; avoidance of skills and capacity shortages
Image-building practices [11; 108; 136; 144]	Practices oriented towards the development of a differentiating image that highlights the advantages of a public buyer	Learning about and improving the reputation of the public organization by employing machine learning practices; public buyer acting as a reliable partner aiming for predictability and commonality; improved employability as a source of a positive image for the supplier
Benchmarking practices [124; 132; 160]	Practices related to the public buyer analyzing the procurement process of other organizations in order to compare it with and improve its own	Learning from public procurement organizations located in other countries; benchmarking against other procurement organizations' best practice experiences; providing suppliers with subcontracting opportunities
E-procurement practices [7; 22; 31; 43; 66; 83; 86; 96; 128]	Practices related to the use of online technology to assist with the public procurement process	Implementation of electronic commerce solutions; adoption of public e-procurement practices; establishment of a centralized e-procurement platform; development of electronic tendering systems
Enabling individual-level practices within the public buyer [12; 13; 39; 49; 77; 97; 105; 116; 122; 130; 146; 149; 153; 169]	Practices oriented towards a public organization's capability building at the individual level that enables employees to better serve the public procurement function	Strengthen the personal, individual motivation of public buyers to contribute to green public procurement; training of public procurement employees
Managerial support practices [5; 49; 97]	Practices implying senior management support for positive changes, new practices, new ways of doing things, new mindset, etc.	Top management support for green public procurement; top management commitment to collaborative procurement
Within PSM practices	**Refer to internal practices within public organization's functional boundaries**	
Procurement development practices [9; 25; 35; 40; 43; 48; 49; 52; 59; 64; 110; 120; 123; 132; 143; 144; 166]	Practices aiming for the enhancement of public procurement function and associated processes	Using neutral language in the tender documentation; the analysis and monitoring of public buyer's performance outcomes; analysis of the average elapsed time for each step of the procurement process or the distribution of time taken
Contract management practices [15; 34; 48; 64; 66; 69; 91; 92; 98; 99; 103; 105; 117; 129; 131; 133; 138; 158; 168; 170]	Practices related to planning, administration, and award of a formal arrangement between public buyer and supplier	Shortening the contract duration; having shorter agreements with suppliers of products with higher development rates; including penalties in suppliers' contracts for failure to deliver; employment is delivered by suppliers as part of their contractual obligations with a public buyer; use of contract performance conditions by the public buyer to improve supplier's workers' rights
Supplier selection practices [1; 58; 61; 65; 76; 86; 94; 115; 125; 137]	Practices of supplier selection in which selection criteria are defined according to public procurement objectives for choosing the best supplier/proposal, instead of just being based on the cost decisions	Using environmental criteria as qualifiers early in the selection process or as part of other existing criteria; attaching more weight to environmental aspects in supplier selection; public buyer selecting, from different potential suppliers, the one having the best investment plan to maximize customer satisfaction; public buyer moving away from the pure price criterion in procurement by employing practices favoring national suppliers
Tender-related practices [20; 31; 32; 43; 44; 45; 48; 50; 64; 65; 66; 67; 71; 86; 89; 92; 104; 107; 111; 114; 115; 123; 128; 134; 131; 135; 154; 158; 163; 167; 170; 171]	Practices that can influence the level of participation of firms in particular tenders or homogeneity of those bidding	Adopting non-competitive procurement method; allowing an unlimited number of tender candidates; reduced procedure duration; unbundling approach to competitive bidding, especially if contracts are relatively large;

(*continued on next page*)

Table 4 (*continued*)

Type of PSM practice [*Article reference number*]	Definition of PSM practice type	Examples of PSM practices identified in sample articles
		establishment of a comprehensive, clear, objective, and accurate tender evaluation model
Supplier base-related practices [86; 162]	Practices related to the effective management of suppliers that are actively engaged with the public buyer	Reducing the number of referenced suppliers; focusing on fewer key suppliers
Cross-functional PSM practices	**Refer to PSM practices integrated with other functions of the public organization's internal value chain**	
Cross-functional integration practices [15; 41; 97]	Practices oriented towards building appropriate levels of integration and cooperation between the public organization's departments involved or related to the public procurement process	Effective coordination of procurement functions between public procurement departments; agreement among the departments involved in the provision of goods and services
Information-sharing practice within the buyer [77]	Practices related to dissemination of information, knowledge, and facts within a public buyer's organization	Sharing of information among those public buyer employees tasked with the implementation of the SCM through the use of technology
Relational PSM practices	**Encompass practices in which two or more supply chain actors deploy their resources and collaborate on a common goal**	
Trust-building practices [23; 85; 86; 88; 91; 103; 125]	Practices promoting a fair and transparent public procurement process and supply management	Elements of trust and benefits incorporated in the supplier contracts; adoption of socialization practices in low-trust situations; public buyer identifying and building trust with high-value suppliers
Cooperation-related practices [3; 17; 20; 33; 36; 40; 46; 54; 60; 72; 86; 95; 102; 128; 136; 140; 143; 152; 160]	Practices oriented towards building a cooperative relationship and partnership between public procurement actors	Procurement department makes claims for closer partnerships with top providers to enforce internal and external legitimacy; establishing informal and formal relations within networks; public buyer building a collaborative relationship with suppliers; practices ensuring that cooperation between supplier and public organization happens on a regular basis
Procurement network-building practice [46; 51; 55; 65; 72; 105; 139]	Practices facilitating and promoting the establishment of collaborative tiers between the current or potential public procurement actors	Joint procurement with two or more organizations; use of collaborative aggregation of purchases; technology partnership among stakeholders; establishment of innovation communities; establishment of relational-type governance structures that facilitate cooperation between supplier and the public buyer; high strength of inter-organizational ties of the public procurement network
Dialogue facilitation practices [23; 74; 95; 103; 116; 144; 152; 158; 159]	Practices facilitating higher levels of communication, liaison, and flexibility between suppliers, clients, and the public buyer	Collective learning activities and establishment of communication channels; establishing of formal and informal communication channels between the procurer and suppliers; reducing language barriers that would prevent a fruitful conversation
Early supplier involvement practices [29; 40; 87; 118; 119; 151]	Practices facilitating early supplier involvement in the public procurement process	Close and early engagement with the supplier; early supplier involvement in new product development; suppliers' early collaboration with a recognized municipality
Innovation intermediation [23; 33; 38; 50]	Practices related to the involvement of specialized innovation intermediaries who support the public buyer in complex procurement activities	Engaging intermediary professional actors to appraise prototype technologies
User engagement practices [89; 105; 109; 110; 114; 144; 149]	Practices oriented towards greater involvement of end-product or service users in the public procurement process	User engagement activities; end-user engagement within innovative public procurement; the continuous set of actions that aim to expand the role of service end-users by binding them into the value-adding process as co-creators of value; integrating users to evaluate services and goods procured by public buyer
Non-relational PSM practices	**Practices that require resource deployment only from the public buyer rather than from other supply chain actors**	
Supplier market driving practices [36; 54; 74; 82; 91; 92; 93; 106; 111; 113; 162]	Practices oriented towards creating, moving, and educating the supplier market	Public buyer signaling for private users encouraging the market to invest and develop new products, services, or technologies; providing incentives for new supply market entries
Information-sharing practice with supplier [13; 28; 63; 66; 74; 84; 91; 92; 131; 136]	Practices related to dissemination of information, knowledge, and facts to resolve information asymmetries between public buyer and supplier	Development of internet procurement portals and "Meet the Buyer" events; effective communication of regulations and facilitating easy access to information for suppliers; establishing a feedback loop for suppliers
Information-sharing practice with user [110]	Practices related to dissemination of information, knowledge, and facts to resolve information asymmetries between public buyer and end-user of product or service	Efficient response to end-user feedback; establishment of the communication channel between the procurer and the end-user during the project's planning phase
Information-sharing practice within the network of stakeholders [13; 15; 20; 74; 114; 146; 150; 165]	Practices related to dissemination of information, knowledge, and facts within the network of public procurement stakeholders	Establishing essential feedback loops in the public procurement system; information-sharing practices among actors involved in public procurement when assessing users' needs; public buyer updating the available information about green products and providing free samples
Supplier performance evaluation practice [10; 15; 75; 125; 132; 137; 164]	Practices oriented towards the development and establishment of tracking and monitoring systems for supplier performance	Design of supplier performance indicators; monitoring the discrepancies and development of improvement actions; adoption of non-price-based metrics of supplier evaluation
Supplier financial support practices [50; 62; 113]	Practices related to supplier receiving financial support from the public buyer with a purpose to develop its in-house capabilities	Grants for suppliers; R&D funding received from the public organization

2005); (v) enabling individual-level practices within the public buyer (Andersen and Jakobsen, 2018; Igarashi et al., 2017), and (vi) managerial support practices (Ahsan and Rahman, 2017; Liu et al., 2021). The last two sub-types of enabling practices are individual-level PSM practices that focus on empowering procurement employees and seeking the necessary support from managers, the importance of which has been greatly emphasized in private sector research (Fawcett et al., 2006; Rezali et al., 2018).

6.1.3. Within PSM practices

The third type of PSM practice observed in our samples is within PSM practices that correspond to internal practices within public organization's functional boundaries (Zimmermann and Foerstl, 2014). These practices are the core of PSM function, but the way they are performed and combined with other types of PSM practices can contribute considerably to the public procurement value. This type of practice includes sub-practices such as (i) procurement development practices that relate to building up the public procurement function (De Giacomo et al., 2019; Patrucco et al., 2019), (ii) contract management practices that are associated with a formal procedure of establishing a contractual relationship between buyer and supplier (Bala et al., 2008; Allen, 2021), (iii) supplier selection practices that aim to find the best supplier to fulfill the public needs and demands for products, services, or works (Igarashi et al., 2017; Keulemans and Van de Walle, 2017), (iv) tender-related practices that are associated with tender organizing and effective functioning (Caloghirou et al., 2016; Larson, 2009), and (v) supplier base-related practices for effective management and monitoring of suppliers that are actively engaged with the public buyer (Oruezabala and Rico, 2012).

6.1.4. Cross-functional PSM practices

The fourth type of PSM practice identified in our study is cross-functional PSM practices. This type of practice relates to the integration of the PSM function with other functions of the public organization's internal value chain. Overall, cross-functional activities between the purchasing function and other functions in the buying organization were rarely presented as a means of creating value, although their importance has been emphasized in the private sector literature (Jääskeläinen and Heikkilä, 2019), for example, in product development. Cross-functional PSM practices in the context of public procurement include two sub-categories: (i) cross-functional integration practices that refer to building appropriate levels of integration and cooperation between public organization's departments involved or related to the public procurement process (Bala et al., 2008; Erridge and Greer, 2002) and (ii) information-sharing practices within the buyer that include dissemination of information, knowledge, and facts within public buyer's organizational boundaries (Migiro and Ambe, 2008).

6.2. External PSM practices

6.2.1. Relational PSM practices

Some of the practices in our sample were classified as belonging to the external relational PSM practice type. This type includes activities in which two or more supply chain actors deploy their resources and collaborate on a common goal (Zimmermann and Foerstl, 2014). The ultimate goal of relational PSM practices is a successful collaboration between public procurement stakeholders towards a mutual goal of value creation. Some of the practices in this category target specific supply chain actors, such as early supplier involvement practices (Cohen and Amoros, 2014; Zelenbabic, 2015), innovation intermediation (Edler and Yeow, 2016; Myoken, 2010), and user engagement practices (Holma et al., 2020; Storsjo and Kachali, 2017). While others are oriented towards enhancing the quality of relationship within the whole network, such as trust-building practices (Oruezabala and Rico, 2012; Sparrevik et al., 2018), cooperation-related practices (Bohari et al., 2017; Zelenbabic, 2015), procurement network-building practices (Florio et al., 2018; Mamavi et al., 2017), and dialogue facilitation practices (Walker et al., 2013; Wontner et al., 2020).

6.2.2. Non-relational PSM practices

Similarly to relational PSM practices, the non-relational type is targeted towards other supply chain actors. However, in the case of the latter, practices require resource deployment only from the public buyer rather than from other supply chain actors (Zimmermann and Foerstl, 2014). This type in the public procurement context includes several sub-types, such as (i) supplier market driving practices that focus on creating, moving, and educating the supplier market (Saastamoinen et al., 2021; Uyarra and Flanagan, 2010); (ii) information-sharing practice with suppliers that are oriented towards dissemination of relevant information to resolve information asymmetries between a public buyer and supplier (Loader, 2015; Pazirandeh and Norrman, 2014); (iii) information-sharing practice with user that relates to sharing information between public buyer and user (Torvinen and Ulkuniemi, 2016); (iv) information-sharing practice within the network of stakeholders (Caloghirou et al., 2016; Uyarra et al., 2019); (v) supplier performance evaluation practice that aims for development and establishment of effective tracking and monitoring systems for supplier performance (Bala et al., 2008; Rodrigues et al., 2018); and (vi) supplier financial support practices that are related to the supplier receiving financial support from a public buyer with the purpose to develop its in-house capabilities (Georghiou et al., 2014; Li and Georghiou, 2016).

7. Discussion of findings

In this section, we present and discuss the summary of our findings regarding the link between different types of PSM practices adopted in public procurement and their outcomes as value components for a supplier, buyer, and user. We also propose a conceptual framework of value creation in public procurement to synthesize the findings.

7.1. Value creation in public procurement

Table 5 summarizes the present study's findings. The body rows present the types of external and internal PSM practices identified in the sample literature and classified based on Zimmermann and Foerstl (2014). The body columns correspond to different value components clustered by public procurement beneficiaries. The information in the data cell indicates whether the reviewed literature suggests a linkage between specific PSM practices and corresponding value components.

The analysis shows that similar forms of value may require different PSM practices depending on the perspective; that is, public buyer, supplier, or user. Research shows that, from a supplier's perspective, value in the form of innovativeness can be achieved by adopting vertically-aligned PSM practices, such as environmentally oriented demand-side practices or innovation-inducing demand-side practices. For example, practices that allow SMEs to secure government R&D contracts can reduce the uncertainty associated with the innovation process and boost SMEs' innovative performances (Selviaridis, 2020). The external PSM practices, such as cooperation-related practices, procurement network-building practices, and supplier financial support practices, are suggested to have a relatively considerable impact on supplier innovativeness. For instance, Florio et al. (2018) and Rothwell (1994) emphasize that supplier innovativeness can improve as a result of an extended series of interactions with the public organization that is organized to deal with technology transfers and complex information that is not easily transmitted or learned. Supplier innovativeness can also advance through risk-reducing practices, or contract management practices.

While all types of PSM practices can positively impact supplier market performance, the conducted review showed that external practices have the biggest effect in the form of supplier market driving practices, information-sharing practices, trust-building practices,

cooperation-related practices, and procurement network-building practices. For instance, public buyers may choose to undertake a pre-market engagement to understand suppliers' concerns about the potential impact of their demands and, hence, enhance suppliers' market performance (Wontner et al., 2020). Furthermore, the market performance of suppliers may improve as a result of the adoption of within-PSM practices (such as tender-related and procurement development practices) or enabling PSM practices (such as risk-reducing or e-procurement practices).

Supplier sustainable performance is related to the adoption of vertically aligned PSM practices (i.e., environmentally oriented demand-side practices), within-PSM practices (i.e., supplier selection practices and tender-related practices), and relational PSM practices (i.e., trust-building practices and cooperation-related practices). For instance, Roehrich et al. (2017) proposed that setting joint expectations and objectives between supplier and public buyer, thereby offering timely and non-controlling informational feedback regarding progress, can have a positive impact on sustainable value internalization and suppliers' overall green performance. Lastly, analysis has shown only a couple of links between PSM practices (i.e., cooperation-related practices and supplier financial support practices) and supplier capabilities building.

Table 5 shows that the public buyer's perspective is the most represented in our sample. The first value component—innovation generation and promotion—can be achieved through all types of PSM practices. Similar to the supplier's perspective, the external PSM practices seem to have the largest impact on innovation triggering and diffusion. Notably, nearly all relational PSM practices are linked to this value component. For example, as shown in a study by Myoken (2010), practices promoting fair and transparent competition focusing on new social and economic values of emerging technologies can lead to the development of leading-edge technologies. Another study by Wondimu et al. (2018) found out that practices related to Early Contractor Involvement (ECI) can foster the implementation of innovative, efficient, and value-adding solutions. Interestingly, enabling individual-level practices within buyers may also influence the innovation generation. As discussed in the case study that Storsjo and Kachali (2017) conducted, innovation can be fostered through practices supporting public procurement employees being more open to conducting procurement in a different way. Another important aspect of innovation generation and promotion is the adoption of information-sharing practices that allow for openly disseminating knowledge, facts, and ideas across the network of actors. For instance, Caloghirou et al. (2016) emphasize the importance of practices promoting the creative interaction between demand and supply.

The value component related to the establishment of a well-functioning supplier market is less connected to PSM practices. The results of performed content analysis show the potential importance of adopting supplier market driving practices, risk-reducing practices, tender-related practices, e-procurement practices, and enabling individual-level practices within the buyer. For example, adopting practices that can influence the level of participation of firms in particular tenders or the homogeneity of those bidding can have a strong impact on the structure of competition in the market (Uyarra and Flanagan, 2010). Uenk and Telgen (2019) found that competition can be triggered by framework agreements and thus increase service quality during the contract period. Another way that tendering practices can affect the market is through the unbundling approach to competitive bidding that Estache and Iimi (2011) discussed in their study. According to the authors, adoption or non-adoption of the bundling approach may have an impact either on the level of competition in the market (i.e., small contracts could contribute to the intensity of the market competition but will have to sacrifice potential economies of scale and scope) or costs associated with the project (i.e., large contracts could benefit from economies of scale and scope but will have to undermine the competition effect as only a couple of large firms may fulfill them).

The efficacy of the public procurement process is the most extensively covered value component in our sample. As can be seen in Table 5, this value is related to all types of PSM practices. This finding can be explained by considering the nature of public procurement and associated PSM processes. According to the analysis, within PSM type of practices can contribute to public procurement process effectiveness. As an example, Anastasopoulos and Whitford (2018) propose that public buyers may employ machine learning practices to learn about and improve their reputation. Oruezabala and Rico (2012) discuss how tender-related practices, such as improving information systems and giving priority to global providers, can lead to achieving significant cost savings associated with procurement function. Findings reveal that cross-functional PSM practices are strongly related to public procurement process effectiveness. For example, agreement among the departments involved in the provision of goods and services is necessary for the efficiency of the procurement process (Bala et al., 2008; Roman, 2017). Notably, external PSM practices can also contribute to the effectiveness of the public procurement process. For instance, cooperation-related practices, such as joint procurement with two or more organizations (i.e., collaborative aggregation of purchases), may lead to a considerable reduction of procurement costs (Carrera et al., 2021; Loader, 2010). The dialogue facilitation practices, such as establishing formal and informal communication channels between the procurer and suppliers, can reduce information asymmetry and improve the reliability and robustness of the purchasing process (Storsjo and Kachali, 2017).

Although value creation related to sustainable public procurement is linked to all types of PSM practices, the review emphasizes the importance of vertically aligned and individual level enabling PSM practices. For example, Cerutti et al. (2016) discussed how environmental savings associated with the catering contract have been achieved by adopting environmentally oriented demand-side practices like requiring the use of ecological cleaning products and awarding points to bidders offering a wider range of organic or fair trade products than were specifically requested. On the other hand, sample papers stress the importance of empowering individuals with a strong environmental attitude to make changes in the procurement process. For instance, assigning well-informed, aware, and competent personnel with a "green mindset" and a strong attitude to perform procurement functions may trigger necessary changes in the procurement process and lead to more sustainability goals set and achieved (Testa et al., 2016).

User value components related to the quality of product and service and environmental and social sustainability seem to be clearly connected to PSM practices. As presented in Table 5, quality of product and service requires a variety of PSM practices, such as risk-reducing practices, procurement development practices, and socially-oriented demand-side practices. For example, Bala et al. (2008) propose that public buyers should hold pilot projects to verify and ensure the high quality of procured products and services. Within-PSM practices such as monitoring the suppliers and their performances, or selecting potential suppliers based on the quality of the proposed investment plan to maximize customer satisfaction, have also been reported as being related to higher end-user satisfaction (Ancarani, 2009). Overall, the value of procurement for users of public buyers was the least investigated topic in the reviewed studies.

According to our analysis, environmental and social sustainability for user can be achieved by adopting corresponding vertically-aligned PSM practices. As Loosemore et al. (2020) reported, the public buyer may demand contractors to train and employ ex-offenders on their projects; hence, achieving greater social impact with the project. Interestingly, non-relational PSM practices can contribute to environmental and social sustainability. For instance, Choi (2010) proposes that sharing information related to eco-friendliness between the procurer and the supplier may contribute to eco-friendly learning and, as a result, to the overall environmental sustainability of the procured solution.

Similar practices may contribute to the multiple dimensions of public

Table 5
Value creation in public procurement.

PSM practices adopted by public procurement actors \ Value components achieved by public procurement actors	Supplier perspective *[Article reference number]*				Public buyer perspective *[Article reference number]*				User (consumer) perspective *[Article reference number]*		
	Improved supplier innovativeness	New and improved market opportunities	Better operative capabilities	Improved sustainable performance	Innovation generation and promotion	Well-functioning supplier market	Public procurement process effectiveness	Sustainable public procurement	Availability of product/service	Quality of product/service	Environmental and social sustainability
Vertically aligned PSM practices											
Environmentally oriented demand-side practices	[68]			[125]				[8; 14; 15; 17; 26; 27; 97; 101; 130; 147; 164]			[18]
Socially oriented demand-side practices										[33]	[27; 29; 78; 113; 114]
Product lifecycle-oriented procurement practices					[160]			[30; 86]			
Instructive practices for procurement		[57]	[101]				[105; 116; 169]	[17; 76; 155; 156; 165]			
Innovation-inducing demand-side practices	[37; 47; 50; 81]	[81]			[21; 38; 50; 62; 79; 81; 111]						
Enabling PSM practices											
Risk-reducing practices	[46; 47; 112]	[47; 136]			[114; 152; 160]	[91]	[62; 74; 105; 110; 112]	[161]		[3; 15]	
Image-building practices	[145]						[11; 108; 136]				
Benchmarking practices					[160]		[124; 132]				
E-procurement practices		[7; 22; 66; 128]				[22]	[31; 43; 53; 83; 96]				
Enabling individual-level practices within buyer					[105; 146; 153]		[12; 77; 116; 122; 130; 149; 169]	[13; 39; 49; 97; 130]			[18]
Managerial support practices								[5; 49; 97]			
Within PSM practices											
Procurement development practices		[64]			[40; 144]		[9; 43; 52; 59; 110; 120; 123; 132; 166]	[35; 48; 49]		[25; 143]	[143]
Contract management practices		[7; 20; 64; 66; 92; 131]	[103]		[98]		[91; 99; 103; 105; 133]	[15; 48]		[34; 69; 105; 129; 158; 168; 170]	[117; 138]
Supplier selection practices				[125]			[86; 94]	[58; 76; 125]		[137]	[61; 115]
Tender-related practices	[163]	[20; 66; 92; 128; 131; 154]		[134]	[20; 50; 89; 114]	[111]	[1; 31; 32; 43; 44; 45; 64; 65; 66; 67; 71; 86; 104; 107; 135]			[158; 170]	[48; 115; 167; 171]
Supplier base-related practices					[162]		[86]				
Cross-functional PSM practices											
Cross-functional integration practices							[41; 97]	[15]			
Information-sharing practice within buyer							[77]				
Relational PSM practices											
Trust building practices		[88]		[125]	[23]		[91]	[86; 103]			[85]
Cooperation-related practices	[3; 6; 17; 24; 29; 33; 36; 46; 60; 72; 152]	[6; 54; 128; 136]	[17]	[102]	[40; 160]		[20; 136; 143]	[86; 95]	[140; 100]		
Procurement network building practice	[46]	[139]			[105]		[51; 65]	[72]		[55]	
Dialogue facilitation practices					[23; 144; 152]		[74; 95; 116]	[95; 103]		[158]	
Early supplier involvement practices		[29]			[40; 118]		[87; 118]				
Innovation intermediation					[23; 33; 38; 50; 152]						
User engagement practices					[144; 149]					[89; 110; 114]	[105; 109]
Non-relational PSM practices											
Supplier market driving practices		[74; 91; 106; 111; 113]			[36; 162]	[82; 91]	[54; 82; 93]				[92]
Information-sharing practice with supplier	[84]	[63; 66; 131; 136]					[91; 92; 136]				[28; 74]
Information-sharing practice with user							[110]				
Information-sharing practice within network of stakeholders					[114; 146; 149; 150]		[20; 74; 105]	[13; 15; 165]		[15]	
Supplier performance evaluation practice							[75; 132; 137]	[10; 125; 164]		[137]	
Supplier financial support practices	[50; 62; 113]										

Note: Grey shading indicates that a certain PSM practice can lead to value creation for all three actors (i.e., public buyer, supplier, user)

value. To indicate the case when a certain PSM practice can lead to value creation for all three actors (i.e., public buyer, supplier, user), the practice row was colored in grey in Table 5. As can be seen in Table 5, adoption of environmentally oriented demand-side practices can create value to all stakeholders. Similarly, risk-reducing PSM practices can not only improve supplier's innovativeness and market performance but enhance the effectiveness of the public procurement process and quality of the final product or service. Notably, among external PSM practices, partnership-building practices and procurement network-building practices can help to create value for all public procurement stakeholders.

The results show that PSM practices, both external and internal, are widely present when discussing buyer value. In the context of supplier value, more attention is placed on external PSM practices. In the case of users, internal and external PSM practices are equally emphasized in the literature. Notably, the means of creating user value are less prevalent in the articles. As can be seen in Table 5, the value component related to the availability of product or service has been linked to only one type of PSM practice—cooperation-related practices—whose goal is a close and long-term relationship established between public buyer and contractor (Cunha Marques and Berg, 2011; Sillanpää, 2013).

7.2. The conceptual model of value creation in public procurement

The conceptual framework of the value of public procurement combines PSM practices, value components, and actor perspectives, and is synthesized in Fig. 4. In our analysis, some types of the value components identified for different actors exist in more than one perspective. For instance, Table 3 shows that the public buyer may achieve value in terms of "Innovation generation and promotion," while the supplier may benefit from "Improved supplier innovativeness." Similarly, both supplier and public buyer achieve value in terms of the developed supplier market – supplier in a form of "New and improved market opportunities" and public buyer as "Well-functioning supplier market." Lastly, all three actors are achieving value in terms of sustainability. In the conceptual framework (Fig. 4), these value components are considered homogeneous and are conceptualized as a single general value component. The "Perspective" row shows how many perspectives include the corresponding value. The quality and availability of the products and/or services were unified as interconnected concepts. Availability can be regarded as a sub-component of service quality (Parasuraman et al., 1988).

The relationship between public procurement value and PSM practice was conceptualized in a form of the presence or absence of a link between specific PSM practices identified in the literature and value component. For instance, with internal "Cross-functional PSM practices," we identified two practice subtypes, "Cross-functional integration practices" and "Information-sharing practice within buyer," and they are both associated with "Public Procurement Process Effectiveness" (Table 5). However, in many cases, not all of the identified practices are related to specific value components. This is illustrated with the white circle character. For example, none of the identified cross-functional PSM practices was linked to the "Better operative capabilities."

7.2.1. Internal PSM practices for public procurement value creation

The vertically-aligned PSM practices are strongly related to the creation of environmental and social sustainability. Vertically-aligned PSM practices require PSM to be aligned with the overall strategic goals of public organizations. Among others, socially or environmentally oriented demand-side practices imply addressing public sustainability challenges (e.g., improving quality of life, safety, and inequality) through public procurement function.

Most of *the enabling PSM practices* are connected to public procurement process effectiveness. From these practices, risk reducing practices are impacting supplier, buyer and user by facilitating innovation generation and promotion and improving the quality of products/services to users.

According to our analysis *within PSM practices and cross-functional practices* have the biggest potential to improve the efficacy of the public procurement process. In parrallel with the aim for public value, public procurement aims for effective functioning. From the public buyer's perspective, adopting practices corresponding to the process improvement has the most versatile potential for creating value. The positive impact of within PSM practices, such as contract management practices or tender-related practices, on value creation can be explained from the viewpoint of business process optimization. For example, previous research on business process optimization emphasizes process and production optimization as being instrumental for total value creation and optimization (Badurdeen and Jawahir, 2017; Fleischmann et al., 2015).

Cross-functional PSM practices strengthen the importance of integration, cooperation, and knowledge exchange between a public organization's departments. Previous private sector research has demonstrated the pivotal role of interdepartmental integration for organizational performance (Kahn, 1996; Vuori and Huy, 2016). Similarly, the PSM practices that build interdepartmental relationships and horizontal communication enhance decision-making, organizational innovativeness, and overall efficiency of the public procurement function.

7.2.2. External PSM practices for public procurement value creation

The external relational PSM practices adopted by the public buyer are aiming outside its organizational boundaries and focus primarily on establishing collaborative relationships with and between other stakeholders. Our analysis shows that external practices are strongly connected to the value component related to innovation generation and promotion and sustainability.

The relational PSM practices that strengthen the importance of partnership between public procurement actors can directly or indirectly create market value. From the supply chain network perspective (Kim et al., 2011), public buyers adopting relational PSM practices can become an influential integrator in the supplier market network, supporting its further growth and development. Collaboration between different partners in the network improves innovativeness due to the diversity of knowledge to be shared and combined, thereby enabling the collaborators to fill out their initial knowledge gaps and lack of skills (Nieto and Santamaría, 2007), to share the risks and costs associated with the innovation process, and to obtain more extensive results assessments by larger groups of public network actors (Hofstad and Torfing, 2015).

In the case of *non-relational PSM practices*, the strong link to supplier market performance enhancement and innovativeness can be explained with the concept of market sensing (Baden-Fuller and Teece, 2020; Lindblom et al., 2008). The information, knowledge, and facts that the public buyer disseminates during public procurement help stakeholders learn more about their environment and make more effective and risk-averse decisions (e.g., in terms of market expansion or new product development) (Everett, 2014). According to our analysis, the market and innovation-related values provide suppliers with major benefits. While public buyers and users gain from the creation of these value components (e.g., in terms of overall economic growth), their value gains are mostly indirect. On the other hand, suppliers achieve rather direct benefits; for example, in a form of improved technological capabilities, market growth opportunities, and competitive advantages in foreign markets.

8. Conclusion

Despite the increasing interest in the topic of public procurement, there is a notable lack of understanding of the multidimensional nature of public value in the context of the procurement function and practices that create value. Nevertheless, the systematic structuring of the existing

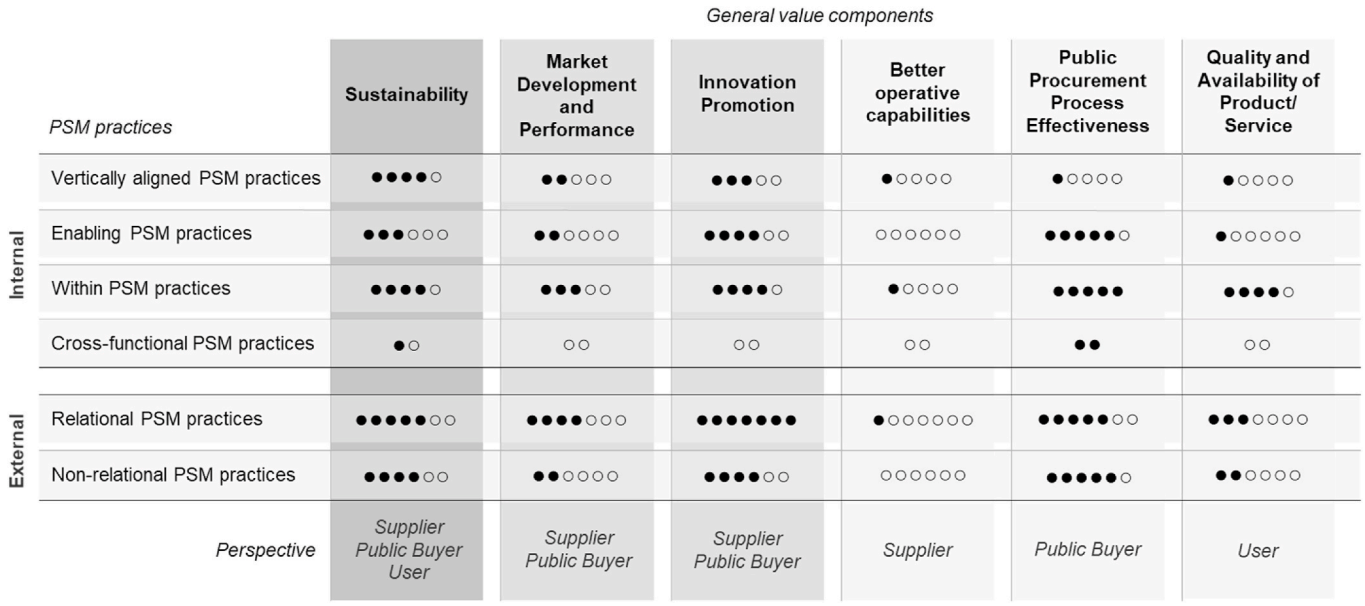


Fig. 4. The framework of value creation in public procurement.
Note: ● – the presence of the link between value component and PSM practice; ○ – the absence of the link between value component and PSM practice. Dark grey shading indicates that the value component is present in all three actors' perspectives; light grey – in two actors' perspectives; white – in single actor perspective.

body of knowledge on how adopting specific practices can contribute to value creation has potential for practitioners and policy-makers. This study addressed the research gap and defined the value components and practices associated with their creation. We conducted a systematic literature review and content analysis of 171 articles published during the last two decades. Based on our findings, we proposed a conceptual framework of public value that integrates PSM practices, associated value components, and three perspectives: (i) public buyer, (ii) supplier, and (iii) user.

8.1. Theoretical contribution

The findings contribute to the discussion of value creation in public procurement (Erridge, 2007; Meehan et al., 2017; Telgen et al., 2012; Uyarra et al., 2019) by (i) providing a three-perspective view on value components in public procurement, (ii) assigning PSM practices to value components, and (iii) presenting a conceptual framework of value creation of public procurement.

To the best of our knowledge, this is one of the first studies to examine the public procurement function and associated value creation through the theoretical lenses of the PBV (Bromiley and Rau, 2014, 2016) and the SCPV (Carter et al., 2017). In the discussion, we suggested that the PBV and its extension, the SCPV, better suit the context of public procurement than the resource-based view (RBV) (Barney, 1991; Wernerfelt, 1984) that is more often adopted in public procurement research (e.g., the RBV applied in Meehan et al. (2017) and AlNuaimi and Khan (2019)) by concentrating on the transferable practices and associated performance changes. The results show that adoption or non-adoption of PSM practices may explain performance differences between public organizations and related value chains. The offered PBV perspective advances current research on public procurement which previous researchers have claimed lack theoretical foundations (Obwegeser and Müller, 2018).

Importantly, the value components presented in this study incorporate three perspectives (public buyer, supplier, and user) and enable a comparison and analysis of contradictory or aligned aims among stakeholders. Three perspectives emphasize the fact that value is constituted by subjective evaluations against the needs of the actor (Meynhardt, 2009). The findings enable the analysis of both within and across organizational value creation that is inherent in the SCPV. For instance, the misalignment of practices and misunderstanding of value aims may lead to power-based win-lose competitions and missed opportunities for additional value creation (Meehan et al., 2017).

The finding of our analysis contributes to the SCPV that emphasizes a combined performance across organizations. While some of the identified practices exist within the public buyer (e.g., enabling or within-PSM practices), many imply the establishment of cooperative relationships across organizations. From Carter et al.'s (2017) perspective, the performance of public organizations can be analyzed based on the practices it adopts within its boundaries and as a combination of practices established among public procurement actors.

We contribute to public procurement literature by applying and elaborating the classification of PSM practices from the private sector procurement literature (Zimmermann and Foerstl, 2014) in the public procurement context. At the same time, we extend the understanding of PSM practices by showing that certain types of practices are associated with the creation of specific value components. The findings clearly show the emphasis of prior studies on adopting within PSM practices and cross-functional practices related to improving the public procurement process. However, a more long-term perspective to public procurement value creation has been present. Relational and non-relational PSM practices that address market development and structure not only create value for SMEs and local business suppliers but also enable a larger pool of potential suppliers from which the public buyer can choose. Vertically-aligned PSM practices and enabling PSM practices support the core public service provision resulting in quality/availability of the product and/or service.

Notably, our findings show that public procurement can support many of the general public value aims, such as prosperity, equality, efficiency, and fairness (Nabatchi, 2012). The value components identified in our analysis and summarized in the framework are comparable with other previous discussions on public value (Faulkner et al., 2018). For example, value components related to supplier market development and performance and innovation generation and promotion have been conceptualized as a part of public value by Bozeman et al. (2015) and Uyarra et al. (2019). Moreover, the value component associated with the public procurement process effectiveness can be viewed in the context of procedural rationality and justice, attributes of public value that Page

et al. (2015) discussed.

Our study contributes to public value creation literature (Meynhardt, 2015; Page et al., 2015) by discussing how PSM practices enable public value creation from the perspective of different public procurement actors. Lastly, our framework emphasizes that public procurement value research is a promising field that requires the amalgamation of previously isolated discussions of public procurement and public value.

8.2. Practical implications

Public procurement faces the need to put strategic aims and policies into effect while simultaneously dealing with limited resources. The present work is of practical importance for public procurement servants as it empowers them to become more aware of PSM practices, which could potentially strengthen the value for themselves, product or service users, and suppliers, or all of them. The limited capabilities and resources of the public sector encourage public buyers to seek ways to collaborate with suppliers who could provide the required expertise and resources. Suppliers are less interested in being involved in the public procurement process if the expected value for them remains low and is constrained by multiple barriers. Increasing suppliers' perceived value through the identified means of value creation shown in this study could be useful to make participation in the public procurement process more favorable for suppliers (Wang et al., 2020). Furthermore, public procurement has traditionally been criticized due to its disconnectedness from users' needs and wants. Today, public buyers are inspired to be more involved with users and regard them as knowledgeable problem-solvers and co-creators (Bryson et al., 2014). By making user value components more visible in the public procurement function, this study showed that public procurement may discover ways to further strengthen value creation for users and achieve higher user satisfaction. Understanding different value components may be beneficial, for example, in applying outcome-based contracting or defining better performance measures for procurement. Specifically, public managers should pay attention to synergistic PSM practices that support the creation of value for multiple actors in the value chain.

Table 6
Identified research gaps and potential future research directions.

Research topic	Research gap	Potential research question (s)
Performance differences between public buyers	Understanding the performance differences between public buyers from the value creation perspective and theoretical lenses of the PBV	How does the adoption of different types of PSM practices impact value creation in public procurement? What are the traits of the well-performing public buyer from the PSM perspective?
Paradoxical tensions and potential synergies between PSM practices	Exploring the relationship between various PSM practices and the impact of different combinations of PSM practices on value creation in public procurement	What are the paradoxical tensions and synergies associated with the adoption of different types of PSM practices in public procurement?
Organizing PSM practices in public procurement	Understand the conditions under which the adoption of practices in different public organizations can be the most successful	How do different governance mechanisms and cultural characteristics affect the implementation of PSM practices in different types of public procurement?
Public procurement capabilities	As not all potentially effective PSM practices are easily transferable, it is important to understand the conditions and public buyer capabilities needed for successful adoption	What kind of capabilities do public organizations require for the effective application of PSM practices? Under which conditions can the PSM practices be successfully transferred and/or imitated?
Defining and measuring public value	Explore new ways to empirically measure the performance of public buyers through practices they adopt and associated value they create for stakeholders	How to measure the public value that is created by PSM practices?

8.3. Limitations

Our sampling procedure introduced some limitations to our analysis. The articles in the sample were reviewed and interpreted by two researchers; thus, we cannot totally dismiss the possibility of incorrect interpretation. Future researchers should further extend the proposed conceptual framework utilizing different research methods, such as case studies or surveys. The results of descriptive statistics of units of analysis adopted in sample papers and presented in sub-section 4.4 reveal that most of the papers in our sample adopt the perspective of the public buyer. This shows that our findings likely suffer from being too buyer-oriented. This limitation is caused by a general trend in the public procurement research and can be addressed, for example, by adopting other research methods and settings.

Furthermore, we did not include perspectives of regulators or political agents in our analysis regardless of their role in public procurement. While this research discusses procurement procedures together with tender-related practices, it is relatively silent on other legal aspects. Lastly, we did not analyze financial benefits associated with the public procurement function as the financial value has been rather overemphasized in practice. We also scoped out the "grander" value elements, such as reducing unemployment in a region.

In this research, we assume that all value components that can be created by the public buyer are of equal importance. Public procurement is highly contextual as the political agendas, regulations, norms, and cultures differ from country to country and affect the degree of importance of different values to stakeholders. Since we aimed at the generalizability of our findings, our proposed framework does not account for such contextual differences. This may be considered as another limitation of our research.

8.4. Future research directions

In this final part, we present a research agenda derived based on the conceptual framework and findings of the conducted literature review. The proposed research direction is summarized in Table 6.

In our study, we propose that the performance of public buyers may be evaluated based on the amount of value they create for stakeholders. This represents an interesting research gap to be addressed. We invite follow-up studies to analyze further the performance of the public procurement function by adopting the theoretical lenses of the PBV and the SCPV. In doing so, future researchers may investigate how the utilization of different types of PSM practices outlined in our framework impact the degree of value created for each actor and differentiate the performance of one public buyer from another.

Another thought-provoking research gap is the relationship between different types of PSM practices and possible paradoxical tensions between them. On the other hand, various PSM practices may reinforce each other and lead to greater value creation in combination. This synergetic effect may be an interesting future research avenue. Moreover, future studies could clarify conditions, under which the adoption of practices identified in this analysis is the most efficient, with a focus on governance mechanisms and cultural characteristics that may enable greater value creation (Cabral et al., 2019). Further, public organizations (e.g., municipalities or governmental units) may vary in their capabilities to implement PSM practices. Future researchers may explore what kind of capabilities public buyers need in order to apply PSM

practices in the manner that allows the greatest value creation for stakeholders.

Despite the importance for practitioners and policy-makers, defining and measuring public value in the procurement context remains an underexplored topic. Future research should extend the finding of the present literature review. For instance, operational definitions that allow to empirically demonstrate public value remain limited (Hartley et al., 2017). An in-depth case study may discover additional value components and associated PSM practices that are not captured in the present literature review. Considering a lack of PSM practices that are linked with product/service availability, we suggest that future research pay particular focus on value creation from the user perspective. Moreover, future studies may test the proposed multi-perspective framework in different contexts and research settings. Lastly, the framework proposed in this study should be further verified by utilizing quantitative research methods. For example, the survey method can be used to verify the relationship between PSM practices and value components empirically by collecting data from different public procurement stakeholders.

Declarations of interest

None.

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A. List of Analyzed Articles

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