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Research on SME involvement in public procurement: A review, critique and conceptual framework

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A B S T R A C T

SME involvement in public procurement has attracted research interest from inside and outside the PSM community for several decades. The purpose of this paper is to systematically review its progress to date and contribute to its future development. It does so by undertaking descriptive and thematic analyses on 119 academic articles, which help to shed light on the characteristics of the subject and its research themes. Five overarching themes emerge: systemic barriers, policy and practice interventions, SME capacity, SME performance and sustainability in the public sector. The paper subsequently organises these themes into a conceptual framework as a first step towards theorization. The framework identifies the systemic and organisational factors that influence SME involvement and the outcomes for suppliers, public sector organisations and the marketplace that stem from such involvement. By integrating the various strands of research in this way, a clearer picture of SME involvement in public procurement starts to take shape. In addition to the conceptual framework, the paper critically evaluates what research has revealed to date while pinpointing areas that deserve future scholarly attention. Relevant in respect of the latter is explicit theoretical framing of issues like SMEs' capacity to compete, sensitivity to the heterogeneity of SMEs' as public sector suppliers, and empirical attention to under-explored aspects like typologies of SMEs' motivations. Implications for practice are also discussed within the paper.

1. Introduction

Small and medium-sized enterprises (SMEs) are central to debate over how public procurement should be managed and whose interests it should serve. This is apparent in the majority of OECD Member States enacting legislation or policies to assist SMEs in the public sector marketplace (OECD, 2018) and in the campaigns that SME representative bodies like the Federation of Small Business (2021) undertake on behalf of their members competing for government contracts. These actions can be explained by the fact that SMEs are not as successful in public procurement as much as they or their stakeholders would like, and a kind of market failure exists. The headline data bears this out. In the European Union, for instance, SMEs account for 52 % of Gross Value Added (GVA) but only 33 % of the value of direct public contract awards in an average year (European Commission, 2019; European Court of Auditors, 2023). Such under-representation implies that SMEs are losing out on revenue opportunities, and public sector supply chains are overly dependent on large corporations.

Like practitioners, academics are also interested in SME involvement in public procurement. A bibliometric analysis conducted by Rejeb et al. (2024) found that SMEs constitute one of the more mature and highly cited research themes in public procurement. This represents the accumulation of decades of studies into SMEs' experiences when tendering for government contracts, much of it driven by concern about their under-representation. Even so, it is not exactly clear how researchers have engaged with the subject or what their results reveal in the aggregate. While its main touchpoints like barriers to access and SME resource limitations have been summarised in reviews of the public procurement field by Rejeb et al. (2023, 2024), a dedicated examination of SME involvement in public procurement remains outstanding. By contrast, systematic reviews exist of green public procurement (Cheng et al., 2018), public procurement for innovation (Obwegeser and Müller, 2018) and corruption in government contracting (Lyra et al., 2022), among other topics.

In response, this paper systematically reviews the academic literature on SMEs and public procurement. Its guiding research question is: *How have researchers engaged with the issue of SME involvement in public procurement?* "SME" is any firm in the European Union with less than 250 employees and €50 million in revenue, with similar definitions operative in other jurisdictions. "Involvement" has two directly observable measures: competing for a public contract through bidding, tendering etc and winning a public contract (European Commission, 2019). The review has three objectives (1) delineate the subject by reference to its disciplinary background, methods, theories etc (2) identify and critically assess the themes that constitute research on SME involvement in public procurement and (3) develop a conceptual

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framework that makes the subject coherent. The paper has a historical- and a forward-looking aspect. It identifies not only what has been investigated but what can and should be investigated. This is vital as Rejeb et al.'s (2024) review concluded that research on SMEs and public procurement has tapered off and its future direction is uncertain.

The method the paper uses is the systematic literature review, popularised by Tranfield et al. (2003) in management research. The review begins with a structured search and retrieval of articles on SMEs and public procurement published in peer-reviewed academic journals. Thereafter, it conducts descriptive and thematic analyses on the final sample. The descriptive analysis uses deductive coding to quantitatively map the contours of the subject while the thematic analysis uses inductive coding to qualitatively infer the main lines of inquiry. In combination, the two analyses ensure that the review has both breadth and depth and that numeric indicators are supplemented with a judicious reading and contextualization of article content. The strategy is consistent with the standards expected of systematic reviews in the PSM field (Seuring and Gold, 2012; Hoejmose and Adrien-Kirby, 2012; Johnsen et al., 2017), and is aimed at presenting "an authoritative argument, based on informed wisdom that is convincing to an audience of fellow experts" (Greenhalgh et al., 2018:3).

The review finds that research on SME involvement in public procurement is on an upward trajectory, attracts contributions from multiple disciplines, favours quantitative methods, but is weak in the application or development of theory. With respect to content, most articles deal with the *ex-ante* aspects of SME involvement in public procurement, evident in themes like systemic barriers, SME capacity to tender and the policy and practice interventions designed to facilitate SME participation. The *ex-post* aspects of SME involvement like growth and innovation impacts for SMEs or sustainability for the public sector receive less attention, although promising lines of inquiry are emerging. These themes provide the foundations for a conceptual framework that illustrates the antecedent and outcome variables of SME involvement in public procurement. The framework counts as a first step towards theory building, which is increasingly expected of systematic reviews in PSM (Seuring et al., 2020).

The paper makes three key contributions to PSM scholarship. First, it clarifies what is known about SME involvement in public procurement by assembling the literature and finding commonalities in the arguments and evidence presented. This matters because existing research is fragmented and oftentimes siloed by the disciplinary backgrounds of those undertaking it. Second, it pinpoints where there are research gaps or limitations through a critical reading of the literature. In this way, the paper directs future research to areas where it will be productive and not simply reiterate what is already known. Third, it proposes an original conceptual framework for explaining SME involvement in public procurement, as described above. These contributions will hopefully add impetus to the subject and trigger renewed engagement by the PSM community. Systematic literature reviews ought to have relevance for practitioners as well as academics, according to Tranfield et al. (2003). Hence, insights from the review are used to make recommendations to SMEs, policymakers and buyers on how to further their interests in public procurement.

2. Method

This paper adhered to established protocols for planning, conducting and reporting on systematic literature reviews in management and PSM (Tranfield et al., 2003; Durach et al., 2017). First, a keyword search (KWS) of article abstracts was performed across two academic databases: EBSCO Business Source Complete and ABI/Inform (ProQuest). The keywords were "SME" and its synonyms i.e., "small firm," "small business," "small supplier" AND "public procurement" and its synonyms i.e., "public contract*", "government contract*" and "tender*". The use of two databases was intended to maximise coverage of the review. The KWS was limited to peer-reviewed articles that were published in academic journals and written in English. Practitioner reports, books, book chapters, editorials and technical commentaries were excluded from the search. The cut-off search date was December 2024.

The combined number of articles returned after running the KWS across the two databases was 234. Articles were downloaded as a CSV file for processing. The title and abstract of each article were read to determine its eligibility for inclusion. Articles had to address SME involvement in public procurement in whole or part to be eligible. The initial screening removed 107 articles that did not meet this criterion. Some abstracts mentioned SMEs and the public sector but not in the context of procurement while others mentioned SMEs and procurement but not in the context of the public sector. This left 127 articles. A second round of screening removed 23 articles because they were not published in Association of Business Schools (ABS) journals. The decision to exclude non-ABS articles was taken as a quality control measure. This left 104 articles. The KWS was supplemented by cross-referencing papers (CRP). These were identified by manually scanning reference lists of select articles retrieved through the KWS. Fifteen (15) new articles were obtained in this way. As with the KWS articles, only CRP articles published in ABS journals were included. Added to the 104 KWS articles, this brought the final sample for review to 119. A summary of the search and screening process is contained in Table 1.

Of the final sample of articles, 86.6 % were judged to be wholly about SME involvement in public procurement. The remaining 13.4 % examine SME involvement in public procurement within a broader procurement or SME context. These broader contexts include sustainable public procurement e.g., Walker and Brammer's (2009) "Sustainable procurement in the United Kingdom public sector" or factors affecting SMEs' internationalization and other strategic decisions e.g., Cardoza et al.'s (2015) "China goes global: public policies' influence on small- and medium-sized enterprises' international expansion".

The review of the 119 papers started with a descriptive statistical analysis before progressing to a thematic analysis. The descriptive analysis involved deductively coding each article using pre-defined fields like publication date, journal title, disciplinary background, number of citations, method, theory, unit of analysis, and geographic context. These fields were adapted from earlier systematic literature reviews in PSM (Seuring and Müller, 2008; Patrucco et al., 2017; Rejeb et al., 2024). The author conducted the deductive coding because it is feasible to objectively extract information on the above fields. The deductive coding generated a numeric dataset that provides the basis for a descriptive statistical analysis of research on SME involvement in public procurement, which is reported in section 3.1.

Thematic analysis involved interpreting what the article was about and coding it accordingly. This process was inductive in nature. Unlike the descriptive analysis, the codes were generated organically from the content of the articles as part of an exploratory approach. To uphold the reliability of the process, the author sought the assistance of a second reviewer. The author and the second reviewer worked independently to code each article. Their preliminary results were comparable, indicating acceptable inter-coder reliability. The two reviewers then set about finalizing the codes using what Seuring and Gold (2012:547) label the

Table 1
Search and screening process.

Search, retrieval and screening steps	No. of articles
Articles generated from KWS of EBSCO Business Source Complete and ABI/Inform (ProQuest)	234
Articles judged to be not relevant to SME involvement in public procurement	(107)
	127
Articles judged to be relevant to SME involvement in public procurement but not published in ABS journals	(23)
	104
Articles generated from CRP i.e., manually scanning reference lists of select KWS articles	15
Final sample of articles for review	119

"discursive alignment of interpretation". Basically, this meant debating articles where there was confusion or disagreement over the initial coding before arriving at a consensus. Further information on the inductive coding process is contained in section 3.2.

3. Results

3.1. Descriptive analysis

The analysis begins with frequency of publication. Fig. 1 shows that published output on SME involvement in public procurement was minimal between 1980 and 2010 but started to increase, albeit unevenly, after this point. One possible driver of this increase was policy initiatives like the European Commission's (2008) *European Code of Best Practices Facilitating SME Access by SMEs to Public Procurement*, which stimulated academic interest in the subject. Another was acceptance by academics and practitioners of the organisational and societal benefits of having SMEs involved in public sector supply chains (Harland et al., 2021). Growth in research output on SME involvement in public procurement should also be viewed in relation to growth in research output on public procurement generally. Rejeb et al. (2024) found 2009 to be an inflection point in public procurement research, with the volume of published output climbing steadily from there onwards.

As public procurement research attracts contributions from multiple disciplines (Flynn and Davis, 2014), the expectation is that research on SME involvement in public procurement will be the same. To investigate this further, the disciplinary background of each article was ascertained by matching the journal in which it is published to its categorization and ranking in the ABS database. To illustrate, *Journal of Purchasing & Supply Management* is listed under Operations & Technology. By this reasoning, articles about SME involvement in public procurement that are published in the *Journal of Purchasing & Supply Management* belong to the Operations & Technology discipline. In the ABS database, journals are only listed under a single discipline – disciplinary categorization is mutually exclusive. As such, the disciplinary categorization of articles reviewed for this paper is also mutually exclusive.

As Table 2 details, research on SME involvement in public procurement is associated with multiple disciplines. The main ones are Operations & Technology (23.5 %), Public Sector (21.8 %), Entrepreneurship & Small Business Management (18.5 %) and Economics (10.1 %). Articles are distributed across ABS 1–4 ranked journals. The highest proportion is in ABS-3 journals (37.8 %), followed by ABS-1 journals (29.4 %), ABS-2 journals (26.1 %) and finally ABS-4 journals (6.7 %). The mean number of Google Scholar citations is 81.36 per article (std. dev = 128.39) and the median figure is 48. The total Google Scholar citations for the sample is 9682. The top five journals for published output are *Journal of Public Procurement* (ABS 1), *Small Business Economics* (ABS 3), *Public Money & Management* (ABS 2), *International Journal of Public Sector Management* (ABS 1) and *Journal of Purchasing & Supply Management* (ABS 3) (see Table 3).

The standard research design is to examine SME involvement in public procurement from a SME perspective (73.9 %) rather than a public sector organisation (13.4 %) or policymaker (9.2 %) perspective (see Table 2). Few papers gather data from both SMEs and public sector organisations to triangulate their findings (3.5 %). The majority of articles refer to the public sector generally when discussing SME involvement (58.8 %). It is rarer to confine the study to named procurement categories e.g., works/construction (9.2 %), health (3.4 %) or to distinct levels of government e.g., local government (7.6 %), central government (5.0 %) etc. The geographic scope of research is wide-ranging but still skews towards Western nations. Over 70 % of articles discuss SME involvement in public procurement in a European, British or North American context. Asia and Africa together constitute just under 20 % of output, with marginal representation from Central & South America and Oceania regions (5.1 %).

The two most common methods employed are surveying (32.8 %) and quantitative modelling (31.9 %). The former involves primary collection of numeric data for descriptive or inferential statistical analysis. The latter typically involves econometric analysis using secondary panel data on SMEs and public contracts. Qualitative methods, including interviews or focus groups (8.4 %), case studies (11.8 %), document analysis (2.5 %) and literature reviews (9.2 %) are not used as much. Only one in three articles employ a named theory for their study (33.6 %). Dynamic capabilities, resource-based view (RBV), transaction cost economics (TCE) and institutional theory are prominent in this respect, and are used individually and in combination. The foregoing descriptive analysis sheds light on research into SME involvement in public procurement. Starting from a low base, we can see that the quantity of published output has increased since the late 2000s. No single discipline controls the subject. Instead, scholars from operations, public sector

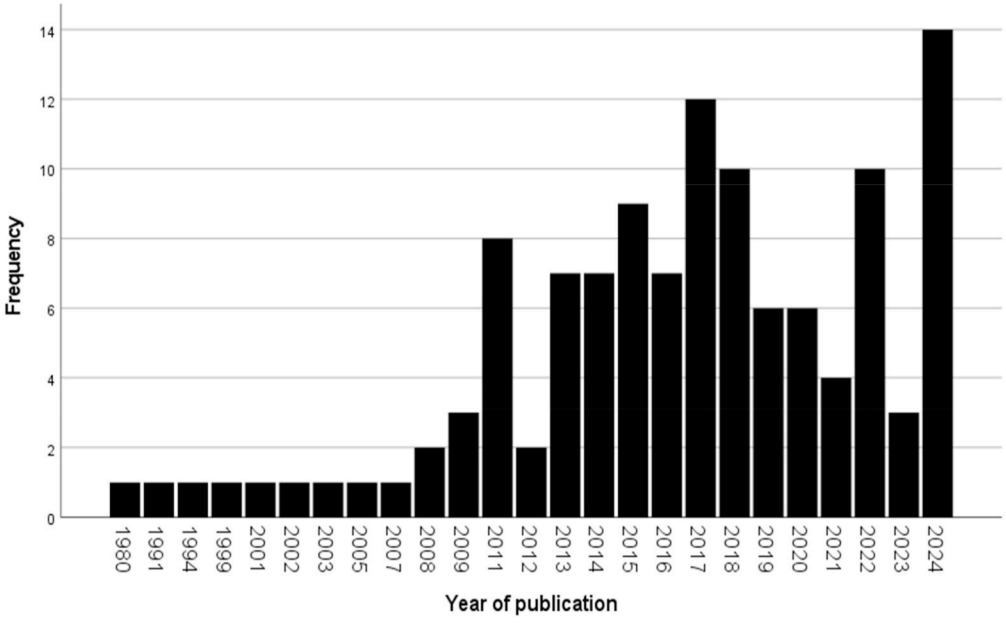


Fig. 1. Frequency of publications on SME involvement in public procurement.

Table 2
Summary of descriptive statistical analysis (n = 119).

Discipline	%	ABS journal ranking	%	Unit of analysis	%	Sector	%	Method	%	Geographic focus	%
Operations & Technology	23.5	ABS 4	6.7	SMEs	73.9	Public sector generally	58.8	Surveys	32.8	European Union	37.0
Public Sector	21.8	ABS 3	37.8	Public sector organisations	13.4	Two or more public sector levels e.g., central & local government	11.8	Quantitative modelling	31.9	United Kingdom	22.7
Entrepreneurship & Small Business Management	18.5	ABS 2	26.1	Policy-institutional	9.2	Construction/works	9.2	Case studies	11.8	Asia	11.8
Economics	10.1	ABS 1	29.4	Mix of SMEs and public sector organisations	3.5	Local government	7.6	Literature review	9.2	North America	10.9
Ethics & CSR	6.7					Central government (incl. defence)	5.0	Interviews or focus groups	8.4	Africa	7.6
Innovation	6.7					Health	3.4	Mixed methods	3.4	Central & South America	3.4
All other disciplines	12.7					Utilities	1.7	Document analysis	2.5	Oceania	1.7
						All other public sector levels or organisation types	2.5			Multiple countries	3.4
										No geographic context	1.5

Table 3
Top 10 journals for research on SME involvement in public procurement.

Journal title	No. of papers	ABS ranking	Discipline
Journal of Public Procurement	13	1	Operations & Technology
Small Business Economics	7	3	Entrepreneurship & Small Business Management
Public Money & Management	7	2	Public Sector
International Journal of Public Sector Management	7	1	Public Sector
Journal of Purchasing & Supply Management	6	3	Operations & Technology
International Small Business Journal	5	3	Entrepreneurship & Small Business Management
Environment & Planning C: Politics & Space	4	3	Public Sector
Supply Chain Management: An International Journal	3	3	Operations & Technology
Technovation	3	3	Innovation
Journal of Small Business & Enterprise Development	3	2	Entrepreneurship & Small Business Management
Total	58/119		

management, entrepreneurship, economics and elsewhere are active. The subject draws contributions from most geographic regions, attesting to its universal relevance. On a less positive note, SME involvement in public procurement is under-theorized. To put this in perspective, other systematic reviews have made the same criticism of public procurement (Flynn and Davis, 2014; Patrucco et al., 2017) and PSM (Spina et al., 2016; Johnsen et al., 2017). Under-theorization of SME involvement arguably explains why its publication outlets are typically low-to mid-ranked journals. There is also a tendency to elevate SME perspectives over public sector and policymaker perspectives, to treat the public sector as monolithic, and to neglect qualitative research methods. The next section will add depth to the descriptive statistics by unpacking the themes that constitute research on SME involvement in public procurement.

3.2. Thematic analysis

Mentioned earlier, an inductive approach was used to analyse the content of articles and determine their main focus. Each article was given a code, which was based on a reading of the abstract and, thereafter, the full text. For example, Fee et al.'s (2002) article about SMEs' dissatisfaction with public tendering was coded "problems with procedures and contract design" alongside similar articles. The rule this review applied was one code per article i.e., single coding. The coding of most articles was straightforward, as they had an overriding focus, whether it was procedural barriers, SME resources, policy implementation etc. A few articles had multiple foci. Peck and Cabras (2011), for instance, examined the local economic development implications of contracting with SMEs whilst also describing SMEs' difficulties with tendering. In such cases, a code was assigned based on what the two reviewers deemed to be the major focus of the article. This approach is consistent with earlier systematic reviews of PSM subjects undertaken by Seuring and Gold (2012) and Hoejmose and Adrien-Kirby (2012).

There are advantages and disadvantages to single coding when performing content analysis. In terms of advantages, it made the coding process resource efficient and clear-cut. It also meant that the final research themes could be examined in relation to fields like disciplinary background, preferred methodology, theory and unit of analysis. This type of examination would have proved difficult if papers were associated with two or more themes. The trade-off for simplicity and clarity is loss of granularity, however. Multiple coding would have unearthed other analytic observations that were *de facto* omitted because of single coding. Arguably, these other analytic observations would have combined to produce a more layered characterisation of research on SME involvement in public procurement. We acknowledge that not using multiple coding is a limitation of this study.

The inductive process generated 17 codes. The articles were read initially to get a sense of the general content of the sample and to pick out obvious codes like barriers to involvement. The articles were then re-read 1-2 times to extend the range of codes and/or refine initial codes as part of our reflexive approach to thematic analysis (see Braun and Clarke, 2021). Throughout the process a spreadsheet was used to record the codes and allow the two reviewers to scrutinize the provisional list. After several iterations of reading-coding and three months of being immersed in the data, the reviewers reached the point where no new or refined codes were suggesting themselves for inclusion. The 17 codes

seemed to be sufficient to accommodate the sample of articles, implying code saturation had been reached.

As Braun and Clarke (2021) explain, codes and themes represent different levels of complexity. Codes capture analytic observations containing a particular idea and are "close to the data". Themes, on the other hand, are created from grouping similar-type codes together and they reflect data at a more abstracted level. The 17 codes that emerged from the review were used to create five themes that define SME involvement in public procurement. For example, codes related to the problems SMEs encounter when competing for public contracts comprise the theme "systemic barriers". Illustration of how the codes translate into themes is contained in the Appendix. The number of articles associated with each code and theme is in parenthesis. The five themes are (1) systemic barriers (2) policy and practice interventions (3) SME capacity (4) SME performance and (5) sustainability in the public sector.

The quantity and timing of research output varies by theme (see Fig. 2). Systemic barriers, policy and practice interventions, and SME capacity account for approximately two-thirds of the 119 articles. Their prominence implies that research has concentrated on the *ex-ante* aspects of SME involvement in public procurement; that is, the systemic and organisational factors that affect SMEs competing for and winning public contracts. Articles about systemic barriers and the policies designed to alleviate them marked the beginning of academic interest in the subject. Articles about SMEs' capacity to compete for and win public contracts came later. The two remaining themes, SME performance and sustainability in the public sector, are the *ex-post* aspects of SME involvement and comprise a smaller body of research. Sustainability was an early theme but did not keep pace with systemic barriers and policy and practice interventions. SME performance is a new but fast-growing theme. The paper now turns to critically assessing the five themes. Table 4 summarises the assessment.

3.2.1. *Systemic barriers*

Systemic barriers to SME involvement in public procurement have preoccupied researchers since the1990s. Systemic barriers are barriers inherent in the public procurement system that impose a disproportionate burden on small or young firms when competing for contracts. Systemic barriers are procedural, cultural and institutional in nature (Loader, 2013). Starting with procedural barriers, numerous studies document how bureaucracy and excessive paperwork disproportionately burden SMEs in public procurement. This transpired in surveys and interviews of SMEs by MacManus (1991), Cox (1994), Fee et al. (2002) and Loader (2005), and has been a recurrent observation since then (Loader, 2015; Woldesenbet and Worthington, 2019; Akenroye et al., 2024). The problem of bureaucracy for small and young firms is compounded by the lack of harmonisation in tendering procedures across government organisations (Ancarani et al., 2019) and the formalised, arms-length character of public sector tendering (MacManus, 1991; Dainty et al., 2001; Uyarra et al., 2014).

Besides bureaucracy, narrow tender specifications that are written with certain products or suppliers in mind constitute a systemic barrier, as do ambiguous tender specifications that confound smaller and less experienced bidders (MacManus, 1991; Uyarra et al., 2014; Loader, 2015). Onerous qualification criteria pertaining to annual revenue and supplier experience that SMEs find difficult to meet are another serious impediment (Loader, 2013; Akenroye et al., 2024). Equally, award criteria that prioritise lowest price over quality and responsiveness are assumed to disadvantage SMEs (Dainty et al., 2001; Loader, 2007), although the available evidence contradicts this assumption (see section 3.2.2). Before these procedural barriers, SMEs complain about poor visibility of contract opportunities, a problem that e-procurement has not entirely resolved (Walker and Brammer, 2012).

Systemic barriers are cultural as well as procedural. For instance, public buyers have been accused of excessive risk-aversion in their attitudes towards working with SMEs (Dainty et al., 2001; Loader, 2013; Uyarra et al., 2014). Public buyers counter that this is less about

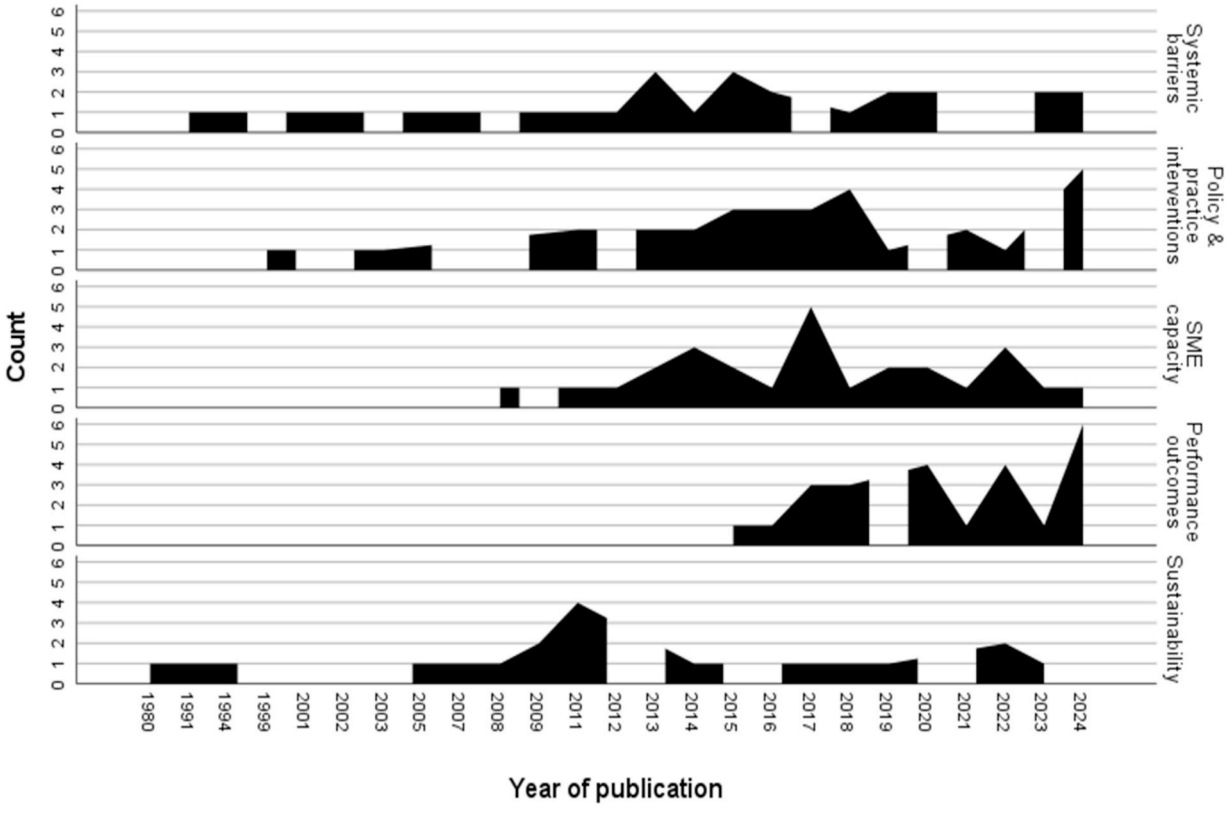


Fig. 2. Themes in research on SME involvement in public procurement.

Table 4
Summary of research themes on SME involvement in public procurement.

THEME 1	SYSTEMIC BARRIERS
Sub-themes	- Procedural barriers -Cultural barriers -Institutional tensions
Established knowledge	-Procedural barriers to SME involvement in public procurement include bureaucracy in the tendering process, onerous qualification criteria, narrow specifications, and poor visibility of live contracts. -Cultural barriers to SME involvement in public procurement include large supplier bias, excessive risk aversion by buyers towards SMEs, and the under-professionalization of public buyers. -Institutional tensions between financial and socio-economic goals negatively impact SME involvement in public procurement e.g., striving to achieve efficiency gains by aggregating demand versus facilitating SME involvement. -Systemic barriers are similar across developed and developing economies.
Gaps in knowledge & opportunities for future research	-Most studies describe barriers but do not test their effect on SME involvement in public procurement. -Insufficient consideration is given to how SMEs are differentially impacted by barriers based on characteristics like size, age, owner characteristics, industry, R&D and local versus national market focus. -Barriers that SMEs experience during the delivery phase of a public contract are overlooked. -No attempt to compare barriers experienced by SME suppliers in public procurement with barriers experienced by SME suppliers in private sector procurement. -Few studies attempt to triangulate SMEs' reported experiences with public buyers' reported experiences.
Theory	-Institutional theory has been employed by a handful of studies to rationalize the existence of systemic barriers. -Some studies indirectly refer to competition theory as part of explaining entry barriers to the public sector marketplace and the under-representation of SMEs.
Methods	-Primary data studies using surveys or interviews predominate.
Unit of analysis	-SMEs are the main unit of analysis. -Public buyers, or a mix of SMEs and public buyers, are not used as much.
Main disciplinary background	-Operations & Technology.
THEME 2	POLICY AND PRACTICE INTERVENTIONS
Sub-themes	-Comparison of SME-oriented policies -Implementation of SME-oriented policy -Public buyers supporting SMEs -Effectiveness of SME-oriented policy
Established knowledge	-SME-oriented procurement policies in the European Union are predicated on equality of opportunity and are designed to tackle procedural barriers like the time and cost of preparing a tender. -SME-oriented procurement policies in other jurisdictions e.g., the United States are predicated on equality of opportunity and equality of outcome. The latter means that actions are taken to favour SMEs by, for example, setting aside contracts for them. -SME-oriented procurement policies only partially translate into practice - public buyers seem to treat them in an a la carte manner. -Some policy measures like set-asides and open competition appear to be effective in increasing SME involvement in public procurement. Other measures like MEAT evaluation criteria and the division of contacts are less effective and may even be counterproductive.
Gaps in knowledge & opportunities for future research	-The individual, organisational and environmental factors that affect the implementation of SME-oriented policy are under-researched and under-theorized. -Lack of consideration is given to the context in which SME-oriented procurement policy is implemented e.g., does SME-oriented procurement policy mean the same for service contracts and construction contracts and for central government and local government? -Insufficient evidence on the effectiveness of SME-oriented policies like MEAT and the division of contracts into lots.
Theory	-Theory features to a greater extent in research on SME-oriented procurement policies than systemic barriers, but still less than one in three papers use a named theory. -No consistent pattern in use of theory, with a diverse list including mentoring theory, theory of auctions and CSR theory.
Methods	-Quantitative modelling is the most common method used, mainly to test the effects of policy measures on SME outcomes. -Conceptual papers also feature, as do primary data studies using surveys, interviews and case studies.
Unit of analysis	-SMEs are the most common unit of analysis, followed by policy-institutional and public sector organisations.
Main disciplinary background	-Public Sector
THEME 3	SME CAPACITY
Sub-themes	-SME resource limitations -Effect of SMEs' resources and capabilities on involvement in public procurement -Effect of SMEs' competitive orientation on involvement in public procurement -SMEs helping themselves
Established knowledge	-SMEs' complement of resources is linked to how active and successful they are in public contract competitions, with better resourced SMEs enjoying higher involvement. -Tendering capabilities, networking capabilities, and knowledge acquisition and transformation capabilities support SME involvement in public procurement. -Acting entrepreneurial has a payoff for SMEs in public procurement, as does proactively looking to understand and satisfy customer requirements.
Gaps in knowledge & opportunities for future research	-Over reliance on cross-sectional survey data, with only a few studies using lagged outcome variables or longitudinal datasets to address concerns over endogeneity when testing the effect of resources, capabilities and competitive orientations on SME involvement in public procurement. -No consistency in the types of resources and capabilities tested, which makes it difficult to build up a body of evidence on their effects. -Not all studies are sensitive to how resources, capabilities and competitive orientations vary between the SME sub-groups of micro-, small- and medium-sized enterprises. -Tendency to assume that the same resources and capabilities are required of SMEs irrespective of the type of public sector customer.
Theory	-Reasonable representation of theory, with just under half of studies using a named theory. -Dynamic capabilities theory appears the most, followed by market orientation theory and entrepreneurial orientation theory.

(*continued on next page*)

Table 4 (*continued*)

Methods	-Surveys predominate, with nearly two out of three studies collecting primary data using survey instruments. -Qualitative research designs are comparatively few.
Unit of analysis	-SMEs are the only unit of analysis.
Main disciplinary background	-Operations & Technology.
THEME 4	SME PERFORMANCE
Sub-themes	-Growth -Innovation -Internationalization -Access to finance
Established knowledge	-Involvement in public procurement is associated with stronger labour productivity and employment growth in SMEs over the short-term. -Research to date indicates that the performance gains from delivering public contracts are temporary and do not strengthen the long-term competitiveness of SMEs. -Involvement in public procurement is associated with increased SME innovation, especially new-to-market products. -Contrary to expectations, public contracting seems to exacerbate SMEs' existing financial constraints while its relationship to internationalization/exporting is inconclusive.
Gaps in knowledge & opportunities for future research	-Limited number of investigations into the effect of public contracting on SME performance – more empirical testing is needed to reach firmer conclusions. -Lack of theoretical elaboration of the public contracting-performance relationship. Is there a "certification effect" for SMEs from involvement in public procurement? Or does public contracting stimulate organisational learning in SMEs? -No in-depth qualitative assessments of the performance effects of SME involvement in public procurement, which could be used to develop theoretical propositions. -Not altogether clear how public contract specifications, evaluation criteria, type of product/service requested, and sector incentivise innovation by SMEs. -Performance outcomes like securing investment or entering into partnerships/alliances are yet to be considered as part of SME involvement in public procurement.
Theory	-Less than one in three studies use an identifiable theory, which is attributable to the empirically driven nature of studies by economics and finance scholars. -The theories that are cited include theory of auctions, transaction cost economics theory, innovation theory and certification effect theory.
Methods	-Quantitative modelling is predominantly used, while a few qualitative case investigations make up the remainder.
Unit of analysis	-SMEs are the most common unit of analysis.
Main disciplinary background	-Economics
THEME 5	SUSTAINABILITY IN THE PUBLIC SECTOR
Sub-themes	-Contracting with SMEs for socio-economic objectives. -Eliciting CSR and sustainability from SMEs.
Established knowledge	-Contracting with SMEs is integral to sustainable public procurement strategy, especially its potential to foster local and regional economic development. -Contracting with SMEs has greater salience for local authorities than central government departments because it dovetails with their corporate objectives. -Governments use public procurement to elicit CSR from suppliers, including SME suppliers, in areas like employee wellbeing, health & safety and environmental standards. -Public procurement can be effective in pushing SMEs to embrace CSR and sustainable operations, with consequent positive externalities for citizens and society.
Gaps in knowledge & opportunities for future research	-No quantification of the socio-economic effects of public sector organisations contracting with SMEs e.g., what is the financial benefit of awarding an average value contract to an SME over a large firm? -Minimal theoretical explanation of how and why public sector organisations contract with SMEs for sustainability purposes. -Little consideration of what contracting with SMEs for sustainability goals looks like in parts of the public sector beyond local government and health. -It is not clear how CSR and sustainability requirements in public contract competitions affect the operations of SMEs and the supply marketplace. Does it lead to higher priced bids from SMEs? Does it reduce competition in the supply marketplace?
Theory	-Minimal use of theory even though most research is qualitative. -The theories that are cited include stakeholder theory and socio-technical transitions theory.
Methods	-Case studies are the most commonly used method.
Unit of analysis	-SMEs are the main unit of analysis -Public sector organisations or a mix of public sector organisations and SMEs feature to a lesser extent.
Main disciplinary background	-Public Sector

risk-aversion and more about misgivings over SMEs' ability to deliver contracts (Loader, 2007; Mphela and Shunda, 2018). Related to risk-aversion is the accusation that public buyers are under-skilled and incapable of designing contracts to facilitate SME inclusion and diversify public sector supply chains (Fee et al. 2002; Loader, 2015). Authors like Loader (2007) and Cao et al. (2024) also reason that aggregating demand to achieve efficiency goals *de facto* excludes SMEs. In such situations, public contracts become too large and complex for SMEs to manage. Institutional tension of this kind between efficiency and socio-economic goals represents another systemic barrier for SMEs.

Taken together, the literature on systemic barriers helps to explain why SMEs are under-represented in public procurement. Its insights draw on primary data studies from developed and developing countries, which allows commonalities in systemic barriers to be discerned. Yet the same literature is overwhelmingly descriptive. Studies identify systemic barriers but do not measure their effect on measures of SME involvement. One exception is Ancarani et al. (2019) who showed that commonly cited barriers like excessive paperwork, clarity of documents and minimum revenue thresholds have less of a negative impact on bidding and success rates than imagined. Studies of systemic barriers also rely heavily on SMEs as informants and do not triangulate SMEs' responses with public buyers' responses.

Studies are descriptive because theory is not widely used to explain the origins or effects of systemic barriers, at least not explicitly. Exceptions include Woldesenbet and Worthington (2019) and Akenroye et al. (2024) who both employed institutional theory to rationalize the rules-based character of public tendering. Added to this are studies like Cox (1994) that implicitly use variants of competition theory to explain SMEs' under-representation in the public sector marketplace. Another weakness is that studies have yet to connect systemic barriers in public procurement with the difficulties SMEs experience when tendering for contracts with corporate customers. In fact, there is only one study,

conducted by Purchase et al. (2009), that contrasts SMEs' experiences in the public and private sector marketplaces. The systemic barriers the literature describes are exclusively in the pre-contract award stage. Consideration of systemic barriers that SMEs must overcome post-contract award is missing. Finally, the assumption that SMEs are uniformly stymied by systemic barriers is improbable. As Uyarra et al. (2014) find, the effect of barriers depends on SMEs' size, industry, profit or not-for-profit status, research and development (R&D) intensity etc.

3.2.2. Policy and practice interventions

The second theme relates to policies and practices designed to increase SME involvement in public procurement, either by targeting systemic barriers or, alternatively, by public buyers supporting SMEs. As Anglund (1999:12) put it, "policymakers compared government treatment of small business relative to big business, found it wanting, and developed new programs to offset the impact of the core policy on small firms". One sub-theme scrutinizes the content of such policies in an international context. Kidalov and Snider (2011), for example, clarify how SME-oriented procurement policies in the United States are predicated on equality of opportunity and affirmative action whereas European Union policies are solely predicated on equality of opportunity and stop short of affirmative action. Jones (2011) performed similar comparative analyses between East Asia countries while Loader (2018) charted policy initiatives by successive United Kingdom governments to reform public procurement and widen access for SMEs.

The adoption of SME-oriented procurement policies does not automatically bring about change. For change to happen public buyers must implement policy recommendations. On this basis, several studies test policy implementation using survey method. Their results indicate that SME-oriented policies only partially translate into everyday procurement practice, as buyers treat them in an *a la carte* fashion. This was the conclusion reached by Flynn and Davis (2015) after surveying SMEs on their experience of reform efforts in the Irish public procurement system. The same authors surveyed public buyers in a separate study and their responses corroborated SMEs' reported experiences (Flynn and Davis, 2016). Most public buyers claimed to be implementing "low-hanging fruit" measures like open advertising of contracts, but the numbers dropped for measures like dividing contracts into lots. Patil (2017) returned similar findings on a policy-practice gap in Indian public procurement. The reasons for it include the non-binding nature of SME-oriented policy, inadequate monitoring of public buyers, institutional tensions between efficiency and socio-economic goals in public procurement, and buyer under-professionalization (Kidalov and Snider, 2011; Flynn, 2018).

Other studies investigate how public buyers act on policy recommendations and support SMEs using case study method. Along these lines, McKevitt et al. (2014) present examples of public buyers trialling the division of contracts into lots and creating multi-party framework agreements to give SMEs equal opportunity to compete. Likewise, Shelton and Minniti (2018) offer cases of public buyers educating ethnic minority-owned SMEs about the procurement process and being open to their products and services. Other investigations concentrate on specific public buyer actions like accelerated payments to SME suppliers during the Covid-19 pandemic e.g., Melnyk et al. (2021). Instances of public buyers mentoring SMEs in areas like personal development, influencing skills and networking can also be found (McKevitt and Davis, 2015; Selviaridis and Spring 2022). Based on the results of these studies, SME-oriented policy has a dual function in tackling systemic barriers and prompting buyers to reach out to SME suppliers.

Is SME-oriented procurement policy effective? Researchers have tried to answer this question with panel datasets. Some results are consistent with *a priori* expectations while others are not. Starting with the former, data from the United States and Japan shows that setting-aside contracts for SMEs can maintain their presence in the market without raising the cost of procurement (Nakabayashi, 2013; Brunjes and Rodriguez-Plesa, 2024). Support is also returned for keeping contracts small where possible, as SMEs' likelihood of success is inversely related to contract size (Albano et al., 2015; Glas and Eßig, 2018; Hoekman and Taş, 2022). Likewise, open competitions, where all interested suppliers have the opportunity to bid, are conducive to SME involvement (Glas and Eßig, 2018; Nemec et al., 2021; Arosa et al., 2025).

The evidence is mixed for other policy measures. While Most Economically Advantageous Tender (MEAT) evaluation can motivate SMEs to bid (Nemec et al., 2021), it does not translate into higher win rates compared to price-only evaluation (Stake, 2017). This is noteworthy because MEAT is a mainstay of SME-oriented policy and is (wrongly) assumed to be a systemic barrier to SME involvement. One explanation is that price-led competition is often used to decide lower value contract awards, which SMEs are better positioned to win. Like MEAT, the division of contracts into lots is synonymous with SME-oriented procurement. Even though there is evidence that lots increase SMEs' bidding activity, its relationship to contract success is weak or conditional on specific lot ranges (Glas and Eßig, 2018; Nemec et al., 2021; Hoekman and Taş, 2022).

Overall, research reveals that SME-oriented policies are multifaceted, implementation of them is patchy, public buyers are generally sympathetic to SMEs, and well-intentioned policies sometimes yield unanticipated outcomes. There are opportunities to advance these lines of inquiry. One is to discover more about the factors that promote or inhibit full policy implementation. Besides the influence of buyer and organisational characteristics (Flynn and Davis, 2016; Flynn, 2018), little is known about this issue - a consequence of theory-lite studies that lack explanatory power. Another is to undertake additional impact assessments of policy measures like dividing contracts into lots and using MEAT evaluation criteria. The evidence adduced to date is not enough to allow us to make definitive claims. Finally, researchers should be mindful of how SME-oriented policies play out across different levels of government (Nicholas and Fruhmann, 2014). What works for local government procurement may not work for central government procurement, and so forth. Policy contextualization of this sort is missing from the literature.

3.2.3. SME capacity

The external environment is not the only influence on SME involvement in public procurement. SME capacity also matters. This is apparent in the many studies that examine SMEs' resources, capabilities and competitive orientations for tendering. One of the first, by Karjalainen and Kemppainen (2008), found that SMEs with fewer legal and administrative resources reported lower involvement in public procurement at local and national level. Subsequent studies have investigated how tangible and intangible resources like human capital, operating experience, training, and IT affect SMEs' propensity to bid for and win public contracts (Pickernell et al., 2011; Flynn et al., 2015; Saastamoinen et al., 2017; Di Mauro et al., 2020). Financial resources are also relevant. Konno (2014), for instance, found that financially robust SMEs were less likely to exit the marketplace for public construction contracts in Japan.

Allied to resources, capabilities are a determinant of SME involvement in public procurement. Capabilities can be of a procedural type i.e., being able to navigate the technical aspects of tendering or a relational type i.e., being able to engage with and persuade public buyers (Flynn and Davis, 2017). The same authors found procedural and relational capabilities are predictive of SME success in contract competitions. Similar to relational capability, supplier-supplier and supplier-buyer networking capability has received attention. Woldesenbet et al. (2012) included it among the factors that help SMEs to secure business with large public and private sector customers while Reijonen et al. (2022) showed that horizontal networking between SMEs increased the probability of joint bidding and success in contract competitions. Non-empirical studies also argue that SMEs should hone their networking, knowledge acquisition and knowledge transformation

capabilities to realise success in international public contract competitions (Akenroye et al., 2020; Fayos et al., 2022).

How SMEs position themselves in the public sector marketplace is another determinant. Researchers have borrowed from marketing, strategy and entrepreneurship concepts and theories to test the effect of SME positioning. Reijonen et al. (2016) and Tukamuhabwa and Namagembe (2023) use entrepreneurial orientation and its sub-dimensions of innovation, risk-taking and proactiveness to explain SME involvement, for example. Their results found that behaving entrepreneurially is conducive to success in public procurement, as measured by contract search and bid submission activity. Other studies use market orientation, which means gathering information on competitors and customers in order to formulate better value propositions, to explain SME involvement (Tammi et al., 2014; Saastamoinen et al., 2020). Even though these theories originated in studies of organisational behaviour in the private sector, they are shown to have validity for rationalising SME success in public procurement.

The SME capacity theme is a counterweight to systemic barriers and policy and practice intervention themes because it looks at internal factors under the control of SMEs. Its results are consistent with *a priori* expectations insofar as SMEs with greater resource and capability endowments do better in contract competitions. The same applies to SMEs who are innovative and proactive in serving their public sector customers and monitoring their competitors. This line of inquiry come with caveats, admittedly. Most studies use cross-sectional survey data, thus raising doubts over cause and effect. Rather than resources, capabilities and entrepreneurial orientations being deterministic, it could be that success in public procurement enables SMEs to accumulate tendering-specific resources and capabilities and be innovative and proactive. Studies also examine different sets of resources and capabilities, which makes it hard to directly compare them or state with certainty if the observed effects are one-off or part of a general pattern.

A further issue is that many studies treat resources and capabilities as invariant across the SME population. This is despite evidence from Flynn (2017) showing that micro-enterprises have fewer resources or capabilities than small-enterprises, and small-enterprises have fewer resources or capabilities than medium-sized enterprises. There is also an assumption that the resources, capabilities and competitive orientations required of SMEs are the same irrespective of public sector organisation type. Studies that do distinguish between organisation types show this to be misplaced. In the case of Karjalainen and Kemppainen (2008), e-invoicing systems were important for SMEs supplying central government organisations but not municipal organisations while in the case of Pickernell et al. (2011), R&D activity and business advice services mattered for SMEs competing for national public contracts but not local contracts.

3.2.4. SME performance

The fourth theme comprises recent scholarship on an *ex-post* aspect of SME involvement in public procurement. The question it seeks to answer is whether public contracting leads to improved SME performance. The evidence furnished to date shows that it does have positive effects on productivity and growth. Maksimov et al. (2017) showed that SMEs with government customers have higher levels of organisational efficiency which, in turn, links to higher employee salaries. Hoekman and Sanfilippo (2020) similarly observed that SMEs with government customers experience significantly higher labour productivity than SMEs without government customers; the effect being strongest for micro-enterprises and manufacturing firms. Ravenda et al. (2022) reported that public contract awards can improve not only SMEs' labour productivity but also profitability, employment growth and sales growth. Evidence can also be found in Li (2024) that points to the positive effect that public contracting has on the creation of higher skilled jobs in SMEs.

A follow-on question is if these productivity and growth gains are temporary or enduring. Fadic's (2020) findings suggest the former. Among the SMEs he analysed, growth in revenue, employment and assets did not outlive the duration of the contract and there were no lasting spillover effects on SMEs' sales to public or private sector customers. The same pattern is repeated elsewhere. Lewis (2017:780) concluded that the revenue growth SMEs experience from participating in preferential procurement programmes is because "they are being handed more money, not because they are becoming stronger businesses". Short-run boosts to employment growth that disappear one-two years after SMEs secure government contracts are also evident in panel data studies by Srhoj and Dragojević (2024) and Song and Ahn (2024). The indications are that winning a public contract boosts SME performance in the short-term but does not lead to sustained competitiveness.

As well as productivity and growth, researchers have examined whether SME involvement in public procurement is associated with innovation outcomes. There is cause for optimism in these results. Rocha (2018) linked involvement in the Brazilian state-run energy sector to a higher probability of SME innovation while Storz et al. (2022) found that SMEs involved in Chinese public procurement were more likely to introduce new-to-market product innovations. Public procurement has also been shown by Saastamoinen et al. (2018) to mediate the relationship between SMEs' network embeddedness and the introduction of new-to-market products and services, and by Dai et al. (2021) to increase R&D investment and high-tech product sales. The innovation dividend for SMEs is stronger with national contracts than local contracts, based on analysis by Tammi et al. (2020).

The above results are consistent with the hypothesis that public procurement exerts a demand-pull effect on firm-level innovation. Theory accounts for this effect by reference to a reduction in market and information uncertainties (Saastamoinen et al., 2018; Tammi et al., 2020; Dai et al., 2021; Storz et al., 2022). When public sector organisations issue a requirement for products that do not currently exist but can be manufactured quickly, it reduces market uncertainty by presenting SME suppliers with the chance to prototype products or technologies. Moreover, when public sector organisations specify the technical requirements of desired products, it reduces information asymmetries associated with new-to-market product innovation. The benefits of innovation-oriented public procurement, as illustrated in case studies by Zabala-Iturriagagoitia (2022), accrue to SME suppliers and public sector organisations. SMEs get to augment their technological capabilities and use the initial commercialisation event to break into new markets. The public sector, meanwhile, gets to exploit supplier ingenuity as part of achieving efficiency and effectiveness in service delivery.

Other performance outcomes have also been considered in respect of SME involvement in public procurement. Access to finance is one of them. Ostensibly, the award of government contracts eases SMEs' financing constraints. However, as SMEs require upfront working capital to commence the contract and payment is made only after product or service delivery, public contracts can exacerbate SMEs' financing constraints, at least initially. This is what Schafer et al. (2024) discovered. Their findings are partially supported by Kinyua et al. (2024) who found that public contracting negatively affects SMEs' access to finance in developed economies but not in developing economies. Internationalization is another performance outcome that researchers have studied. The picture here is mixed, with analysis suggesting that public contracting enables the internationalization of SMEs in some jurisdictions e.g., South America (Cardoza et al., 2016) but not in others e.g., China and Italy (Cardoza et al., 2015; Ballerini et al., 2023).

Summing up, while public contracting temporarily boosts SME productivity and growth, additional empirical testing is warranted to determine if sustained improvements in SME growth can be realised. Theoretical elaboration of the dynamics of this relationship is also required. Suggestive of the possibilities here, Dai et al. (2021) and Schafer et al. (2024) see public contracts as creating a "certification effect" for SMEs. In other words, winning a public contract signifies to future customers that the SME is a reputable supplier. Other scholars

aver to the organisational learning that comes from supplying large public sector customers, and how this might explain productivity gains and revenue growth (Fadic, 2020; Ravenda et al., 2022). Empirical results also indicate that public procurement has a demand-pull effect on SME innovation. However, further testing and theorising is needed to substantiate this claim and identify the supply and demand conditions under which it is most likely to occur.

3.2.5. Sustainability in the public sector

The final theme relates to sustainability in the public sector. The focus of research here is on the relationship between SME involvement in public procurement and sustainability outcomes for the public sector. There are two main strands to this theme. The first is about the public sector contracting with SMEs in furtherance of socio-economic objectives. The second is about eliciting corporate social responsibility (CSR) from SMEs for the greater social good. Each is outlined in turn. Leveraging public procurement expenditure for socio-economic objectives, also called sustainable public procurement, gained traction in the mid-2000s. SMEs are part of its equation. Walker and Preuss (2008) and Walker and Brammer (2009) were among the first to contend that public sector organisations could encourage sustainable development by sourcing from SMEs. This is because sourcing from SMEs is linked to economic multiplier effects, faster job creation, place-based service solutions, and a lower environmental footprint.

Subsequent scholarship extended this line of argument. Cabras (2011), Peck and Cabras (2011), and Preuss (2011) offer fine-grained analyses of how contracting with SMEs stimulates demand in the local economy and injects resilience into local-regional supply chains. As the same authors postulate, one of the attractions of SMEs as public sector suppliers is their embeddedness in the local business eco-system and their re-spend of public contract money with peer SMEs. A vibrant local economy, in turn, generates revenue for the Treasury, thus creating a virtuous financial cycle. The extent to which public sector organisations pursue sustainability by contracting with SMEs varies by level of government. In Germany, Glas et al. (2017) observed that procurement goals like supporting SMEs and promoting regional development hold greater salience for decentralized organisations like local government authorities than centralized organisations. This is because supporting SMEs and promoting regional development dovetail with their corporate objectives (Walker and Brammer, 2009; Glas et al., 2017).

Eliciting CSR from SMEs is the other focal point of research in this theme. It involves using the financial power of procurement to induce pro-social SME behaviour. Baden et al. (2009, 2011) describe public buying organisations coaxing CSR-type behaviours related to employee wellbeing, health & safety and environmental protection from SMEs through tender specifications, evaluation criteria and performance conditions. The targeted use of procurement in this manner can have the desired effect, with SMEs willing to embrace these practices in response to buyer demands (Baden et al., 2009), although reservations about the "ceiling effect" of standards imposed by the public sector cannot be discounted (Baden et al., 2011). Other studies have variously examined how governments use procurement to push SMEs to adopt certifications like ISO 9000 (Kakouris and Sfakianaki, 2019) or environmental standards (Krieger and Zipperer, 2022). In turn, SMEs' CSR and sustainable operations yield positive externalities like stronger employment rights for supply chain workers and a cleaner environment for citizens.

The sustainability theme is rich in case studies of local government authorities contracting with SMEs to create economic multiplier effects for their county or region. It also offers insights into public buyers using "carrot and stick" tactics to get SME suppliers to embrace CSR. There is still much to be known, however. Researchers could start by quantifying the socio-economic effects of contracting with SMEs. Thereafter, theoretical explanations of how and why public sector organisations contract with SMEs for socio-economic objectives is desirable. Walker and Brammer (2009) used stakeholder theory, which is intuitively appealing for this topic. It is also advisable for research to move beyond local government authorities and consider other types of public sector organisations when investigating the sustainability rationale for working with SMEs. Analysis of how buyer-driven CSR and sustainability affects SMEs is also required, as the literature on it is sparse. For instance, does imposing social and environmental standards on SME suppliers restrict competition for contracts and lead to higher bid prices?

4. Discussion

As the review shows, SME involvement in public procurement constitutes a not insubstantial body of scholarship that contains insights for academics and practitioners. Progress notwithstanding, the subject has weaknesses in areas like theory application, empirical rigour and amassing evidence. There is also limited awareness of how the various literatures integrate. In a metaphorical sense, we have yet to see the wood from the trees. As this paper has identified the main thematic lines of inquiry, the next logical step is to try to put them together in a unifying conceptual framework. While the themes are meaningful in their own right, it is important to situate them within a broader context. In effect, themes like SME capacity and SME performance are pieces of a puzzle that need to be put together in the right way to build a complete picture of SME involvement in public procurement. This is what the framework does, essentially. The paper takes its cue from Seuring et al. (2020) who advocate the use of systematic reviews for developing frameworks and other theory-building initiatives in PSM research.

SME involvement in public procurement sits at the centre of the framework (see Fig. 3). On the left-hand side are the influencing factors or *ex-ante* aspects of involvement, which include the themes of systemic barriers, SME capacity and policy and practice interventions. The influence of systemic barriers and SME capacity on involvement are assumed to be moderated by policy and practice interventions. SME motivation for involvement is included as an additional influencing factor. It was not inferred from the literature as very little research on it exists but is undoubtedly integral to understanding SME involvement. On the right-hand side of the framework are the outcomes or *ex-post* aspects of involvement, which include the themes of SME performance and sustainability in the public sector. Competition in the supply marketplace is added as a third outcome. It was not inferred from the literature either but is an outcome of SME involvement and the framework would be deficient without it. Overall, the framework seeks to account for the factors that influence SME involvement in public procurement and the outcomes from this involvement. It is described in more detail in sections 4.1- 4.2.

4.1. Influencing factors for SME involvement

Systemic barriers are an environmental factor that impede SME access to public procurement, as studies examined in this review demonstrate (Loader, 2013; Woldesenbet and Worthington, 2019; Akenroye et al., 2024). The expectation is that higher levels of systemic barriers like bureaucracy and onerous qualification criteria are associated with lower SME involvement. SME capacity, on the other hand, is an organisational factor that can support involvement. Research confirms that SMEs with greater stocks of supplier-relevant resources (Karjalainen and Kemppainen, 2008; Pickernell et al., 2011; Di Mauro et al., 2020) and capabilities (Woldesenbet et al., 2012; Flynn and Davis, 2017) and stronger competitive orientations (Reijonen et al., 2016; Saastamoinen et al., 2020) are more active in searching out, bidding for and winning public contracts. These organisational attributes enable SMEs to correctly identify user needs, competently respond to tenders and effectively deliver contracts. As findings from Uyarra et al. (2014) imply, better resourced SMEs are also in a position to navigate around systemic barriers by, for example, having the personnel to cope with the bureaucratic demands of tendering.

As per the framework, the effects of systemic barriers and SME capacity on involvement in public procurement are assumed to be

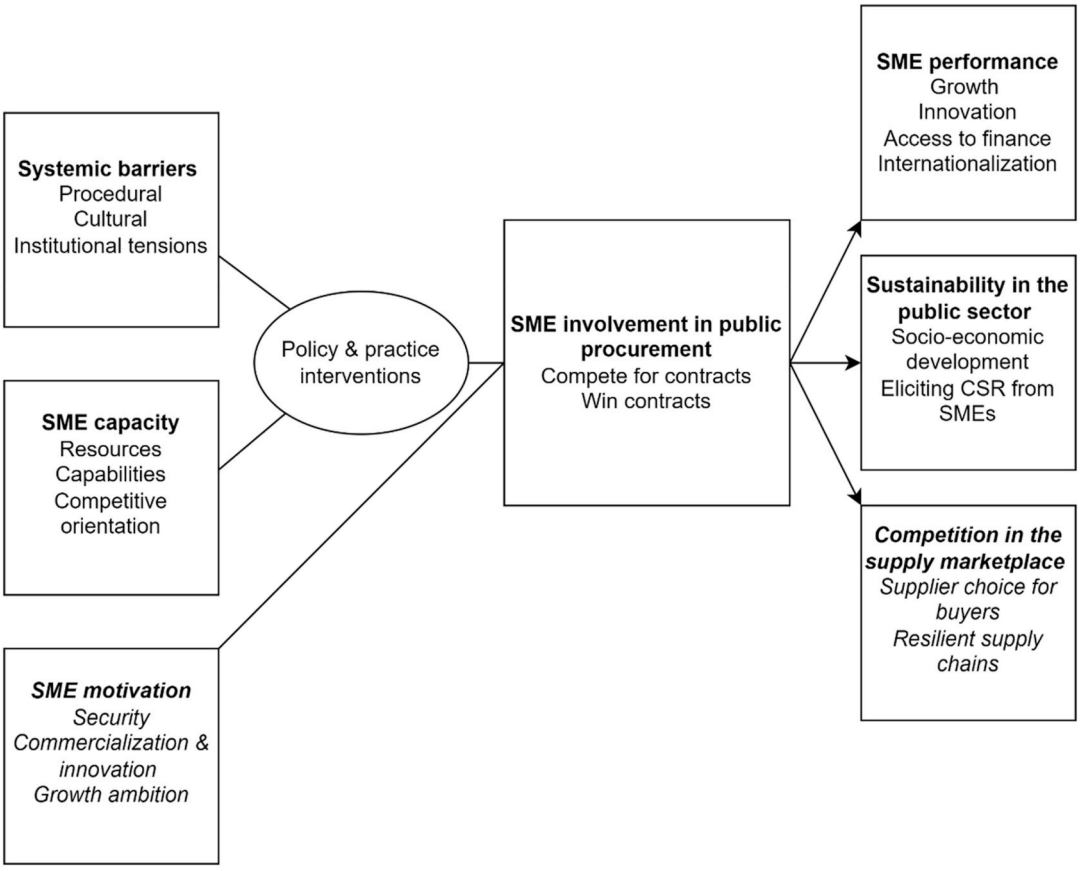


Fig. 3. Conceptual framework for SME involvement in public procurement.

moderated by policy and practice interventions. Most governments have rolled out policies with the aim of removing or reducing systemic barriers by, for instance, relaxing qualification criteria and minimising paperwork through digitization (Loader, 2018). However, as this review has found, policy effectiveness depends on several factors such as crafting measures that help rather than inadvertently hinder SMEs (Nicholas and Fruhmann, 2014) and, thereafter, securing buyers' goodwill and co-operation in implementing such measures (Flynn and Davis, 2016; Patil, 2017). Along with demand-side interventions, policy and practices can boost the supply of SMEs for public procurement. State-supported training programmes can enhance SMEs' tendering skills, giving them greater capacity to compete (Saastamoinen et al., 2017). Likewise, buyer-led mentoring initiatives can educate SMEs about the idiosyncratic purchasing requirements of the public sector and how to satisfy them (McKevitt and Davis, 2015; Selviaridis and Spring 2022).

Motivation was not a theme inferred from the literature, but it is a pre-condition for SME involvement in public procurement. As well as having the capacity to compete for and deliver public contracts, SMEs must want or need something from the public sector to get involved. Observations made in some studies allude to security as a motivator, with SMEs citing certainty of payment, longer contracts and predictable sources of demand as reasons for wanting to do business with public sector organisations (Loader, 2005; Peck and Cabras, 2011; Di Mauro et al., 2020). This points to public procurement's "safeguard" function, which allows SMEs to offset the risks associated with business-to-business (B2B) transactions (Purchase et al., 2009). Growth ambition and innovation could also be motivators, particularly for tech-based start-ups looking to commercialize new-to-market products or services (see section 5.1 also). SMEs' motivations will vary by sector. Direct contracting or sub-contracting is likely to be essential for SMEs in sectors where the State is the biggest customer e.g., defence, but only desirable for SMEs in sectors where the State is one among many customers e.g., professional services.

4.2. Outcomes of SME involvement

Outcomes from SME involvement in public procurement can be viewed at supplier, buyer and marketplace levels. At supplier level, success in contract competitions boosts SME growth in revenue, employment and productivity in the short-term, although the effects seem to dissipate quickly (Lewis, 2017; Maksimov et al., 2017; Fadic, 2020; Srhoj and Dragojević, 2024). Success in contract competitions also increases the likelihood of SMEs innovating and commercializing new-to-market products (Saastamoinen et al., 2018; Dai et al., 2021; Storz et al., 2022). These performance gains accord with policymaker and practitioner beliefs that public procurement can help to foster a dynamic SME sector (OECD, 2018; European Commission, 2019). At buyer level, selecting SMEs as suppliers is part of fulfilling the sustainability agenda of the public sector, particularly for local economic development (Walker and Brammer, 2009; Cabras, 2011; Preuss, 2011). Moreover, the public sector can use its purchasing power to incentivise current and prospective SME suppliers to adopt operating models and practices that advance causes like employment rights, decarbonization and community wellbeing (Baden et al., 2009, 2011; Krieger and Zipperer, 2022).

The third outcome is competition in the supply marketplace. It was not an inferred theme because very little academic research exists on it. At the same time, it is a logical extension of SME involvement in public procurement and is of critical importance. Higher numbers of SMEs competing for public contracts contributes to a competitive and diverse supply marketplace, which is what any government wants as part of maximising value for money (European Court of Auditors, 2023; National Audit Office, 2023). Notably, some of the earliest policy attempts

at facilitating SME access to public procurement originated out of a desire to intensify competition between suppliers rather than a concern for SMEs *per se* (see European Commission, 1990). By contrast, a reduction in the number of SMEs in the supply pool can lead to an increase in the cost of products and services, as large corporations assume dominant positions and price accordingly (Konno, 2014). Moreover, it raises the risk of supply chain failure as public buyers become over-reliant on large corporations. SME involvement is, therefore, in the interests of competitive supply markets and resilient supply chains in the public sector.

5. Conclusion

This paper led with the question of how researchers have engaged with the issue of SME involvement in public procurement. The descriptive statistical analysis provides one half of the answer by deconstructing the subject in terms of its chronology, disciplinary background, preferred methods, units of analysis, geographic scope etc. The follow-on content analysis provides the other half of the answer by inferring the main thematic lines of inquiry in the literature, weighing up their respective strengths and weaknesses, and distinguishing what we know from what we don't. Based on the content analysis, the paper puts forward a conceptual framework for understanding SME involvement in public procurement. The framework lets researchers visualize the influencing factors and outcomes associated with SME involvement and their inter-connections. Conceptual frameworks are a first step towards theory building (Seuring and Müller, 2008), and it is offered in this spirit. Going forward, the PSM community can critique, refine and validate the framework; all with the aim of advancing knowledge on SMEs and public procurement.

5.1. Future research priorities

This section sets out empirical, design, methodological and theoretical areas for future consideration, which represent a distillation of the research gaps listed in Table 4. It starts with empirical questions that deserve attention. Some of these are exploratory in form and involve tackling questions that have been largely overlooked such as SMEs' motivations to get involved in public procurement or the barriers that SMEs experience to the successful delivery of public contracts, as opposed to the barriers they experience when competing for public contracts. Other empirical questions are more confirmatory than exploratory as they involve strengthening and consolidating existing lines of inquiry. The impact of policy support measures on SME involvement in public procurement is one such example. While measures like MEAT and the division of contracts into lots have been analysed across several studies (Stake, 2017; Glas and Eßig, 2018; Hoekman and Taş, 2022), there is insufficient evidence for definitive conclusions to be reached about their efficacy at this point and more research is required.

When it comes to improving research designs, fine-grained treatment of our units of analysis is desirable. Most studies treat SMEs as a homogeneous group, despite micro-, small- and medium-sized enterprises differing in their experience of procedural barriers and their capacity to act as public sector suppliers (Karjalainen and Kemppainen, 2008; Flynn, 2017). Against this background, researchers are encouraged to move beyond a generalized view of SMEs and consider not only how size but also lifecycle stage affects SMEs' attitudes towards public procurement. For instance, technology start-ups might see public contracts as an opportunity to commercialize new products whereas mature SMEs might be more interested in public contracts for their stable revenue streams (Purchase et al., 2009). The same advice about avoiding generalizations also applies to treatment of public sector organisations. The operating contexts of organisations in the utility sector versus healthcare or in local municipalities versus central government agencies are different. This, in turn, has implications for SMEs' prospects of becoming public sector suppliers, and needs to be accounted for in our research designs.

Among the findings to come out of the review is that surveys and quantitative modelling are the preferred methods for investigating SME involvement in public procurement (e.g., Pickernell et al., 2011; Reijonen et al., 2016; Fadic, 2020; Ravenda et al., 2022). There is an opportunity to apply these same methods to the study of other dimensions of SME involvement that currently lack evidence like competition dynamics and sustainability. *Inter alia*, this could mean conducting cost-benefit analysis on the award of public contracts to SMEs or quantifying the effect that social and environmental criteria have on SME bid prices. The observed skew towards selecting SMEs as research informants is also worth mentioning. Prioritising SMEs has proved informative in learning about their experiences in public contracting, but it does raise issues over balanced representation. The solution is more studies that use public buyers as informants or that triangulate SME and public buyer data, as Selviaridis and Spring (2022) and Akenroye et al. (2024) did recently.

The final area for consideration is theory. Theory is not a strength of research on SME involvement in public procurement, with this review unable to find the explicit or implicit use of theory in most studies. This issue is not subject-specific, admittedly, with previous systematic reviews of public procurement and PSM detecting low levels of theory application and development (Flynn and Davis, 2014; Spina et al., 2016; Johnsen et al., 2017; Patrucco et al., 2017). It is in our interest, however, to increase the use of theory simply because it can provide scientifically accepted explanations of SME involvement in public procurement. Before that again, it ensures that emphasis is on explanation rather than description. There are already good examples of scholars leveraging entrepreneurship-related theories to explain SMEs' capacity to compete for public contracts (Saastamoinen et al., 2020; Tukamuhabwa and Namagembe, 2023) and institutional theory to explain systemic barriers facing SME suppliers (Woldesenbet and Worthington, 2019; Akenroye et al., 2024), to name two areas. Future research can use them as reference points when deciding on their own theoretical direction.

5.2. Practitioner recommendations

Several practitioner recommendations flow from the review, which are relevant to policymakers, public buyers and SMEs. For policymakers and public buyers, it is time to re-evaluate "SME-friendly" policy – something Nicholas and Fruhmann (2014) called for previously. Questions should be asked of its design, especially as measures like splitting contracts into lots and using MEAT evaluation may not actually benefit SMEs (Stake, 2017; Glas and Eßig, 2018). Questions should also be asked of its implementation, with public buyers either not able or willing to fully translate it into practice because it conflicts with other policy goals or because they lack the requisite skills (Kidalov and Snider, 2011). The one-size-fits-all nature of SME-friendly policy is also suspect, with studies indicating that SMEs' experience of systemic barriers and their capacity and willingness to compete for public contracts vary by size, lifecycle stage, industry and other factors besides (Uyarra et al., 2014; Flynn, 2017). These questions are important in light of recent indications that progress towards a more inclusive public procurement marketplace for SMEs has stalled (European Court of Auditors, 2023).

The review also suggests actions that SMEs can take to improve their own prospects in public procurement. SMEs may not be able to change the reality of systemic barriers, but they can build stocks of resources and capabilities for public contracting. One way to accomplish this is by exploiting network connections and collaborating with their SME peers to overcome individual capacity limitations (Fayos et al., 2022; Reijonen et al., 2022). Another is to be receptive to public buyers who are willing to mentor SMEs and embed them in supply chain networks (Selviaridis and Spring 2022). Entrepreneurship may seem anathema to public procurement given its bureaucratic and legalistic form, but SMEs that take a proactive approach to identifying public sector customer

requirements and formulating innovative value propositions reap the rewards (Tammi et al., 2014; Reijonen et al., 2016). Relatedly, SMEs must be responsive to growing public sector interest in sustainability if they are to differentiate themselves in contract competitions and be selected as preferred suppliers (Krieger and Zipperer, 2022).

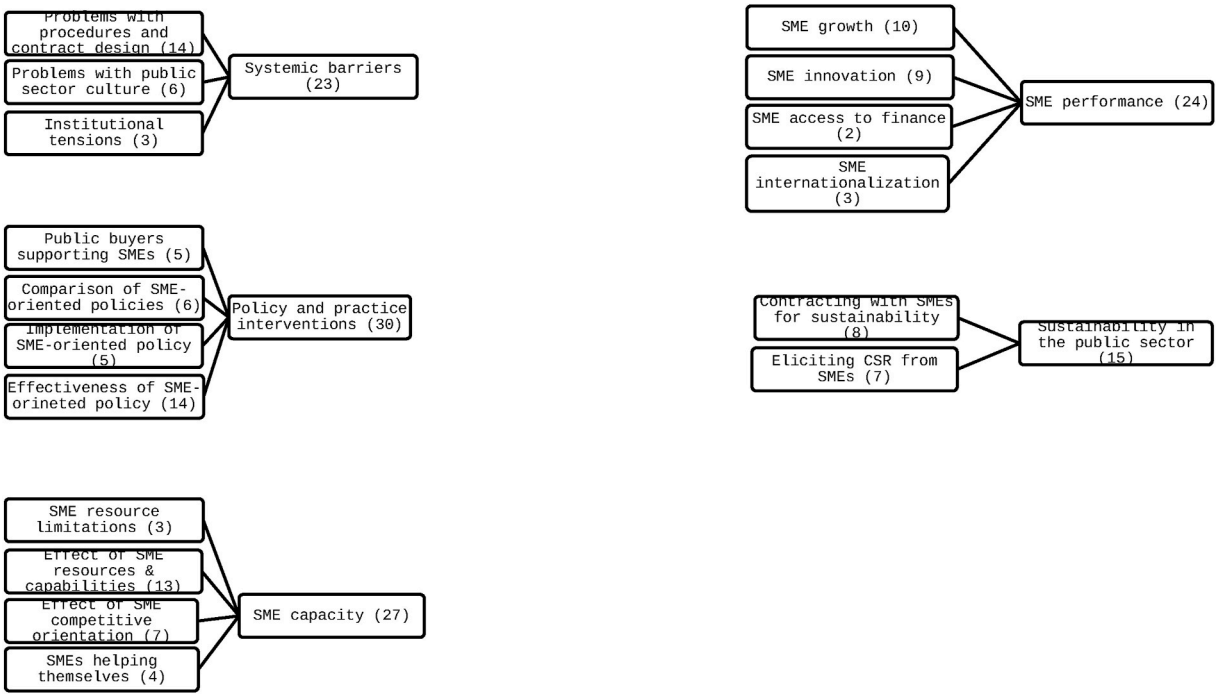
5.3. Limitations

The paper acknowledges the following limitations. In terms of scope, the review is confined to academic articles published in ABS-ranked journals. It excludes research published in non-ABS journals, edited books and monographs that could be relevant to the subject. It also excludes practitioner reports containing evidence on areas like policy effectiveness and SME outcomes in contract competitions (see World Bank, 2017 or European Commission, 2019). The manual coding approach followed in the paper carries a risk of researcher subjectivity and bias. Some scholars hold the stance that it is more scientific to exploit data mining software when looking for research themes, as Rejeb et al. (2023, 2024) did when they created a keyword co-occurrence network using public procurement articles. A third limitation is that the review touches on but does not explore in depth subjects like innovation and green public procurement that run parallel to SME involvement in procurement. Readers interested in these subjects are advised to consult existing systematic literature reviews for a comprehensive treatment (Cheng et al., 2018; Obwegeser and Müller, 2018). Finally, the conceptual framework proposed by the paper is provisional and will most likely need to be refined and improved on in the coming years.

Declaration of competing interest

None.

Appendix A. Codes and themes



Data availability

No data was used for the research described in the article.

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