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// Bastian Krieger (ZEW), Lena Füner (ZEW), Philipp Rolinck (University of Heidelberg)

Facilitating Access for Innovative Start-Ups to the Procurement Market: The Potential of Criteria-Based Contract Awards

Strengthening private-sector innovation is considered a key prerequisite for Germany's and Europe's long-term competitiveness. Public procurement can serve as an instrument in this regard, but it has so far been undervalued. Equivalent to roughly 18 percent of Germany's GDP, it is one of the largest demand-side instruments in government innovation policy. Start-ups can benefit from successful bids in two ways: contract awards secure initial demand, and they provide a signal of quality to customers and investors. A new academic study based on 4,260 young German companies aged seven years or less shows that 16.3 per cent of young firms have submitted at least one bid for a public tender since their foundation, with 10.4 per cent having been awarded at least one contract. The study also shows that the relevance of public procurement to innovation is closely linked to the design of the individual tender. Criteria-based awards incorporating additional quality, environmental or innovation criteria are linked to more frequent applications and a higher success rate among innovation-oriented young companies. Within existing procurement practice, they can serve as a pathway for start-ups with an innovation profile to access the procurement market. In contrast, contract awards without criteria that go beyond price show no correlation whatsoever with the innovative characteristics of young companies but are associated exclusively with indicators of resource strength.

KEY MESSAGES

- Promote innovation by systematically expanding criteria-based procurement: Public procurement authorities can increase the innovation-policy alignment of their procurement volume by increasing the proportion of criteria-based tenders.
- Increase the visibility of innovation in bids: A contract award only refers to visible innovation characteristics. Through the wording of the award criteria and the acceptance of different types of evidence for innovation, procurement authorities can influence which types of innovation are considered visible within the procurement process.
- Lower barriers to entry for small businesses: The number of employees is the only characteristic that is positively linked to both types of procurement procedure and both stages of the process. Those wishing to broaden the participation of young companies can start at the lower threshold: consistent lot division, reasonable qualification requirements and a simplified administrative procedure.

GERMANY'S INNOVATION MOMENTUM IS UNDER PRESSURE

Germany and Europe are falling behind in the technology race

Innovation is a key driver of productivity, growth and competitiveness (Dietrich et al., 2024; Fieldhouse and Mertens, 2023). At the same time, international competition for leadership in future technologies is intensifying, with Europe and Germany's role in this field becoming increasingly marginalised (Dietrich et al., 2024; Mueller and Boeing, 2024). Against this backdrop, the question of which innovation policy instruments, beyond traditional research funding, can be used to strengthen private-sector innovation activity becomes prominent.

PUBLIC PROCUREMENT AS LEVER FOR INNOVATION

At around 18 per cent of German GDP, public procurement is a major demand-side levers of government innovation policy

Innovation policy in Germany and Europe has traditionally focused on supply-side instruments: direct research funding, tax incentives for research and development and venture capital initiatives (e.g. Czarnitzki et al., 2020). By contrast, the demand-side dimension of government innovation policy has long been underestimated, despite pooling considerable volumes of funding (e.g. Edler and Georghiou, 2007). In 2021, public procurement accounted for around 15 per cent of the gross domestic product (GDP) of OECD-EU countries and 18 per cent of German GDP (OECD, 2023). Given this volume, public procurement is considered one of the largest demand-side instruments of government innovation policy. However, whether this potential translates into an actual shift in private-sector innovation activity depends on the design of award procedures (e.g. Edler and Georghiou, 2007).

PUBLIC CONTRACTS HOLD PARTICULAR POTENTIAL FOR START-UPS

Contract awards enable start-ups to secure demand and provide a signal of quality to investors and customers

Start-ups are often founded to bring new products, services or business models to market and are therefore regarded as key carriers of innovation (e.g. Schneider and Veugelers, 2010). A contract award provides them with secured and quantifiable demand during the start-up phase (e.g. Edler and Georghiou, 2007; Hvide and Meling, 2023), enabling them to build production capacity and supplier relationships. The public sector is not only a high-volume market but also a reliable sector with a low risk of default. In addition, a contract award itself functions as a signal of quality. Selection procedures used by public procurement authorities reduce information asymmetries vis-à-vis investors and customers; this facilitates access to external finance (Dai et al., 2021). However, this potential applies only to a subset of start-ups: the majority operate exclusively in private markets, and across all start-ups, only a minority apply for public tenders at all. This means that, rather than being the norm, public procurement is simply one of several markets that young companies can access. However, for the companies that do seek access to this market, the potential benefits of secured demand and a credible quality signal still apply.

PRICE-BASED AND CRITERIA-BASED PROCUREMENT FOLLOW OPPOSING INCENTIVE STRUCTURES

Price-based procedures favour cost leadership, while criteria-based procedures open up competitive space for quality and innovation

The academic literature distinguishes between two basic types of public tenders based on the award criterion (e.g. Krieger et al., 2024). Price-based procurement awards the contract to the bid offering the lowest price for a product that is clearly specified ex ante. The incentive structure favours cost leadership: A bid that exceeds the price cap specified in the tender is more likely to be rejected (Uyarra et al., 2014). Price-based procurement remains a widespread practice because the evaluation of submitted bids requires less administrative effort (OECD, 2016).

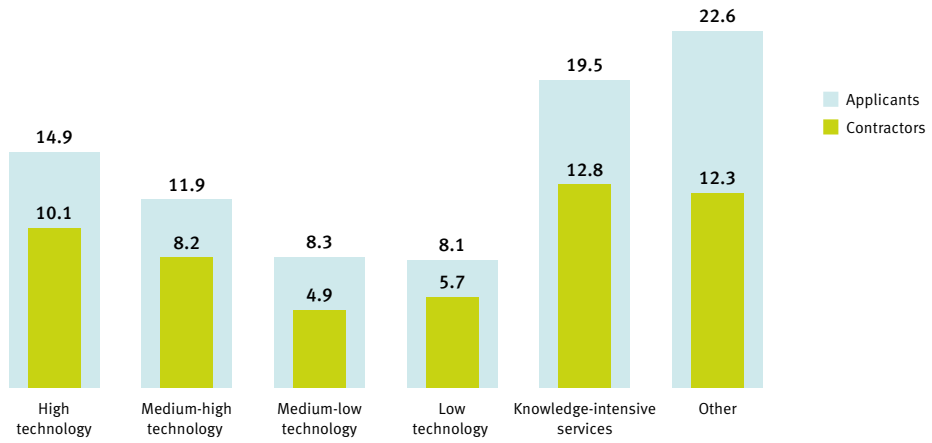
Criteria-based procurement takes into account not only the price but also additional award criteria such as qualitative, environmental or innovative aspects. In practice, this type of procurement therefore corresponds to a tender based on the most economically advantageous offer, or on the principle of the Most Economically Advantageous Tender (MEAT). This creates a space in which bidders can compete on the quality and novelty of their solutions; it enables innovative young firms to compensate for resource disadvantages by offering superior solutions.

PRICE-BASED PROCUREMENT SHOWS NO POSITIVE ASSOCIATION WITH INNOVATION AMONG START-UPS

Innovation characteristics are associated only in criteria-based procurement

The specific conditions under which young firms participate in public procurement tenders and receive contract awards have so far been insufficiently explored empirically. Krieger, Füner and Prüfer (2026) examine the participation of start-ups in public procurement tenders using the IAB/ZEW Start-up Panel (Rodepeter et al., 2025). Their analysis is based on the 2022 survey wave, with a sample of 4,260 responding start-ups. Within this sample, 693 have applied for a public tender at least once since their foundation (16.3 per cent), and 445 have received at least one contract award (10.4 per cent).

FIGURE 1:
SHARE OF START-UPS IN PER CENT



Note: The figure shows, by sector, the share of start-ups that have applied for public tenders or have been awarded public contracts since their foundation. Lighter bars: Applicants. Darker bars: Contractors.

Innovative features are associated exclusively with criterion-based procurement

Figure 1 shows, for each sector, the share of start-ups that have applied for public tenders or received a contract award since their foundation. Two patterns stand out. First, participation varies considerably by sector: it is highest in other industries (22.6 per cent applicants) and in knowledge-intensive services (19.5 per cent), while it is lowest in low-technology and medium-low-technology industries, at around 8 per cent. Second, the share of firms receiving a contract award is lower than the share of applicants in every industry; in other words, some firms are consistently lost between application and contract award. This gap is largest in other industries (from 22.6 to 12.3 per cent) and smallest in low-technology industries (from 8.1 to 5.7 per cent). The key finding of the study is a split by procurement type: innovation characteristics are positively associated with application and contract award only in criteria-based procurement, while no positive association can be demonstrated in price-based procurement.

VISIBILITY OF INNOVATIONS IS CRUCIAL FOR CRITERIA-BASED CONTRACT AWARDS

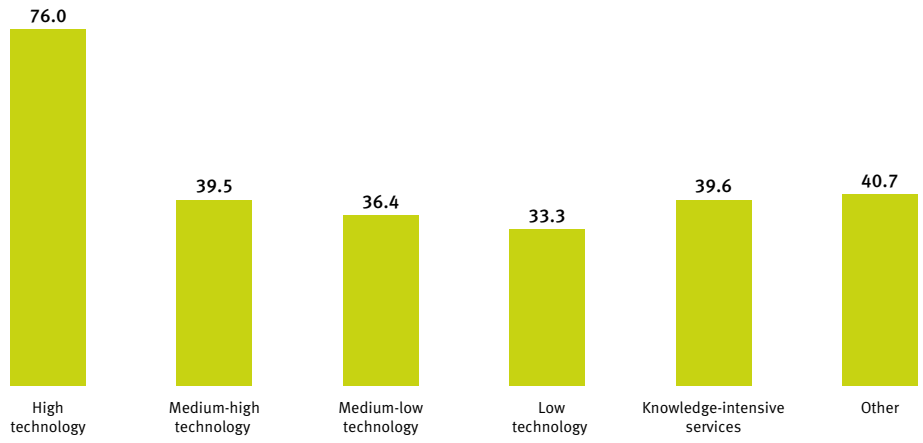
Furthermore, differences emerge between the application and award phases within criteria-based procurement. In the application phase, innovation characteristics that are initially not visible to the contracting authority in the bid, e.g. internal research activities, and directly verifiable characteristics, e.g. founder qualifications, show a positive correlation. In the award phase, the correlation with characteristics that can only be observed internally is no longer evident, whilst the characteristics observable to the procurement authority – such as market innovations that have already been introduced – remain significant. This indicates that innovative start-ups apply on the basis of their internal innovation capabilities but generally receive a contract award only if they can present their innovation in a verifiable form in the bid. A research-intensive start-up without any implemented innovation therefore enters a procurement procedure in which its innovation capability may potentially remain structurally unrecognised. However, this asymmetry is not a deficiency of criteria-based procurement as such but rather offers some scope for designing the procedure: Through the specification of award criteria and the admission of different forms of evidence for innovation, procurement authorities can directly influence which type of innovation is rewarded in the procurement process.

THE PREVALENCE OF CRITERIA-BASED PROCUREMENT DIFFERS BY SECTOR

Lower shares of criteria-based contractors indicate untapped innovation potential

Figure 2 breaks down the share of successful start-ups that have received at least one contract award in a criteria-based procurement procedure. One finding stands out: In high-technology sectors, the share of successful contractors is 76.0 per cent, considerably more than in all other industries. The other industries are clustered together, with values ranging from 33.3 per cent (low-technology) to 40.7 per cent (other sectors). Criteria-based contract awards are thus clearly concentrated in high-technology sectors, whereas in the remaining sectors the majority of successful companies have not received a criteria-based contract award.

FIGURE 2:
SHARE OF CRITERIA-BASED CONTRACTORS IN PER CENT



Note: The figure shows, by industry, the share of criteria-based contractors among all young firms that have won public contracts since their foundation.

Since criteria-based procurement serves as an access route for innovation-oriented start-ups, its low share outside high-technology sectors also points to scope for redesigning the procedure: Where the respective type of service or product has quality- or innovation-relevant dimensions that have so far not been addressed through award criteria, an expansion of criteria-based procedures could unlock additional innovation potential.

FIRM SIZE IS RELEVANT ACROSS ALL PROCUREMENT TYPES AND STAGES

A critical mass of employees appears to be relevant, but each additional employee plays a smaller role

While it is true that price-based procurement is not associated with innovation characteristics, this does not mean that no selection takes place in such procedures. Resource-related characteristics remain relevant across both types of procurement. Specifically, the number of employees stands out as the only characteristic that is consistently associated with both a higher willingness to apply and a higher probability of receiving a contract award in price-based and criteria-based procurement. In the application phase of both types of procurement, as well as in price-based contract awards, this correlation decreases as the number of employees rises. Additional employees are an advantage primarily for smaller companies, while their importance declines for larger companies. It seems likely that reaching a critical mass of employees is particularly relevant, whereas additional employees exceeding this number play a smaller role.

CRITERIA-BASED PROCUREMENT TO FACILITATE ACCESS FOR INNOVATIVE START-UPS TO THE PUBLIC SECTOR MARKET

Criteria-based procurement heightens the impact on innovation but also entails additional effort

The findings suggest that criteria-based procurement should be treated as an access route for innovative start-ups. Expanding the share of criteria-based procedures could enhance the effectiveness of public procurement in terms of innovation policy, provided that the observed correlation also holds in areas where criteria-based procedures have so far been rare. However, such an expansion entails additional procedural effort as well as a need for investment in training, standardisation and formats for providing evidence (e.g. Camboni et al., 2025; Chiappinelli and Zipperer, 2017). Future research needs to quantify this effort in order to carry out a systematic cost-benefit comparison of price-based and criteria-based procurement across different scenarios.

BROAD PARTICIPATION AND THE PROMOTION OF INNOVATION ARE DISTINCT OBJECTIVES

Broad participation and the promotion of innovation follow different objectives

The study also shows that various company characteristics become relevant in different phases and types of procurement. From a policy perspective, this implies that two lines of action should be distinguished. Those seeking to increase the broad participation of start-ups in public procurement can do so by reducing size-related barriers. In procurement research, the consistent division of contracts into lots, reasonable qualification requirements and the simplification of administrative procedures are regarded as key starting points. Those aiming specifically to promote innovative start-ups can apply criteria-based procurement and make it easier for companies to prove their innovation record.

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Authors: Bastian Krieger (ZEW), Lena Füner (ZEW), Philipp Rolinck (University of Heidelberg)

Publisher: ZEW – Leibniz Centre for European Economic Research
L 7, 1 · 68161 Mannheim · Germany · info@zew.de · www.zew.de/en · x.com/zew_en

President: Prof. Dr. h. c. Achim Wambach, PhD · Managing Director: Claudia von Schuttenbach

Press Contact: Pascal Ausäderer · presse@zew.de

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