

Public Sector Entrepreneurship and the Role of SOEs: Workforce Distribution, Economic Growth, and Innovation

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Abstract. *Public sector entrepreneurship (PSE) has a significant impact on economic development, innovation and governance across different economies. Government are trying address the need for effective and equitable public delivery of services while maintaining industrial competitiveness and optimal use of taxpayer resources. The study builds on theoretical insights from public entrepreneurship literature, which emphasize the role of decentralized governance, innovation, and state-led industrial policies in shaping public sector entrepreneurial dynamics. Case-study approach is applied that integrates quantitative analysis of economic indicators with qualitative analysis of specific countries' characteristics to assess the potential of public sector entrepreneurship (PSE) and state-owned enterprises (SOEs) in the examined countries. The findings reveal significant structural differences between state-led economies and market-driven economies, where SOEs play varying roles in shaping employment structures and innovation capacity. The paper contributes to public sector entrepreneurship studies by offering a comparative analysis of context-defining variables such as workforce composition and SOE impact on national economies, demonstrating how institutional frameworks and governance models influence economic resilience and innovation potential. These findings reinforce the case that SOEs are essential for stabilizing economies where private capital fails to promote sustained economic growth. Public sector entrepreneurship varies greatly depending on context, influenced by national governance models, economic policies, and workforce structures. PSE strategies have to be tailored to fit national economic structures and governance capabilities.*

Keywords: public sector entrepreneurship, SOEs, workforce distribution, governance, economic growth, innovation, comparative economic models.

Introduction

Entrepreneurship in the public sector is an emerging research area where one can find diverse definitions and proposed applications of entrepreneurship principles in the context of public administration and public sector management. Compared to the traditional understanding of entrepreneurship, the idea of entrepreneurship in the public sector is relatively new. The earliest references to it can be traced back to the works of Wagner (1966) and Ostrom (1965). Public sector entrepreneurship (PSE) is viewed as a process of creating value for citizens and the economy through unique combinations of public and private resources (Wei-Skillern et al., 2007; Korosec & Berman, 2006). Other scholars define public sector entrepreneurship is a process of using resources in new ways that improve the functioning of public institutions (Osborne & Gaebler, 1992). Collaboration with the private sector (including through privatization) is a type of public entrepreneurship in which public organizations leverage private entrepreneurship (Savas, 2011; Hodges & Lapsley, 2016).

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The role of public sector entrepreneurship (PSE) in economic development has become an increasingly relevant topic in contemporary political economy and management science. Governments all over the world are trying to solve complex problems that require innovative solutions for balancing economic sustainability and public welfare on one hand, with industrial competitiveness and efficient use of taxpayer money, on the other hand. While traditional economic theories argue that entrepreneurship is primarily a private sector phenomenon, more recent theories prove the potential of entrepreneurial behavior within public institutions, state-owned enterprises (SOEs), and regulatory frameworks (Mazzucato, 2018; Osborne & Gaebler, 1992). Public entrepreneurship is fostered by decentralized governance models that encourage decisionmaking and stakeholder participation on local level, enhancing efficient use of common-pool resources (Ostrom, 2005).

Public sector entrepreneurship can be manifested in various forms, ranging from policy innovation and institutional reform to entrepreneurial governance and economic activity driven by state-owned enterprises (SOEs). Governments engage in entrepreneurial activities to address market failures, strategic national interests, and social development. The success of such interventions depend on unique combinations of factors such as: country governance model, institutional autonomy, significance of SOEs to the economy and level of economic growth. This article explores the theoretical possibilities for PSE in a variety of economic contexts differing by level of economic development and degree of government centralization. Key economic indicators are compared to assess the significance of SOEs in different economies by using a case-study approach on selected countries. The country comparison highlights the similarities and differences in workforce distribution between private and public sector among different economies and governance structures.

This study is based on the assumption that one way to account for PSE is through the role SOEs play in different economic models. In China and India, SOEs account for significant part of GDP and also have strategic function in industrial and national development. The German and the United States economies, on the other hand, operate with minimal state ownership, relying on private-sector-driven innovation and decentralized governance. Post-socialist economies and smaller developing countries present hybrid models that balance state ownership with increasing private sector participation. Thus, in different economic configurations on national level we can examine the trade-offs, challenges, and possibilities associated with public sector entrepreneurship.

The main research question that is examined is how public sector entrepreneurship, mainly through SOEs, contributes to economic development and innovation in the examined countries. That question is mostly relevant to economies that are not heavily dependent on small-and-medium-sized enterprises (SMEs). The other research questions that are central starting point for the empirical research for this article are: Is the contribution of SOEs to GDP higher in countries with state-driven economies (such as China and India) than in liberal economies (such as Germany and the U.S.)? Is higher public sector employment observed together with a larger role of SOEs (especially in strategic sectors such as energy, defense, and transportation)?

This article contributes to the theoretical understanding of public entrepreneurship by linking country governance model, economic variables and workforce distribution to public entrepreneurship. It offers a cross-country case study comparison that highlights the role of governance structures for the significance of public sector and the level of innovation. By examining workforce distribution, R&D level, SOEs contributions to GDP, and governance models, the study explains how different economies balance public and private sector roles to drive economic growth. The results propose grouping countries by different variables and provide

valuable insights for policymakers, economists, and business leaders in designing public sector strategies that enhance both economic performance and social welfare.

Literature review

Theoretical Foundations of Public Sector Entrepreneurship

Public sector entrepreneurship (PSE) or public entrepreneurship is an evolving academic area examining the occurrence of entrepreneurial behavior in government organizations, public agencies, and state-owned enterprises (SOEs). Traditional economic theories characterize the public sector as inherently bureaucratic and risk-averse. Conventional economic models describe the public sector as having an inherent bureaucracy and risk aversion. Recent studies underscore that innovation and entrepreneurship also exist in public institutions when governance structures allow for flexibility, decentralization, and strategic leadership (Osborne & Gaebler, 1992; Mazzucato, 2018, 2015). The theoretical underpinnings of PSE are grounded in the role of SOEs in promoting innovation, the effects of fragmented governance structures in promoting the scope of entrepreneurial activity in the public sector.

Unlike private entrepreneurship, which tends to focus on profit maximization, public entrepreneurship focuses on the production of public value. Tremendous scholarly and practical interest in public entrepreneurship is rooted in the notion that public entrepreneurs are change agents within bureaucratic systems, innovating and stimulating efficiency in the face of regulatory and institutional limits (Kingdon, 1984; Klein et al., 2013). Public entrepreneurship theories revolve around the notion that public managers and government officials can conduct entrepreneurial activities by recognizing opportunities for service enhancements, policy innovations, and strategic alliances (Lewis, 1980; Wei-Skillern et al., 2007).

A second theoretical perspective that is valuable for PSE is that of the entrepreneurial state, which holds that governments are not just regulators of market activity, but also active agents in innovation and industrial restructuring (Mazzucato, 2018). The entrepreneurial state uses Schumpeterian concept of entrepreneurship to make industrial policy like government intervention in process of the technological innovation and industrial evolution (Ebner, 2009). This view emphasizes that throughout history, public institutions (including SOEs) have been crucial drivers of technological innovation, infrastructure building, and state-driven economic planning (Chang, 2007). SOEs are tightly connected to government agenda and are subject to political interventions in their governance and dividend distribution (Kanazireva, 2024). Yet many PSE limiting factors are correlated to rigid bureaucratic structures, political interference, and short-term electoral cycles that prevent strategic long-term investments (Bryson et al., 2014).

Another view that complements many of the conceptions found in the book is Elinor Ostrom's (2005) work on polycentric governance and public entrepreneurship. She proves that decentralization and local governance structures enhance public sector entrepreneurship. Ostrom rejects the conventional understanding of centralized control where proper governance comes from the top down, instead arguing that power accrued in more localized governance, as in local communities, municipalities, and regional authorities, will be able to appropriately manage public resources and services (Ostrom, 1990). This argument highlights the importance of public participation in decision-making as a way to drive innovation, enhance service delivery, and increase accountability (Ostrom, 2005). Publication Date: 2016-06-01, These findings have important implications for public sector entrepreneurship, because these indicate a positive relationship between institutional decentralization and public sector entrepreneurship where the

former shifts power and authority into the hands of public officials and communities, enabling them to decide on the allocation of resources and the implementation of policies. When investigating motivations for public entrepreneurship, some authors focused on the maximization of private benefits (Zerbinati & Souitaris, 2005; Klein et al., 2013). Others focus on the goal of enhancing social value through accomplishing organizational mission (Hayter et al., 2018). Most authors agree that the exploitation of opportunities is at the core of the public sector entrepreneur's actions. Growing amount of theoretical perspectives on PSE or public entrepreneurship can be found in economics, political science, public administration, and management theory. Each field offers a unique perspective through which to understand the mechanisms that drive entrepreneurship within the public sector.

Economic Perspectives of PSE

Economic theories of PSE focus on its role in market corrections, industrial policy, and public investment in innovation. Classical economic theorists often argue that state intervention distorts market efficiency (Friedman, 1962), yet more recent studies highlight the necessity of government involvement in strategic industries, particularly in sectors with natural monopolies such as energy, transportation, and defense (Holcombe, 2002).

Development economists emphasize that SOEs have played a central role in the modernization of emerging economies. In China and India, state-owned enterprises remain dominant economic actors, contributing significantly to GDP and industrial output (Chang, 2007). In contrast, most post-socialist economies, such as Bulgaria and Romania, during the transition from centrally planned to market-oriented economy, saw a decline in the number of SOEs (Kanazireva, 2024). Public investment initiatives also including SOEs have proven to be of crucial importance in pioneering high risk technological innovation, whose long term uncertainty implications drive private capital away from their funding agenda (Mazzucato, 2015, 2018). This is specifically valid for public sector entrepreneurship, as government institutions can serve as both investors and innovators in economic development.

Political Science and Public Administration on PSE

Political scientists examine PSE through governance structures, policy entrepreneurship, and state capacity. A central theme in this literature is the role of policy entrepreneurs, who introduce new ideas, advocate for reforms, and navigate political constraints to implement transformative policies (Kingdon, 1984). Policy entrepreneurship is particularly relevant in the field of sustainable development, where government officials play a critical role in shaping economic reforms and regulatory frameworks (such as the Green Deal).

Elinor Ostrom's Nobel Prize-winning research on the governance of the commons has radically altered how scholars think about the management of shared resources or common-pool-resources. Through field studies she proved wrong the conventional theories stating that common-pool resources (CPRs) are best managed under two regimes: either central governments, or privatization. In her fundamental work – *Governing the Commons: The Evolution of Institutions for Collective Action* (1990), Ostrom demonstrates that local communities can self-organize to manage shared resources successfully. Her empirical work included field studies in diverse countries around the world — from irrigation systems in Nepal to fisheries in Maine — demonstrating that decentralized, participatory governance structures tend to yield better long-term resource sustainability than central state control or market-driven privatization. Ostrom's theory is built around the idea that individuals and communities are able to develop institutions governing

their collective action — designed and enforced by themselves through a combination of rules, monitoring mechanisms and ways of resolving conflicts. Broadly, she identified eight “design principles” that allow for positive governance of common-pool resources, including clearly articulated boundaries, congruence between use and local conditions, collective choice arrangements, and monitoring/accountability mechanisms and sanctions against rule violators (Ostrom, 1990). Ostrom offered empirical evidence which contradicts the standard game theories (i.e., prisoner's dilemma) that predict the over-exploitation of common resources by rational individuals to a state called “tragedy of the commons” (Hardin, 1968), but rather cooperative governance structures are effective in the prevention of the degradation of resources and also long-run sustainability. Her insight has salient implications for public sector entrepreneurship (PSE) — not least with respect to decentralized governance.

According to Ostrom (2005), public entrepreneurship is at its best when local stakeholders have the ability to contribute, not just top-down central command and control. Expanding on her principles of self-organization, PSE can be conceptualized as a process where governments, SOEs (state-owned enterprises) and local institutions take the initiative and are entrepreneurial in a variegated bottom-up manner to achieve public value. Such a paradigm promotes innovation in policymaking, fosters the co-production of public goods, and sustains community-based economic initiatives. Ostrom's work aligns closely with contemporary views on PSE, which emphasize flexible, networked governance models that leverage community knowledge, enhance accountability, and encourage innovation beyond traditional top-down public administration models (Mazzucato, 2015).

This article is incorporating Ostrom's theories into the study of public sector entrepreneurship in order to better understand how decentralized governance structures influence effective state-led innovation, ensuring that public resources are managed efficiently and equitably. Ostrom's work is a fundamental factor in discussions on how institutions at all levels can foster economic and environmental sustainability through participatory and entrepreneurial governance.

Governance models influence the effectiveness of public sector entrepreneurship. In centralized economies such as China, SOEs operate under strong state direction and play a central role in national economic planning (Lin et al., 2021). In contrast, decentralized states, such as Germany and Scandinavian countries, allow for greater autonomy at the municipal and regional levels, fostering localized public entrepreneurship (Ostrom, 2005). The varying degrees of bureaucratic autonomy impact the ability of public institutions to innovate, with research suggesting that high-capacity states exhibit greater innovation in public administration than politically constrained ones (Evans & Rauch, 1999).

Management and Organizational Theory on PSE

Public institutions from a management perspective, are pursuing entrepreneurial behaviors in order to improve service delivery and efficiency. The New Public Management (NPM) lens posits that public-sector entities should incorporate private-market managerial practices, such as performance-oriented rewards and efficiency metrics, to facilitate creativity (Osborne & Gaebler, 1992). Yet critics to that view have warned that importing practices from the private sector into public administration can lead to adverse side effects, among them short-termism and weakening of public accountability (Dunleavy & Hood, 1994).

In the public sector, SOEs have a special challenge in balancing their financial sustainability with their public service mandates. SOEs often face multiple and sometimes conflicting objectives (Zerbinati & Souitaris, 2005), in contrast to private firms, which usually have one aim, making

long-horizon investments in infrastructure and policy-driven decisions. The relationship between organizational culture and public entrepreneurship has also been studied; some researchers argue that the internal should also be innovation-friendly and only as such can the solution to the problem lead to any sustainable innovation (Padt, 2012).

SOEs and Public Sector Innovation

State-owned enterprises can play a critical role in driving public sector innovation. Traditional analyses of SOEs suggest that they are bureaucratic and inefficient, yet more recent work indicates that SOEs can be very innovative if provided with autonomy and investment incentives (Bruton et al., 2015). SOEs have led the way on renewable energy in China, as well as telecommunications and infrastructure, while publicly owned enterprises in Germany are critical to public utilities and transportation (OECD, 2017).

Ostrom's (2005) work implies that decentralizing SOE management and increasing stakeholder participation in governance helps to reduce authority levels and unleash entrepreneurship. This is especially pertinent to countries like Bulgaria, Romania, Greece and Turkey, where legacy bureaucracies have impeded innovation in SOEs for decades. Strategic policy frameworks that align the objectives of SOEs with national economic priorities will help maximize their potential as a resource for sustainable development and technological advancement (Mazzucato, 2018).

Methodology

The methodology for this study applies case-study approach. It integrates quantitative analysis of economic indicators with qualitative analysis of specific countries' characteristics in order to assess the potential of public sector entrepreneurship (PSE) and state-owned enterprises (SOEs) in the examined countries. The magnitude of human potential between public and private sector is assessed through workforce distribution data. The role of SMEs, large enterprises, and public sector for the economy and employment creation is assessed for each country on the basis of workforce distribution analysis. Additionally, the study evaluates key economic indicators such as the contribution of SOEs to GDP, R&D spending as percentage of GDP to evaluate innovation potential.

Building upon the findings of Kanazireva (2024), which focused on qualitative case studies of Bulgarian SOEs, this research extends the scope by incorporating a cross-country comparative analysis with quantitative data from selected group of eight diverse economies – each as typical representative of their kind by political system, economic model, and cultural background. The eight countries studied can be divided in two groups by the size of their economies: (1) four of the top five biggest economies in the world (Japan not included) and (2) four countries in the Balkan region or Eastern Europe: Bulgaria, Romania, Greece and Turkey. The results compare the findings for these countries based on found similarities and differences.

The research is guided by three main research questions (RQ), formulated on the basis of the examined literature and empirical observations across different economic models.

RQ1: Is the contribution of SOEs to GDP significantly higher in state-driven economies, such as China and India, than in liberal market economies like Germany and the United States, where private-sector entrepreneurship dominates? This research question is grounded in the understanding that governments in state-led economies play an active role in industrial policy, using SOEs as instruments of economic growth and national development (Mazzucato, 2018).

RQ2: Is higher public sector employment related to stronger role of SOEs? This premise follows from the observation that state-controlled sectors require long-term investment, regulatory stability, and national security considerations, making public enterprises a preferred vehicle for delivering services in strategic industries, such as in energy, transportation, and defense (Ostrom, 2005; Chang, 2007).

RQ3: Is public sector entrepreneurship in hybrid economies (such as Bulgaria, Romania, Greece, and Turkey where we have a mix of state intervention and market competition), leading to moderate SOE contributions to GDP and employment? These countries have liberalized their economies in recent decades but still have significant state involvement in major industries, leading to a unique mix of public-private entrepreneurial activity.

These three research questions are explored with the aid of data analysis showing the distribution of the workforce across different entities by size, economic contributions of SOEs, and comparisons of governance models in eight different economies.

Research Design

The study follows case-study approach, combining macroeconomic analysis with qualitative research to develop an in-depth perspective on the potential of each economic model for PSE.

The quantitative component involves a cross-country analysis of workforce structures and SOE contributions to GDP on eight typical economic models with varied SOE participation. The study results will classify findings into three categories based on the values of each indicator that is examined – low, medium, high. The key variables that will be categorized: (1) total workforce distribution, distinguishing employment within the public sector, SOEs, SMEs, and large enterprises; (2) the economic contribution of SOEs, measured through SOE-generated Gross Value Added (GVA) and percentage contribution to GDP; (3) national innovation potential, evaluated through R&D expenditure as a percentage of GDP; and (4) economic growth in terms of GDP growth. This approach enables the study to identify patterns for potential of public sector entrepreneurship across different governance and economic structures.

Data for the quantitative analysis is obtained from databases of OECD, World Bank, Eurostat, and national statistical agencies. The comparative framework further evaluates governance structures by distinguishing between centralized and decentralized models and their impact on PSE outcomes.

The qualitative component builds conclusions from country characteristics such as political system and regional role. The qualitative insights provide contextual depth to the cross-country analysis and highlight country-specific nuances in SOE governance, efficiency, and innovation.

Limitations and Scope

While the study provides a broad comparative analysis of public sector entrepreneurship, certain limitations must be acknowledged. The comparability of workforce distribution and SOE economic contribution data may be affected by inconsistencies in national statistics and variations in data collection methodologies across countries. Furthermore, differences in governance models, regulatory frameworks, and historical economic transitions introduce complexity in directly comparing PSE outcomes. Only eight countries are studied. For four of the biggest world economies (US, China, India and Germany) results are relevant in both in regional and international context. On the other hand, the results for Bulgaria, Romania, Greece and Turkey are relevant for the specific region and economic context of these countries.

Despite these limitations, the study contributes to the literature by expanding empirical knowledge on the economic and innovation roles of SOEs and public sector entrepreneurship. The findings provide policymakers with evidence-based insights on governance structures that foster sustainable, efficient, and entrepreneurial public institutions, balancing innovation and economic growth.

Results and discussion

The studied countries differ in their underlying political systems, economic structure and level of development, as well as in cultural background and regional role. Case-study methodology is applied to compare contextual differences. The results of the comparative analysis highlight significant variations in workforce distribution, SOE contributions to GDP, and R&D expenditures across different economic models. By analyzing these variables together as presented in the country comparison in Table 1 below, we gain a clearer understanding of the role of public sector and SOEs in shaping economic growth, innovation potential, and employment structures.

Table 1. Country comparison: economic indicators

Country	Total number of employed (in millions)*	Employed % in the public sector*	Employed % in SMEs*	Employed % in large companies, incl. SOEs*	GDP growth (2023) %	R&D expenditure % of GDP*	SOEs % contribution to GDP*
Bulgaria	3.1	19.4%	46.8%	33.8%	3.4%	0.77%	15%
Romania	8.5	15.3%	49.4%	35.3%	4.2%	0.47%	8%
Greece	4.1	21.5%	53.2%	25.3%	2.5%	1.46%	11%
Turkey	32.2	12.7%	67.5%	19.8%	5.1%	1.40%	10%0%
Germany	45	12.9%	64.7%	22.4%	1.8%	3.14%	4%
China	775	9.2%	30.1%	60.7%	5.5%	2.43%	23%-28%
India**	500	4%	24%	72%	6.8%	0.65%	20%
United States	160	13.8%	37.5%	48.7%	2.1%	3.46%	> 1%

Source: Combined country data from *Statista, Worldbank data, Eurostat and National Statistics Offices.*

**numbers from 2021-2022*

***India data not including unreported employed (allegedly around 50 mil. people)*

Public vs. Private Sector Employment: Insights from Workforce Distribution

Although China has only 9.2% of its workforce employed in its public sector, 70% Chinese large companies are state-owned enterprises. From that number combined with 60.7% of Chinese workforce employed by large companies we can argue that around 50% of Chinese work for public sector and SOEs. The case of India might look similar with only 4% of its workforce in the public sector and 72% in large companies. However, less than half of India's large companies are state-controlled and that includes financial institutions. The case of the US shows pure market-driven economy with very few SOEs (considering only non-financial sectors). Most US companies are privately owned with few exceptions (such as Amtrak, USPS). The public sector employment in the US is at similar rate as Germany and Turkey. Bulgaria, Romania, and Greece exhibit higher public sector employment (15–19%), reflecting the legacy of post-socialist economic structures where the state retained a significant role in service delivery and economic planning. Greece and Bulgaria have the highest employment share in the public sector. That combined with their SOEs contribution to GDP – 11% and 15% respectively, can lead to the conclusion that those two countries have stable

portfolio of SOEs, confirming their placement in the hybrid group of countries. Germany, Turkey and the United States maintain medium public sector employment (12–14%), relying on market-driven mechanisms and private sector entrepreneurship for economic growth.

The data shows that in terms of SMEs – Turkey and Germany can be referred as SME-driven economies, while China and India economies are driven by large companies. SMEs employment in the US is 37.5%, more than 10% less than in average European countries. Thus, US can be considered a corporate-driven economy. China and India economies are corporate-driven as well, but China is purely state-led economy. Bulgaria, Romania and Greece are balancing corporate and public sector employment with SMEs.

In terms of GDP growth,

From the data analysis it can be concluded that the US is market-driven economy while China is state-driven. Between these two extremes lay the other cases with different degrees of state-led to market-driven economies in that order: India, Greece, Bulgaria, Romania, Turkey and Germany.

A key research question in this study is whether SOE contributions to GDP are significantly higher in state-led economies compared to liberal market economies. The data confirm this pattern. China and India stand out with SOEs contributing between 20–28% of GDP, aligning with their state-led economic models where SOEs are essential instruments for industrial policy, infrastructure development, and national strategic objectives. Bulgaria, Romania, Greece, and Turkey present moderate SOE contributions (8–15%), consistent with their transitional economies where SOEs remain crucial in strategic industries (e.g., energy, transportation, and defense). Germany and the United States demonstrate minimal SOE contributions (4% and <1%, respectively), reinforcing their market-based approach, where public entrepreneurship plays a limited role outside of defense, utilities, and infrastructure.

These results further validate the argument that SOEs play a crucial role in stabilizing economies where private capital is insufficient to drive long-term industrial investments. In contrast, liberal market economies rely on regulatory incentives, tax policy, and private sector entrepreneurship to fuel innovation and economic competitiveness.

A fundamental assumption of public sector entrepreneurship is that state-owned enterprises can act as catalysts for national innovation strategies. The analysis confirms that higher R&D spending is strongly correlated with national innovation capacity, however it cannot be related to SOEs and the public sector in the case of market-driven economies (the US, Germany). Germany and the United States lead in R&D expenditure as a percentage of GDP (3.14% and 3.46%, respectively), reinforcing the role of private sector-led innovation ecosystems. China (2.43%) is an exception among state-led economies, demonstrating that strategic SOEs can be leveraged for technological progress and industrial modernization. Turkey (1.40%), Bulgaria (0.77%), Romania (0.47%), and Greece (1.46%) fall well below global innovation leaders. India is spending only 0.65% of its GDP on R&D while leading in economic growth (6.8%). India's strategy is for industrial development rather than technological innovation (as China). Each of these countries is leveraging its strengths to achieve high economic growth. Turkey (5.1% GDP growth) is also in the group of high-growth developing countries (together with China and India). Countries with high R&D investments exhibit higher innovation-led economic growth, regardless of whether SOEs or private enterprises drive that investment. However, higher spending on R&D is not necessarily related to higher economic growth.

Key Findings and Policy Implications

Elinor Ostrom (2005) argued that decentralized governance unlocks the potential of public sector entrepreneurship thus empowering local decision-makers to respond to market needs in flexible manner. The research findings are in line with this perspective in the country data context, especially when it comes to centralized vs. decentralized governance models. In fact, both China and India have fundamentally centralized governance models in which SOEs play the role of a policy instrument, not market entrepreneurial entities. Germany and the U.S., in contrast, leverage highly decentralized governance, allowing regional and municipal governments to act as entrepreneurial agents. Moreover German economy relies highly on SME employment. This decentralization fosters adaptive policymaking and localized innovation, supporting Ostrom's (2005) argument that governance frameworks must be responsive to local economic conditions rather than dictated by centralized control. However, more data and analysis is needed to support those conclusions.

The results of the workforce and SOE contribution analysis support the main research question. SOEs play a dominant role in state-led economies (China, India), moderate roles in hybrid economies (Bulgaria, Greece, Turkey), and marginal roles in liberal economies (Germany, U.S.). Higher SOE contributions to GDP are correlated with economies where public entrepreneurship is state-driven rather than market-driven. Innovation potential is strongly linked to national R&D spending, with SOEs acting as key players in economies that invest strategically in research and development. India is an exemption where the innovation is not the focus but industrialization supported by SOEs. Findings for the second research question: higher R&D spending is not necessarily related to economic growth in all cases. Findings for the third research question: For hybrid economies, SOEs contribution to GDP and employment is moderate.

The results of this study demonstrate that public sector entrepreneurship is highly context-dependent, shaped by national governance models, economic policies, and workforce structures. While SOEs are the main drivers of economic activity in state-led economies, their success depends on governance quality and strategic investment in innovation. The findings reinforce the argument that one-size-fits-all approaches to public sector entrepreneurship are inadequate. The implications for policymakers suggest that public sector entrepreneurship strategies shall be designed to correspond with national economic structures and governance capacities.

Conclusion

The purpose of this study is to explore the role of public sector and state-owned enterprises (SOEs) among different economic models. The selected economies are compared based on the distribution of workforce, economic growth, and innovation levels. By analyzing cross-country variations, this research shows how governance structures are key determinants of the entrepreneurial potential of the public sector. The comparative study illustrates that examined economies have unique approaches to which is the right balance between public and private sector involvement, where state-driven economies deploy SOEs as the key instruments to steer industrialization while market-oriented economies prioritize innovation driven by the private sector and decentralized governance.

The results indicate that SOEs continue to serve as a fundamental aspect of employment generation, economic stability, and strategic industrial policy across several economies. Public sector entrepreneurship remains deeply rooted in the national economic strategies of countries such as China and India where SOEs account for a substantial share of the GDP and a significant portion of the workforce. By contrast, Germany and the US are a more decentralized environment, within which public entrepreneurship emerges at the level of the municipality and the region, and SOE involvement in determining economic outcomes is negligible. The hybrid economies of Bulgaria, Romania, Greece, and Turkey are marked by a more nuanced snapshot, in which state ownership remains relevant in strategic sectors but is becoming more vulnerable to competitive pressures and governance reforms.

The study argues that the performance of the public sector depends on governance, policy design and financial sustainability. Countries prioritizing R&D investment levels, transparency in regulation, and righteous SOE integration in national development strategies are in a better position to harness public entrepreneurship for innovation and enhanced economic resilience. On the other hand, economies that face political interventions and poor SOE management, as well as policy formulation and implementation problems, are constrained in their ability to take advantage of the potential of public sector innovation.

Furthermore, to a theoretical point made by Ostrom (2005) around decentralization as necessary to unlock entrepreneurial capacity of public institutions, our findings provide the methodological evidence to support such a conclusion. Real world examples, such as innovations among the public sector in Germany or the United States, countries where local governance enjoys some degree of autonomy stand in contrast to those centralized economies dragged by bureaucratic inertia and an inability for entrepreneurial decisions. The findings of the study also suggest that efficiency is possible through greater autonomy of various institutions, especially among SOEs, to develop a vibrant public sector capable of servicing economic and social development.

From a policy perspective, the study adds to context-specific approaches in public sector entrepreneurship. State-driven models may be effective in aligning SOEs with national industrial policies, but ensuring long-term economic viability requires governance mechanisms that encourage efficient, transparent, and competitive behavior. Policy frameworks that stimulate innovation both in the public as well as private sector must be designed for hybrid economies that balance SOE influence with market-driven competition. The challenge in liberal market economies is to create conditions of national economic and social utility for the private sector's entrepreneurial efforts – including the efficient regulation of that sector.

Future studies should extend the dataset to include larger number of economies, especially in Latin America, Africa, and East Asia, to determine whether similar patterns hold in different regional contexts. In addition, testing for statistical relationships would give a deeper insight into the causality of these dynamics alongside sector-specific studies, that theoretically could, close to the cluster formation of SOEs and their level of state involvement.

This study provides comparative insights into the governance framework, workforce structure and innovativeness among public vs private enterprises that dovetails with the larger discussion of public sector entrepreneurship.

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