



Public sector entrepreneurship: an integrative review

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Abstract Public sector entrepreneurship (PSE) has emerged as a vital field, exploring how public servants leverage opportunities to create public value amidst unprecedented and unpredictable challenges in governance. This article navigates the expansive landscape of PSE literature, consolidating diverse theoretical perspectives and fragmented knowledge into a cohesive framework. Through an integrative and systematic review of 100 articles, we identify PSE as a multi-level phenomenon characterized by a context-dependent combination of proactivity, innovation, and risk-taking, that serves to drive change and renewal, promote resilient organizations, and resourcefully exploit opportunities for public value creation, with the ultimate aim of achieving positive societal and environmental outcomes. By proposing an analytical framework that embraces the fluid nature of PSE and integrating diverse perspectives, this study enriches our understanding of the intersection between entrepreneurship and public administration. It advocates

for a nuanced, sector-specific approach to PSE, laying a solid foundation for further advancements in the field.

Plain English Summary (How) can public servants be entrepreneurs? Our study reveals how seizing opportunities for innovation and resilience in governance drives significant gains in public value and societal impact. In a world of rapid change and complex challenges, how can public servants make a difference? Public sector entrepreneurship (PSE) offers a solution by helping them seize opportunities to innovate and tackle governance issues. Our review consolidates diverse insights into a clear framework, highlighting renewal, resilience, and resourcefulness as key themes in PSE. This approach empowers public servants to drive positive change, strengthen institutions, and use resources effectively to create value for society. Our findings suggest that future research should focus on understanding how different contexts influence PSE, guiding better practices and policies for the public sector. This article implies two key points: for research, it highlights the importance of exploring how contextual factors shape PSE; for policy and practice, it suggests that these insights can inform the development of policies that promote proactive and innovative practices in public administration.

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1 Introduction

In a world increasingly characterized by uncertainty, unpredictable crises, and rapid change, the traditional mechanisms of governance are under intense pressure to adapt. Governments must now tackle an unprecedented blend of economic disruptions, political instability, social conflicts, and environmental threats that defy conventional management strategies (Torfing, 2019). Against this backdrop, public sector entrepreneurship (PSE) emerges as a transformative approach, enabling public servants, individually or collectively, to create public value by leveraging opportunities within these volatile environments (Bernier, 2022). Tracing its intellectual lineage to the pioneering insights of Nobel laureate Elinor Ostrom (1965), PSE has continued to attract scholarly interest due to its relevance in addressing contemporary challenges (Leyden & Link, 2015) and for its promise in increasing both the level and quality of public goods available to citizens (Ostrom, 2005).

Over recent decades, scholars have examined the role of the public sector in fostering private sector entrepreneurship and driving industry development (Leleux & Surlemont, 2003; Leyden, 2016). They explored how public entrepreneurs can play a crucial role in unlocking the full potential of the public sector and driving positive change in the delivery of public goods and services (Ostrom, 2005). They have also identified key factors influencing the success of PSE (Kearney et al., 2008), compared public sector entrepreneurs to independent and corporate entrepreneurs (Morris & Jones, 1999), and classified different types of public entrepreneurs (Zerbinati & Souitaris, 2005). Central to these investigations has been the application of insights from classical entrepreneurship theories to the public sector context (Hayter et al., 2018). These theories, stemming from Cantillon, Baudeau, and Schumpeter, shaped the image of the public entrepreneurs as dynamic actors who identify market and social opportunities (Boyett, 1996; Morris & Jones, 1999), mobilize resources innovatively

(Osborne & Gaebler, 1992), and create new non-market organizations in changing environments (Ostrom, 2005). This body of research has emphasized that PSE should be conceptualized by its innovative actions, transformation of the status quo, and inherent uncertainty (Hayter et al., 2018).

This conceptualization of PSE is in line with a long-standing ambition in the field of entrepreneurship studies to develop a universalistic theory of how entrepreneurs or entrepreneurial organizations identify, develop, and exploit opportunities, irrespective of context or sector. However, a recent editorial in one of the leading entrepreneurship journals signals a pivotal shift: scholars are increasingly recognizing the necessity for a more contextualized understanding of entrepreneurship (De Massis et al., 2018). This emerging perspective asserts that the influence between sector and entrepreneurship is bidirectional, with each shaping and reshaping the other (De Massis et al., 2018; Welter, 2011). Therefore, applying a sector-specific lens to PSE is crucial, not only to understand how entrepreneurship functions within the public sector, but also to grasp how the public sector actively shapes entrepreneurial activity. Additionally, this lens must recognize the fluidity of the “sector” concept, offering a nuanced understanding of the ways in which entrepreneurship and public sector dynamics shape each other.

In response to this evolving understanding, our study aims to develop an analytical framework for PSE that integrates diverse theoretical perspectives and empirical contexts. Our investigation is structured around three main research questions: (i) How can we conceptualize PSE? (ii) What are the crucial contextual conditions impacting the nature of PSE? and (iii) How can PSE activity be managed successfully in the public sector context? By engaging in an integrative and systematic review, we provide a nuanced understanding of the nature and characteristics of PSE and identify key areas for future research. Throughout our review, we identify PSE as *a multi-level phenomenon characterized by a context-dependent combination of proactivity, innovation, and risk-taking, that serves to drive change and renewal, promote resilient organizations, and resourcefully exploit opportunities for public value creation, with the ultimate aim of achieving positive societal and environmental outcomes.*

We find that the dimensions of renewal, resilience, and resourcefulness synthesize diverse perspectives on PSE in empirical research. We also develop an

analytical framework, based on the articles in our review, where PSE is influenced by shaping and success factors, that may carry more or less weight in different public sector contexts, and therefore influence the nature of entrepreneurship in the public sector in diverse ways, underpinning that PSE is a fluid concept. Ultimately, this review reveals key themes and research gaps in the PSE literature, providing a roadmap for future research. It enhances our understanding of the interplay between entrepreneurship and public administration, moving beyond universalistic conceptions of entrepreneurship to a framework that captures the unique dynamics of the public sector.

2 Materials and methods

To create a shared conceptual foundation for PSE across communities, we conducted an integrative review of the literature, bridging multiple streams of scholarship (Cronin & George, 2023). This was necessary because PSE intersects with two prominent research fields: entrepreneurship and public administration and management scholarships. To accomplish this, we employed a 5-step process to identify pertinent publications (see Fig. 1).

First, we searched the Web of Science database with the primary Boolean search string “public sector AND entrepreneur*.” However, as several scholars do not actively use the term “public sector,” we added four major additional search strings that reflect alternative terms for PSE, such as entrepreneurship in “public organizations” (e.g., Klein et al., 2013), in the “public domain” (e.g., Klein et al., 2010), adopted by “public management” (e.g., Llewellyn et al., 2007) or studied in “public administration” (e.g., Bernier & Hafsi, 2007). This first search yielded, after the exclusion of duplicates, non-English literature, and non-peer-reviewed publications, a total of 1150 articles.

Second, we filtered our initial sample to include only core studies on PSE. Following recent protocol to ensure high-quality data sources and to uphold a rigorous academic standard (see, e.g., Brielmaier & Friesl, 2023; Dean et al., 2019), we identified core studies on PSE by including research conducted in leading journals. To identify leading journals, we utilized the Academic Journal Guide (AJG) from 2021, and selected publication outlets with a rating of at least 3. AJG rates journals according to their

standardized impact factor, which has also been used as a quality indicator in prominent systematic reviews (see, e.g., Dean et al., 2019; Schmitt et al., 2018). While relying on journal lists and rankings has its drawbacks, specifically when it comes to the “narrowing effects they can produce in terms of subjects and approaches” (Mallett et al., 2019, p. 268), they also offer a valuable proxy for quality and suit the purpose to provide an integrative and systematic review on the extant PSE research (Brielmaier & Friesl, 2023). This step led to a refined sample of 300 articles.

Third, we screened all articles on titles and abstracts in order to exclude all publications that were either not concerned with the concepts of entrepreneurship or that studied entrepreneurship but not its manifestations in the public sector domain. We also excluded publications that engaged research areas out of the scope of this review, such as entrepreneurship policy, academic entrepreneurship, social entrepreneurship, and citizen entrepreneurship. We also excluded studies whose main focus is on policy entrepreneurship, recognizing how “the focus of the [PSE] research shifted from politicians to public sector managers” (Zerbinati & Souitaris, 2005, p. 45). These exclusions left us with 121 articles.

Fourth, in order to ensure the validity and relevance of our data, we implemented a thorough data cleaning process. To do this, we carefully read all remaining articles in our initial set to determine whether they truly covered topics related to PSE and whether the study of PSE played a primary role. This involved a comprehensive analysis of the articles to identify any potential inconsistencies or deviations from our research focus. As a result of this rigorous screening process, we excluded 21 articles from our initial set, leaving us with a core set of 96 publications on PSE.

Fifth, to enhance our data collection process and reduce the risk of excluding important articles, we employed two additional search strategies. First, we conducted independent literature searches to identify any potentially overlooked articles. Second, we reviewed our article collection in an interactive session with an external academic expert, who is a distinguished scholar and thought leader in entrepreneurship, with authorship of influential works widely recognized and utilized by peers, received multiple honors for their contributions, served on editorial boards of key academic journals, and

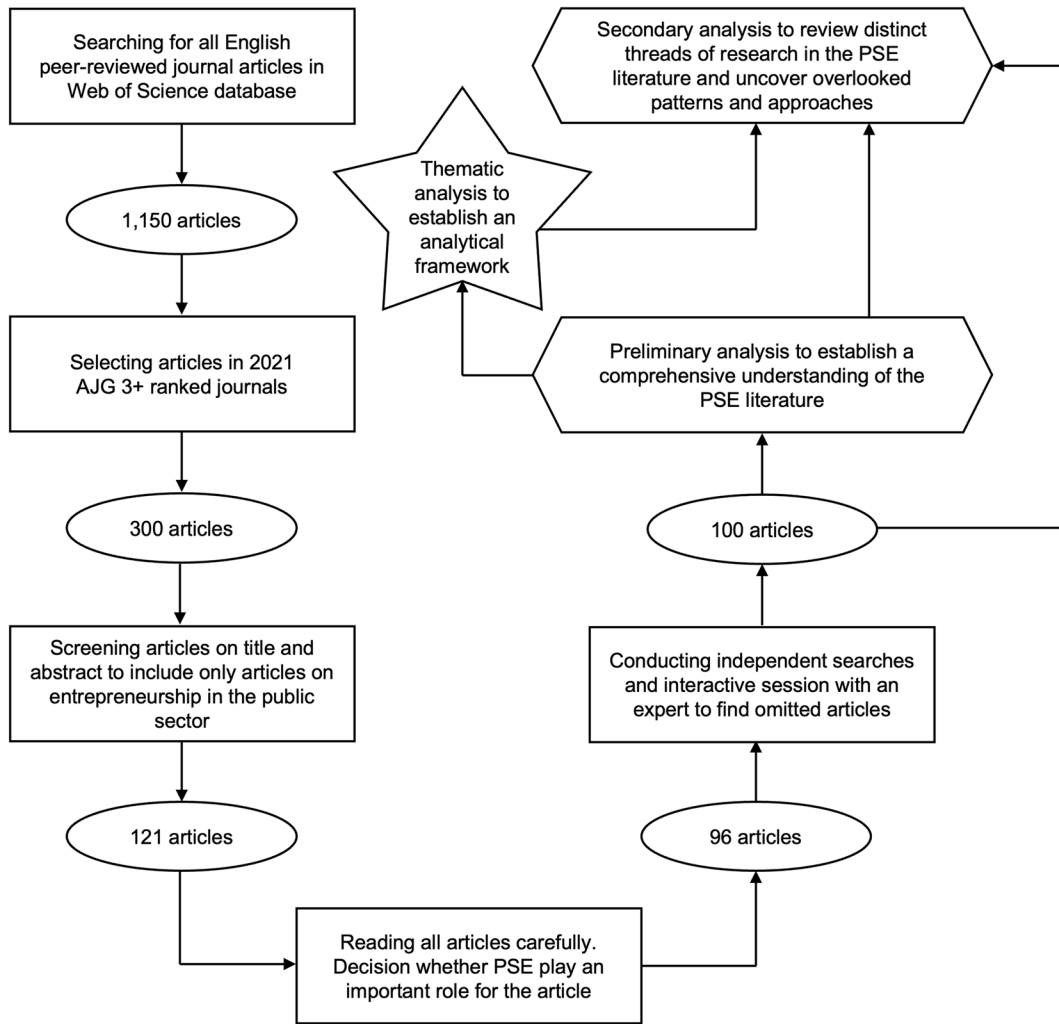


Fig. 1 Integrative review process

played a pivotal role in expanding the field of entrepreneurship to intersect with PSE. These strategies confirmed our initial approach and revealed that some overlooked items were either book chapters or articles outside our search scope. We also found articles that are relevant to the field, but were not meeting our stringent selection criteria, such as non-English articles (e.g., Gil López & San Román, 2021) or articles in AJG Level 2 journals (e.g., Kearney et al., 2008). These articles, while insightful and significant within their contexts, fall outside our rigorous inclusion criteria designed to ensure uniformity in our analysis. By setting these criteria, we aim to ensure consistency and reliability in our

findings. Nonetheless, we acknowledge the valuable contributions of these excluded works in our broader discussion, as they offer diverse perspectives and nuances that enrich our understanding of the field. As a result, we added four articles to our set, which were not initially found in our Web of Science search. Our final list of articles on PSE now totals 100 articles.

To analyze the review sample, we followed a three-step process to gain a comprehensive and nuanced understanding of the PSE phenomenon. Firstly, we conducted a preliminary analysis of the articles to identify common themes and conceptual frameworks related to PSE. Each article

was carefully examined for key findings, theoretical perspectives, and methodological approaches. This stage primarily focused on comprehending the diverse definitions of PSE across various communities and disciplines.

Drawing on our initial literature review, we conducted a thematic analysis, and we identified distinct entrepreneurial perspectives (renewal, resilience, and resourcefulness) that could be adapted to the public sector, reshaping our understanding of the PSE phenomenon. This led us to develop a conceptual framework that integrates entrepreneurship insights with an understanding of the public sector intricacies. Importantly, this framework is also rooted in empirical findings from our preliminary analysis, ensuring its practical relevance and applicability to PSE.

In the final step, we applied the developed framework to conduct a secondary analysis of the review sample, resulting in a more structured and insightful examination of the articles. This process revealed previously unnoticed patterns and themes, leading to a deeper understanding of the existing PSE literature. Additionally, we contextualized the findings of each study within our formulated framework, enabling us to draw more robust conclusions about the nature and characteristics of PSE and identify key areas for future research.

3 Preliminary analysis: redefining public sector entrepreneurship

The first objective of this review was to comprehensively examine the multifaceted perspectives on PSE and to refine its definition through a sector-specific approach, as advocated by De Massis et al. (2018). Grounded in foundational insights from seminal works (see, e.g., Boyett, 1996; Hayter et al., 2018; Leyden & Link, 2015), we embark upon a well-established tradition marked by a multitude of interpretations of PSE as a phenomenon (see Table 1), as well as alternative characterizations of the public sector entrepreneur across various academic disciplines (see Table 2).

A first distinction drawn from these insights is whether PSE is conceptualized as a direct action (i.e., entrepreneurship happening *in* the public sector) or as an indirect action (i.e., entrepreneurship happening *through* the public sector) (Hayter et al., 2018). While the latter definition is less prevalent in the literature, our review sample does include examples of this approach (see, e.g., del Moral-Espín & Fernández-García, 2018; Farmer, 2011; Scott & Vonortas, 2021). A second distinction in PSE definitions instead stems from academic distance across disciplines, as exemplified in Table 2. In our review sample, while researchers widely acknowledge PSE as crucial for public sector organizations across various domains,

Table 1 Alternative definitions of PSE

Author(s)	Definition of PSE
Osborne and Gaebler (1992)	The on-going innovation to achieve increased efficiency and effectiveness
Boyett (1996)	The emergence of entrepreneurial leaders within the public sector, that are particularly susceptible to the manipulation of their stakeholders, with a desire for a high level of social self-satisfaction, who have the ability to spot market opportunities, and who are able through follower manipulation to act on them
Morris and Jones (1999)	The process of creating value for citizens by bringing together unique combinations of public and/or private resources to exploit social opportunities
Ostrom (2005)	Modifying market environments to encourage desired behaviors from private sector-entrepreneurs
Kearney et al. (2008)	The process that exists within the public sector organization that results in innovative activities such as the development of new and existing services, technologies, administrative techniques, new improved strategies, risk-taking, and proactivity
Klein et al. (2010)	Entrepreneurial public organizations seek to unleash creative energy in pursuit of the public interest
Hayter et al. (2018)	Innovative actions that change the existing social and economic environment, characterized by uncertainty
Demircioglu et al. (2020)	Seeking an opportunity and extra-role behavior to serve society and government

discrepancies in its conceptualization have persisted.

Table 2 Understanding of the public sector entrepreneur across academic disciplines

Author(s)	Understanding of the public sector entrepreneur
Economics	
Wagner (1966)	A provider of collective benefits for political advantages
Casson (1982)	A specialist in decision-making for resource coordination
Hughes (1991)	A bureaucrat who makes discretionary decisions
Holcombe (2002)	Sees and acts on opportunities for political profit or gain
Shockley et al. (2006)	Remains alert to and acts on political opportunities
Schnellenbach (2007)	Promotes new political paradigms
Link and Link (2009)	Takes innovative actions in the face of risk and uncertainty
Hayter et al. (2018)	Identifies opportunities and takes action to change the status quo social and economic environment
Management and entrepreneurship	
Boyett (1996)	A leader who identifies and leverages market opportunities within the public sector, motivated by social fulfillment and stakeholder influence
Morris and Jones (1999)	Creates value for citizens by combining resources to exploit social opportunities
Sadler (2000)	Identifies and takes advantage of opportunities by being innovative in uncertain environments
Zerbinati and Souitaris (2005)	Finds and exploits rewarding opportunities
Klein et al. (2010, 2013)	Experiments with different resource combinations to achieve social goals
Zampetakis and Moustakis (2007)	A civil servant who uses resources innovatively to create social value
Padt and Luloff (2011)	Competitive, enterprising, customer-focused, anticipatory, market-oriented, and catalytic
Hisrich and Al-Dabbagh (2012)	Initiates change by adapting, innovating, and taking risks for societal benefit
Public administration and political science	
Ostrom (1965, 2005)	An innovator who creates new non-market organizations to produce public benefits in a changing environment
Jones (1978)	A rational allocator of resources to maximize personal returns
Kingdon (1984)	An influencer who attempts to control public policy
Ramamurti (1986)	Engages in activities to establish, sustain, or expand public-sector organizations
Oakerson and Parks (1988)	An individual with the ability and freedom to pursue innovative initiatives
Kirchheimer (1989)	An initiator of new organizations, services, and strategies, willing to take risks
Bellone and Goerl (1992)	A seeker of new revenue sources for economic development
Osborne and Gaebler (1992)	Someone who uses resources in innovative ways to maximize productivity and effectiveness
Roberts (1992)	An individual who generates and realizes innovative ideas
Schneider and Teske (1992)	A political actor seeking gains in the political arena
Moon (1999)	Focuses on enhancing customer satisfaction, reducing bureaucracy, or engaging in risk-taking
Bernier and Hafsi (2007)	Enhances the public sector's ability to deliver valuable services

Based on: Hayter et al. (2018)

Mirroring the approach of Hayter et al. (2018) in discussing PSE definitions across academic disciplines, our review identified three predominant definitional clusters: an entrepreneurship-centric cluster, a strategic management-centric cluster, and a collaborative governance-centric cluster.

The first cluster is rooted in entrepreneurship scholarship (Hayter et al., 2018; Leyden & Link, 2015; Ostrom, 2005). This perspective defines PSE as the process of creating and managing new and innovative ventures, such as new public agencies or novel activities within existing public organizations, aiming to address

public problems, meet social needs, and generate social value (Morris & Jones, 1999; Perlmutter & Cnaan, 1995). Innovation is key (Demircioglu and Chowdhury, 2021), as is the ability to overcome the unique barriers and institutional challenges of PSE compared to private entrepreneurship (Leyden, 2016). Essential entrepreneurship skills include opportunity recognition, resource mobilization, and risk-taking (Morris & Jones, 1999; Zampetakis & Moustakis, 2007). Successful PSE also requires granting managers' autonomy to exercise leadership (Borins, 2000; Warner & Hebdon, 2001) and promoting organizational restructuring efforts (du Gay, 2004). The outcomes of PSE efforts are a decentralized, competitive, and customer-driven public sector (Posner & Rothstein, 1994), economic development, and increased entrepreneurship in the private sector (Lamberty & Nevers, 2022; Leyden, 2016; Mazzucato & Robinson, 2018).

The second cluster incorporates perspectives from strategic management to define PSE as a strategic renewal process within the public sector. This process aims to adapt to environmental changes and seize emerging opportunities. Building on the core principles of strategic renewal (see Schmitt et al., 2018), scholars in this cluster explore the interplay between strategy and entrepreneurship in the public sector (Höglund et al., 2018; Luke et al., 2011). They emphasize the importance of environmental scanning for public organizations (Kearney & Morris, 2015), the development of strategic visions and conditions for innovation (Kearney & Meynhardt, 2016), and the cultivation and utilization of public sector innovation capabilities (Gullmark, 2021; Gullmark & Clausen, 2023; Klein et al., 2013).

The third cluster draws from collaborative governance. Scholars in our review sample express concerns about applying entrepreneurial principles to the public sector (Bellone & Goerl, 1992), arguing that public entrepreneurs may threaten democracy (Terry, 1998), and highlighting instances where PSE may not be socially desirable (Gicheva & Link, 2022; Morales et al., 2014). This critique has led to the emergence of a new perspective on PSE from the co-creation and collaborative governance research streams which focuses on democratic accountability and network governance. This perspective defines PSE as promoting collaboration, innovation, and learning in the public sector to address complex challenges and create public value. Research in this cluster highlights the

importance of PSE in fostering public sector innovation and improving performance through effective collaboration (Page, 2003; Swann, 2017). Scholars emphasize the crucial role of public entrepreneurs in developing networks that facilitate innovation diffusion across organizations (Hartley et al., 2013) and identify the traits of entrepreneurial public managers committed to democratic principles (Hartley et al., 2015; Vivona, 2023).

Overall, each perspective offers unique insights and approaches to studying PSE, contributing to a comprehensive understanding of this emerging field. Despite differences, we identify commonalities that serve as the foundation for defining PSE. Scholars across clusters view PSE as a response to evolving societal needs and complex challenges in the public sector. They recognize the importance of proactivity, innovation, and risk-taking, highlighting the creation of public value and driving change. Moreover, PSE is seen as a means to enhance organizational performance and achieve positive societal and environmental outcomes. Therefore, we identify PSE as follows:

a multi-level phenomenon characterized by a context-dependent combination of proactivity, innovation, and risk-taking, that serves to drive change and renewal, promote resilient organizations, and resourcefully exploit opportunities for public value creation, with the ultimate aim of achieving positive societal and environmental outcomes.

4 Thematic analysis: establishing an analytical framework for PSE

In our preliminary analysis of the literature on PSE, we observed distinct clusters with varying approaches and conceptualizations. Beyond identifying a comprehensive understanding of PSE, our goal was to find common themes and develop an integrated analytical framework for PSE (Cronin & George, 2023). To do so, we conducted a thematic analysis (Thomas & Harden, 2008). Building upon the diverse conceptualizations of PSE observed in our preliminary analysis, we delved into the empirical justifications for PSE. While different scholarly communities describe PSE in their unique terms, we noticed a common thread across our review sample: the need for PSE arises either in response to

evolving societal needs or as a reaction to changing resources within the public sector (Bernier & Hafsi, 2007; Klein et al., 2010; Morris and Jones, 1999). This aligns with a broader evolution of the public sector, emphasized by Hood's (1991, p. 5) motto "do more with less." Therefore, our thematic analysis was rooted in the recognition of three primary aggregated themes for the justifications of PSE:

1. Doing more: public entities need to adapt to the "new world" and satisfy not only evolving societal needs, but also new demands (e.g., Höglund et al., 2018; Ongaro & Ferlie, 2020).
2. Doing the same, but better: while striving to expand their services, public organizations also need to continue providing existing services, and they are pressured to do this while improving quality of these services (e.g., Liddle & McElwee, 2019; McGuirk et al., 2022).
3. Doing with less: while offering old and new services, the public sector usually faces budget cuts, and needs to reduce costs (e.g., Perlmutter & Cnaan, 1995).

These justifications represent the foundational pillars upon which our integrated thematic framework for PSE is constructed. By applying three distinct yet complementary entrepreneurial lenses—renewal, resilience, and resourcefulness—we reinterpreted these justifications. In our framework, these lenses embody different dimensions of entrepreneurial activity within the public sector, encapsulating what we term the "3Rs" of PSE. Moreover, our framework acknowledges the crucial contextual conditions impacting the nature of PSE, which we call "shaping factors" (such as regulatory, political, institutional, and environmental constraints), and manageable barriers and drivers that can be directly impacted by public servants, which we call "success factors."

These factors, encapsulating what we term the "2Ss" of PSE, interact dynamically, influencing PSE outcomes based on the specific context of public sector organizations. This context-dependency highlights how various elements, such as the regulatory environment, political landscape, type of service provided, or organizational structure, can distinctly affect the performance and effectiveness of PSE strategies across organizations. Our framework is designed to recognize the fluidity of the "sector" concept, offering a

nuanced understanding of how entrepreneurship and public sector dynamics mutually influence and shape each other. By considering these nuances, our framework provides a more tailored and adaptable approach that allows us to capture the evolving and interdependent nature of PSE in various contexts. Figure 2 presents this framework, while subsequent sections provide a detailed explanation of the categories.

4.1 Renewal, resilience, and resourcefulness

In this section, we delve into the three foundational pillars of our framework, derived directly from our thematic analysis. These pillars, namely renewal, resilience, and resourcefulness, stem from the empirical evidence uncovered in our preliminary analysis of PSE literature. Together, they form a cohesive framework that encourages a sector perspective on PSE, integrating insights from diverse scholarly communities. Table 3 summarizes these three concepts and their derivation from the thematic analysis, providing a clear overview of their significance in understanding entrepreneurial dynamics within the public sector.

First, entrepreneurship scholarship has long recognized renewal as a critical element for entrepreneurial activities in established organizations (Floyd & Wooldrige, 1999). Renewal refers to the ability of organizations to adapt to changing circumstances by transforming the key ideas and strategies on which they are built (Guth & Ginsberg, 1990). Renewal is also widely recognized as a core component of PSE (see, e.g., Kearney & Morris, 2015); however, it is important to note that renewal processes in the public sector may be constrained by unique challenges not typically encountered in the private sector. Specifically, public sector organizations are often large bureaucratic entities that prioritize stability and consistency, which can impede efforts to introduce new ideas (Borins, 2002). Therefore, renewal in the context of PSE can be defined as a disruptive force that challenges the status quo of traditional bureaucratic structures and aims at embracing new opportunities and innovative solutions to address complex public problems, while navigating the inherent resistance to change that characterizes public sector organizations.

On the other hand, resilience is a concept that has gained significant attention in entrepreneurship literature in recent years (Ahmed et al., 2022; Korber & McNaughton, 2017). While renewal assumes an

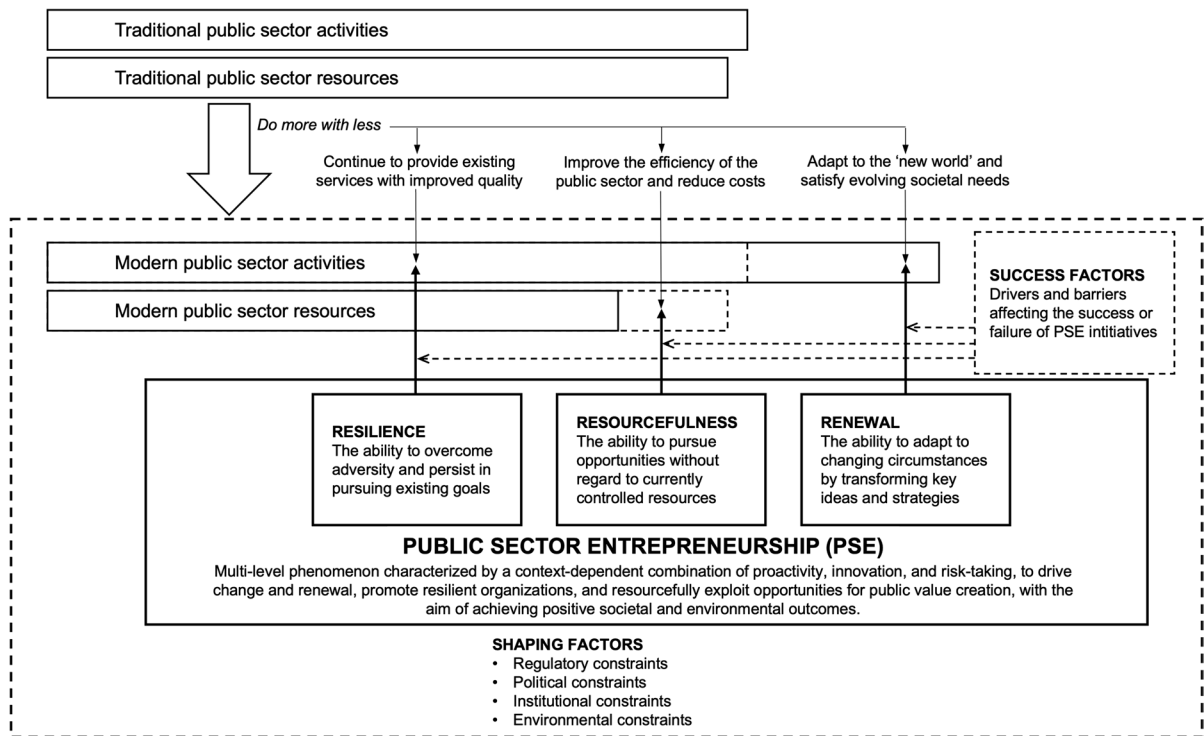


Fig. 2 The 3R2S analytical framework for PSE

Table 3 The 3Rs of PSE: Renewal, Resilience, and Resourcefulness

Aggregated theme	Description	Examples
Renewal	The ability to adapt to changing circumstances by transforming key ideas and strategies	Reforms require public organizations to renew their operations, structures, and services (Höglund et al., 2018) Public sector entrepreneurs studies as a strategist (Ongaro & Ferlie, 2020) Entrepreneurial public managers place innovation as a core component of their strategy (Andrews & Van de Walle, 2013)
Resilience	The ability to overcome adversity and persist in pursuing existing goals	Public sector organizations persist by developing and sustaining capabilities to cope with policy changes, uncertainties, and environmental turbulence (Liddle & McElwee, 2019) Public organizations can sustain an entrepreneurial orientation (EO) to enhance organizational routines (Deslatte & Swann, 2020)
Resourcefulness	The ability to pursue opportunities without regard to currently controlled resources	The “quest for public entrepreneurial approaches will undoubtedly become of increasing importance as public revenues are diminished” (Perlmutter & Cnaan, 1995, p. 36) Public entrepreneurs can learn from business approaches to improve budgeting and procurement processes (Posner & Rothstein, 1994)

entrepreneurial approach aimed at achieving new and changing goals, resilience involves the ability to overcome adversity and persist in pursuing existing goals (Fisher et al., 2016). However, while entrepreneurs in the private sector may encounter a clear and well-defined set of goals, the goals in the public sector are often more diverse and ambiguous (Chun & Rainey, 2005), making resilience more challenging. Nonetheless, resilience remains a crucial component of PSE, as the public sector must maintain the stability and continuity of essential public services in the face of unexpected disruptions (Naldi et al., 2020). Indeed, public sector organizations are responsible for providing critical services such as healthcare, education, and public safety, making discontinuity and failures much more severe than in the private sector.

Finally, resourcefulness is also a core concept of entrepreneurship, which refers to the “pursuit of opportunity without regard to resources currently controlled” (Stevenson, 1983, p. 3). Entrepreneurial resourcefulness, which can relate both to situations of change and continuity (Welter et al., 2018), is essentially a set of capabilities related to how well entrepreneurs deploy resources to obtain maximum impact (Corbett & Katz, 2013). Resourcefulness has become a central concept in PSE literature, particularly due to the rise of New Public Management (NPM) reforms aimed at increasing service quality while decreasing resources (Singla et al., 2018). However, public sector organizations may also face unique limitations in their ability to utilize resources effectively due to structural and procedural constraints (Ring & Perry, 1985). As such, resourcefulness in the PSE context encompasses both creative resource management and strategic utilization of collaboration with external stakeholders, networks, and partnerships. It involves identifying and leveraging available resources in innovative ways, as well as developing and maintaining relationships with stakeholders and partners who can contribute to achieving new and existing organizational goals.

In summary, the entrepreneurial concepts of renewal, resilience, and resourcefulness are instrumental in comprehending PSE and its empirical justifications, as they represent distinctive dimensions of entrepreneurial activity in the public sector and contribute uniquely to the broader definition of PSE. Indeed, renewal is critical for initiating and implementing innovative initiatives, resilience is necessary

for overcoming challenges and setbacks along the way, and resourcefulness is necessary for maximizing impact and overcoming resource constraints and bureaucratic barriers. Furthermore, examining these concepts in the context of PSE requires a deeper understanding of the unique challenges and complexities that exist in the public sector, particularly when it comes to fostering entrepreneurial initiatives. By focusing on these three concepts, we can develop a more nuanced and comprehensive understanding of PSE and the factors that facilitate or inhibit entrepreneurial activity in the public sector.

4.2 Shaping and success factors

The analysis of the reviewed literature revealed a crucial aspect of PSE: its diverse and context-dependent nature (Bernier & Hafsi, 2007). To represent the heterogeneity of the public sector, our framework includes two distinct yet interrelated sets of factors influencing PSE (see Table 4). The first set (i.e., the shaping factors) encompasses the contextual elements influencing how PSE occurs or takes shape. These factors encompass a wide spectrum, ranging from institutional (e.g., du Gay, 2004; Moon & deLeon, 2001) and political (e.g., Alexandrescu et al., 2014; Tajeddini & Trueman, 2016) constraints to regulatory (e.g., Currie et al., 2008; Ongaro & Ferlie, 2020) and environmental (e.g., Andrews & Van de Walle, 2013; Kearney & Meynhardt, 2016) conditions. Therefore, shaping factors impact the emergence and character of entrepreneurial activities within a particular public sector context. One important characteristic of shaping factors is that they are often beyond the control of individual public sector entrepreneurs, and the ways in which public servants are allowed to pursue entrepreneurial activities may be shaped by these constraints. As a result, PSE may manifest differently depending on the specific public sector context. For example, changing social, economic, or technological trends may lead to PSE as a form of renewal, which involves redefining the role of the public sector. Continuous and frequent changes in political leadership may require PSE as a form of resilience, which involves adapting to new challenges and constraints. Meanwhile, political preferences on the role of the public sector can impact public budgets, which requires PSE to be resourceful to make the most of limited resources.

Table 4 The 2Ss of PSE: Shaping and Success factors

Factor type	Description	Examples
Shaping factors	Contextual conditions that influence the emergence and nature of PSE	Regulatory constraints that limit the flexibility public servants have to engage in entrepreneurial activities Political constraints, such as priorities and preferences regarding entrepreneurial initiatives of political leaders and policymakers Institutional constraints, such as norms and practices that shape the behavior of public sector organizations and employees Environmental constraints, such as economic, technological, social, and sustainability trends that impact the public sector
Success factors	Drivers and barriers that impact the success or failure of PSE	Support from leadership Degree of accepted risk-taking Ability to learn from failure Capacity building Promotion of collaboration and networking

The second set (i.e., the success factors) instead is composed of the drivers and barriers that affect the level of success of PSE activities, and they vary depending on the specific manifestation of PSE and the context in which it occurs. These factors are often more directly influenced by the actions and decisions of individual public sector entrepreneurs. For instance, the level of support from leadership (Demircioglu and Chowdhury, 2021; Lewis et al., 2018), the degree of accepted risk-taking (Deslatte et al., 2021), the capacity of building managerial skills (Miao et al., 2018), and the extent to which collaboration and networking are promoted (Cloutier et al., 2016) can all impact the success of PSE. It is important to note that while success factors are distinct from shaping factors, they are also inter-related. Indeed, the shaping factors can impact the success factors by either creating opportunities or obstacles for PSE.

Therefore, while renewal, resilience, and resourcefulness provide distinct lenses through which to view PSE, the success of entrepreneurial activity in the public sector is ultimately impacted by a complex set of interrelated factors that operate at both the macro and micro levels and have different implications for public sector entrepreneurs. The factors that shape how PSE manifests are broader contextual conditions that impact the emergence of PSE initiatives, while the factors that impact PSE success are more specific drivers and barriers that can be influenced by individual public sector entrepreneurs.

5 Secondary analysis: reviewing the threads of PSE research

Our preliminary investigation and thematic analysis of the PSE literature provided a clearer understanding of the definitions of PSE and revealed the essential components of an analytical framework that drew on entrepreneurship research and addressed the unique characteristics of the public sector. This framework provides a valuable tool for categorizing and analyzing the diverse range of PSE studies, facilitating a better understanding of the interplay among categories and the relationships between different dimensions of PSE. To gain deeper insights into PSE, we revisited the literature through the lens of this framework. Initially, we recategorized the literature based on the three dimensions of PSE and found that 33 articles primarily focused on renewal, 23 on resilience, and 38 on resourcefulness, while a smaller number of studies (6) integrated multiple concepts. Here, we discuss the results of this analysis, highlighting the distinct characteristics of the three main threads of research, as well as presenting how different factors shape and influence the success of PSE initiatives within each domain.

5.1 Research on PSE as renewal

As mentioned earlier, renewal in the context of PSE refers to the process of establishing new entrepreneurial goals and strategies to embrace opportunities and challenge the status quo in the public sector. Scholars

report that renewal is generally motivated and particularly relevant when the public sector is faced with significant challenges from its environment (Kearney & Morris, 2015; Zerbinati & Souitaris, 2005), such as increasing competition, rapid technological advancements, and changing social and economic needs (Marcussen & Kaspersen, 2007; Ongaro & Ferlie, 2020). For instance, public sector reforms may require agencies to substantially renew their operations, structures, and services they provide to society, in order to pursue new missions or strategies that align with the changing demands of their constituents (Höglund et al., 2018). By comparing cases of PSE across contexts and institutional configurations, our analysis reveals three major focuses for public sector entrepreneurs pursuing renewal activities: vision, strategy, and innovation.

First, scholars in this thread of research tend to emphasize the pivotal role of top management in driving entrepreneurial renewal (Höglund et al., 2018; Moon & deLeon, 2001). These top managers, who are more likely to embody an entrepreneurial persona (Llewellyn et al., 2007), are recognized as “purveyors of vision” (Kearney & Meynhardt, 2016, p. 549). Their transformational and visionary qualities are crucial for the public sector, which faces complex challenges and needs leadership (Van Wart, 2003; Vivona, 2023). Consequently, the literature highlights the common adoption of top-down approaches in entrepreneurial renewal (Nay, 2011; Smith, 2011), which aligns with the need to redefine goals at higher levels of the organizational hierarchy in order to uphold a clear vision for the organization’s future.

Second, scholars in this discourse often view renewal as a combination of both entrepreneurial and strategic approaches (Höglund et al., 2018) and characterize public sector entrepreneurs as strategists (Ongaro & Ferlie, 2020). In this sense, the PSE literature analyzed how PSE is influenced by a strategic orientation (Zerbinati & Souitaris, 2005), positioned within the broader strategic entrepreneurship framework (Luke et al., 2011), and how it is similar and differs from entrepreneurship in the private sector; in this regard, Klein et al. (2010) provide a valuable distinction between private and public entrepreneurs, who have more complicated objectives and lack clear signals of performance. Likewise, Morris & Jones (1999) emphasize how public sector entrepreneurs are not motivated by profit, need political rather than

technical skills, and can use higher ambiguity as a source of managerial discretion.

Finally, research in this domain highlights the crucial connection between renewal and innovation (Llewellyn & Jones, 2003). Innovation in this context becomes imperative for public managers (Jordan, 2014), and Andrews & Van de Walle (2013) contend that entrepreneurial public managers place significant emphasis on fostering innovation as a central component of their strategic outlook. This entails a proactive approach to identifying and implementing innovative initiatives (Ateş, 2004) and a willingness to challenge established assumptions and practices within the public sector (Pallesen, 2018). By actively pursuing innovation, public sector entrepreneurs have the potential to enhance the quality, efficiency, and effectiveness of public services, ultimately leading to improved societal outcomes.

As anticipated, however, PSE does not happen in a vacuum. Public sector organizations are influenced by various factors that shape their renewal initiatives. First, regulatory frameworks set the boundaries within which renewal initiatives can be pursued: favorable regulations and supportive policies can facilitate innovation and change, while restrictive regulations and extensive bureaucracy may impede renewal efforts (Currie et al., 2008). For instance, strict regulatory constraints to the time top managers can hold office greatly shape the way public leaders act as entrepreneurs, as they influence their decision-making processes, risk-taking tendencies, and long-term strategic outlook (Ongaro & Ferlie, 2020).

Second, the political context can also either facilitate or hinder renewal efforts. In some national contexts, highly centralized structures can create levels of political dependence that discourage PSE (Alexandrescu et al., 2014), while in other contexts, the pressures from globalization and international sanctions can constrain innovative activities (Tajeddini & Truman, 2016). Moreover, abrupt exogenous changes in political rules may trigger PSE (Zerbinati & Souitaris, 2005). Furthermore, the level of political acceptance of an entrepreneurial posture within public sector organizations, as reflected in mainstream political discussions, serves as a fundamental factor shaping the landscape of PSE (du Gay, 2004).

Thirdly, institutional constraints play a significant role in shaping the public sector environment (Baez & Abolafia, 2002; Moon and deLeon, 2001;

Sutheewasinnon et al., 2016). These constraints encompass the prevailing governance structures, cultural practices, and values within the public sector (Mitchell, 2001; Moon, 1999), leading to the formation of distinct sets of “non-reducible norms of organizational conduct” (du Gay, 2004, p. 47). Likewise, the existence of diverse administrative traditions across contexts, as highlighted by Ongaro and Ferlie (2020), leads to variations in beliefs and norms regarding proper behavior within the public sector. These institutional constraints influence the way public sector entities approach renewal initiatives, as they must navigate and adhere to the specific cultural and normative frameworks that shape their operations (Demircioglu & Vivona, 2021).

Lastly, the environmental and socioeconomic context plays a crucial role in shaping the nature and scope of renewal initiatives in the public sector (Moon, 1999). The socioeconomic factors, including population size and needs, economic conditions, and societal challenges, provide the overarching backdrop against which these initiatives are conceived and implemented (Moon & deLeon, 2001). Public sector entrepreneurs must take into account the unique characteristics and demands of their environment in order to effectively address the diverse needs and opportunities (Kearney & Meynhardt, 2016). For instance, research by Andrews and Van de Walle (2013) highlights the significance of population density as a shaping factor for successful PSE initiatives: in more densely populated areas, citizens tend to perceive public provision as more efficient, which can create a conducive environment for the support and implementation of PSE strategies.

Regarding the success factors for renewal, the literature highlights the importance of environmental fit as key for PSE (Kearney & Morris, 2015). First, public managers must navigate internal organizational dynamics to champion innovation (Ateş, 2004; Swann, 2017). However, resistance to change and to adopt new visions and strategies is pervasive in the public sector (Höglund et al., 2018). To address this challenge, Miao et al. (2018) propose the provision of entrepreneurial leadership training to public servants in higher positions. This approach is crucial, as research suggests that entrepreneurial leaders are not necessarily born but made, highlighting the importance of PSE education (Grimm & Bock, 2022). Additionally, Gicheva and Link

(2022) highlight the importance of ensuring that the vision of entrepreneurial leaders aligns with the organization, as misalignment can lead to resistance, turnover, and failure. At the same time, Currie et al. (2008) report that public leaders can deeply shape the entrepreneurial culture in their organizations, and in light of these considerations, Vivona (2023) emphasizes the need to cultivate effective entrepreneurial leaders who can foster a democratic culture of change within public organizations, further underscoring the significance of training public managers in an entrepreneurial style.

Public managers must not only align with internal dynamics but also adapt to their external environment, generally by implementing coordination mechanisms that promote the exchange of knowledge across organizations (Swann, 2017). Cloutier et al. (2016) highlight that public managers' ability to establish and nurture connections with diverse stakeholder groups is crucial for the success of renewal initiatives, as it enables them to navigate the complexities of pluralism and contradictions that exist in the external environment. Moreover, networking, especially with nongovernmental stakeholders, positively influences public managers' innovativeness, further supporting PSE (Demircioglu et al., 2020; Zandberg & Morales, 2019). Nevertheless, as public organizations are associated with a much more extensive and diverse range of stakeholders than private businesses (Currie et al., 2008), the process of networking and engaging with stakeholders can prove to be exceptionally demanding and time-consuming, potentially impacting the managers' ability to fulfill their entrepreneurial roles (Dargie, 1998). Therefore, a proper balance that enables public sector entrepreneurs to navigate the complexities of stakeholder dynamics while dedicating ample attention to driving innovation emerges as a critical success factor for PSE.

5.2 Research on PSE as resilience

We defined the entrepreneurial characteristic of resilience as the ability to overcome adversity and persist in pursuing existing goals (Fisher et al., 2016). While it is important to note that several studies in this thread do not actively employ the concept of resilience (but concepts that relate to the organization long-term functioning), it nonetheless offers a

relevant theoretical perspective to interpret the literature interested in PSE as a means of improvement rather than transformation (e.g., Bernier & Hafsi, 2007). Indeed, in contrast to the emphasis on goal redefinition by top management in renewal, the resilience literature in the PSE domain is more concerned with how public sector organizations persist by developing and sustaining capabilities to cope with policy changes, uncertainties, and environmental turbulence (Liddle & McElwee, 2019), and in turn create resilient societies (McGuirk et al., 2022), which aligns with one of the foundational rationales of PSE as acknowledged by Ostrom (2005, p. 1): “many policy analysts [presume] that without major external resources and top-down planning, public goods and sustainable common-pool resources cannot be provided. This absolute presumption is wrong.”

By employing the unified lens of resilience to integrate diverse insights, we gain valuable perspectives on three crucial themes within PSE research: the effects of entrepreneurial capabilities in the public sector, the entrepreneurial orientation of public organizations, and their significance for the broader society. First, the perspective of resilience redirects our attention toward the importance of organizational-level entrepreneurial capabilities in effectively navigating challenges and fostering innovation (Clausen et al., 2020; Klein et al., 2013). Rather than relying solely on top-down directives, resilient organizations promote bottom-up initiatives and encourage individuals at all levels to contribute to innovation (Vivona & Lewis, 2023). This shift in focus recognizes that innovation can emerge from various levels within an organization, empowering all public sector employees to actively engage in problem-solving and adaptation (Demircioglu & Chowdhury, 2021; Zampetakis & Moustakis, 2007). Furthermore, resilient organizations with high-quality entrepreneurial capabilities—such as robust innovation culture, flexible structures, and distributed decision-making processes (Gullmark & Clausen, 2023)—are better equipped to withstand leadership changes. This perspective offers a solution to one of the key limitations often encountered in the discourse on renewal, which is the potential risks associated with over-reliance on a single individual in a leadership position (Ongaro & Ferlie, 2020).

Therefore, the focus on resilience allows organizations to nurture a collective entrepreneurial mindset, where innovative ideas are generated from multiple

sources within the organization (Bernier & Hafsi, 2007). Within this context, the literature also provides an intriguing perspective that reexamines the role of managers. While individual managers can still act as entrepreneurs (Gullmark, 2021), some scholars, supporting the idea of “entrepreneurship without entrepreneurs” (Liddle & McElwee, 2019, p. 1308), suggest that managers in this context should play a role characterized by prudence and careful decision-making (Kane & Patapan, 2006). In this regard, Lapuente and Suzuki (2021) find that women as public managers demonstrate higher levels of both entrepreneurship and prudence in their attitudes towards innovation, and thus challenge previous findings of male entrepreneurial identification (Llewellyn et al., 2007). This suggests that embracing a more “feminine” perspective of entrepreneurship, characterized by collaboration, inclusion, and empathy, may be particularly beneficial to foster resilience within public organizations.

Another perspective within this discourse is how public organizations can sustain an entrepreneurial orientation (EO) to enhance organizational routines, decision-making processes, and overall performance (Deslatte & Swann, 2020). In particular, the EO concept, which refers to the “organizational animus to seek out and respond to threats and opportunities” (Deslatte & Swann, 2020, p. 93) and is grounded on an “innovative, proactive, and risk-taking organizational culture” (Deslatte et al., 2021, p. 202), has been one of the major focuses of investigation in PSE scholarship (see, e.g., Meynhardt & Diefenbach, 2012; Naldi et al., 2020; Smith, 2014). While EO is often associated with ideas of renewal (Meynhardt & Diefenbach, 2012), by carefully evaluating how EO has been operationalized in the context of PSE across studies, our analysis identifies that EO in the public sector primarily facilitates the development of capabilities that can shield organizations from environmental turbulence.

For instance, in measuring the innovation component of EO, Meynhardt and Diefenbach (2012, p. 785) include items such as “implements new approaches to meet its responsibilities,” which suggests that innovation serves the purpose of continuity rather than radical change. Similarly, Naldi et al. (2020) measure proactiveness as the pioneering quality of doing new things or introducing novel ways of operating, which emphasizes the adaptation and exploration of

innovative approaches within existing frameworks, thus underscoring the organization's ability to withstand challenges and maintain stability. Moreover, Deslatte et al. (2021) find that public organizations are more inclined to take risks when faced with potential losses rather than expected rewards, further supporting the notion that EO aligns with the pursuit of continuity and maintaining existing goals.

Finally, within the resilience thread of PSE literature, we identify a distinct niche that explores the role of entrepreneurial public organizations in shaping entrepreneurial ecosystems and promoting growth and innovation in the broader economy (e.g., Leyden, 2016; Mazzucato & Robinson, 2018). The underlying rationale is that resilient public sector organizations, by effectively addressing external shocks, economic downturns, and technological disruptions, can foster stability, regulatory clarity, policy frameworks, and an environment of certainty that are conducive to private sector innovation and investment (del Moral-Espín & Fernández-García, 2018; Farmer, 2011; Scott & Vonortas, 2021). Interestingly, also within this context, research acknowledges that entrepreneurial endeavors in the public sector can emerge organically, propelled by the collective aspirations, shared purposes, values, and motivations of individuals and groups rather than centrally coordinated by top management (Lamberty & Nevers, 2022).

The regulatory, political, institutional, and environmental factors play a significant role in shaping the manifestation of PSE in the context of resilience. In terms of the regulatory environment, it is important to recognize that regulations are not static but continually evolve and adapt to emerging challenges. While supportive regulations can facilitate innovation and provide management discretion for renewal activities, the specific ways in which PSE emerges within evolving regulatory constraints can vary depending on the organization's context. This implies that the analysis of the relationship between PSE and resilience needs to consider the dynamic nature of the regulatory environment (Tremml, 2021). Additionally, different types of public sector organizations, such as public enterprises and monopolistic public entities, may be subject to distinct regulatory frameworks, further influencing how PSE and resilience interact (Smith, 2014; Smith & Umans, 2015).

Additionally, political and institutional factors play a crucial role in shaping the emergence of PSE.

Deslatte and Swann (2020) emphasize the significance of political capacity, which encompasses both political support from elected officials and community attitudes and engagement. This political backing enables public sector organizations to undertake innovative, risk-taking, and proactive actions. At the same time, institutional constraints within the public sector, such as norms governing budgets and procurement activities, greatly influence entrepreneurial orientation (EO) of these organizations (Deslatte & Swann, 2020; Smith, 2014). These institutional constraints can either facilitate or impede the pursuit of entrepreneurial initiatives within the public sector. Finally, environmental factors also play a role in shaping PSE. For example, McGuirk et al. (2022) and Smith (2014) highlight various environmental constraints, including dynamism, hostility, munificence, geographical proximity, density, and cooperation. These factors influence the emergence and development of PSE within specific contexts.

Taken together, regulatory, political, institutional, and environmental factors all contribute to shaping the landscape of PSE. Understanding these constraints and dynamics is crucial for public sector organizations seeking to foster an entrepreneurial mindset and undertake innovative initiatives that align with their objectives and stakeholder needs. By effectively navigating and leveraging these factors, public organizations can create an environment conducive to entrepreneurial behavior and foster sustainable and impactful outcomes. To do so successfully, it is important to differentiate between factors that contribute to the development of skills and resources enabling the organization's engagement with PSE (entrepreneurial capabilities) and factors that influence the overall organizational mindset towards PSE (entrepreneurial orientation).

The analysis of public sector capabilities and their effective deployment, along with the alignment of various interests to pursue public value, plays a fundamental role in understanding PSE success (Klein et al., 2013). The development of public sector entrepreneurial capabilities is influenced by factors such as management support for innovation and leadership styles (Demircioglu & Chowdhury, 2021; Lewis et al., 2018). Effective PSE is facilitated by leaders who exhibit discretionary styles and empower employees to engage in less routinized tasks (Considine, 1999). In the context of local governments,

Gullmark and Clausen (2023) conducted an extensive review that examines the micro-foundations impacting innovation capability. They highlight factors such as alertness to pressures and needs, fostering an innovation culture that promotes participation, accessibility, and transparency, and effective management of innovation processes, including job autonomy and reducing work routines. These findings align with previous research emphasizing the significance of innovation-stimulating routines, processes, tools, and structures (Gullmark, 2021).

The entrepreneurial orientation (EO) in public sector organizations is shaped by a variety of factors that extend beyond traditional measures of management support, work discretion, and resources. Meynhardt and Diefenbach (2012) highlight that the multitude of expectations faced by organizations, the localism exhibited by middle managers, and a deep understanding of local circumstances all play significant roles in influencing EO. This suggests that contextual awareness and responsiveness are crucial for fostering entrepreneurial behavior in the public sector. Additionally, the organizational culture also influences EO, with a riskier culture being positively correlated with top managers' willingness to trust employees, while organizations characterized by bureaucratic processes and high involvement with elected officials tend to exhibit a more risk-averse culture (Bozeman & Kingsley, 1998). Managerial trust and the existence of formalized rule constraints for rewarding high performers and addressing poor performers are identified as decisive factors contributing to this difference (Chen & Bozeman, 2012).

5.3 Research on PSE as resourcefulness

Since the 1980s, the concept of resourcefulness in the public sector gained significant prominence. Resourcefulness, characterized as the utilization of old stuff in new ways (Sanger & Levin, 1992), emerged as a central idea of NPM reforms, which aimed to revolutionize traditional bureaucratic structures by introducing business-oriented principles and practices (Sundin, 2011). In this context, PSE is directed to make public organizations more efficient and is influenced by insights derived from private sector management (Andrews et al., 2020; Box, 1999). Thus, the concept of resourcefulness reflected a shift in mindset, advocating for the innovative repurposing

and creative utilization of existing resources, as well as for the use of alternative resources that were not reliant on tax revenues (Perlmutter & Cnaan, 1995; Warner & Hebdon, 2001). The underlying motivation behind this shift was the recognition that conventional approaches were insufficient in enhancing the welfare of individuals within the public sphere (Sanger & Levin, 1992). Against this background, research in this thread recognizes that the “quest for public entrepreneurial approaches will undoubtedly become of increasing importance as public revenues are diminished” (Perlmutter & Cnaan, 1995, p. 36).

Consequently, scholars in this thread of research highlight the importance of public organizations being able to maximize their resources and find new ways to deliver services, often in the face of budget cuts or other resource constraints (Ford & Anderson, 2017). Here, PSE is not driven necessarily by the need of change or continuity, and in some cases, resource constraints become the only motivator for PSE (Ahrens & Ferry, 2018), as “public managers will attempt to be more entrepreneurial in response to short-term shortages in liquid assets, but are otherwise uninterested in pursuing such strategies” (Singla et al., 2018, p. 14). Specifically, our analysis finds four key focuses of PSE as resourcefulness: learning from businesses, equilibrium with democracy, collaboration and partnerships, and leveraging technology.

First, NPM reforms have introduced private-sector management practices in public organizations across countries (e.g., Honingh & Kartsen, 2007; Lunt et al., 2015; Mattei, 2006; Prince, 2000). While the public and private sectors have unique characteristics and goals, there are areas where lessons from the private sector can be applied to optimize the use of public resources (Hodgson et al., 2022; van der Scheer, 2007; Vigoda, 2000). For example, Posner and Rothstein (1994) highlight that public entrepreneurs can learn from private sector approaches to improve budgeting and procurement processes. Public entrepreneurs can also learn from the resourcefulness and innovation exhibited by their private counterparts when faced with financial constraints (Singla et al., 2018). By adopting a problem-solving mindset and embracing a proactive approach, they can identify creative solutions to optimize resource utilization and deliver essential services efficiently (Lunt et al., 2015). Nevertheless, as Sanger and Levin (1992) point out, being entrepreneurial in the public sector

does not necessarily mean adopting the exact style of the private sector, as public entrepreneurs distinguish themselves by their willingness to scan the broader environment for approaches that align with their objectives, while also considering the unique context and values of the public sector.

However, scholars have been cautious of NPM since finding an equilibrium between entrepreneurship and democratic accountability is a complex challenge that requires careful examination of potential trade-offs (Borins, 2000; Tremml, 2021). This issue comprises two interconnected aspects. The former, which has been partially addressed in the previous discussion on success factors for renewal, pertains to the need for entrepreneurial leaders to effectively balance the pursuit of innovation with stakeholder engagement (Vivona, 2023). While excessive attention to engagement may impede managers from pursuing entrepreneurial initiatives, scholarly literature in this thread recognizes that an overemphasis on innovation without due regard for democratic values can undermine the democratic fabric of society (Denhardt & Denhardt, 2000; Morales et al., 2014). The latter aspect instead delves deeper into the profound question regarding the role of public managers as entrepreneurs. This goes beyond the quest for balance and delves into an inquiry concerning whether public managers should engage in entrepreneurship at all. For instance, Terry (1998, p. 198) asserts that “public entrepreneurs pose a serious threat to democracy,” while Perlmutter and Cnaan (1995, p. 35) warn that PSE might represent “a breach in the democratic order of government.” In a similar vein, Bellone and Goerl (1992) argue that public entrepreneurs inherently seek to reduce rules and regulations in order to enhance their influence over budgets and decision-making processes, thus eroding democratic controls and accountability.

While there are differing perspectives on the relationship between PSE and democracy, researchers tend to recognize the merits of PSE, and they widely acknowledge that the debate surrounding PSE involves navigating trade-offs (Borins, 2000). For instance, Denhardt and Denhardt (2000) advocate for public entrepreneurs to be influenced by and held accountable to a complex network of institutions and standards to ensure that they operate within established institutional frameworks that uphold democratic values. Box (1999) situates the role of the

public entrepreneur within the larger context of governance, ensuring that management practices align with and support the broader goals and principles of effective public administration. Supporting these views, Borins (2000) reports several cases in which public entrepreneurs effectively utilize appropriate organizational channels to garner support for their ideas, demonstrating how they can successfully navigate the complexities of the public sector and effectively contribute to organizational and societal goals while upholding democratic values.

Therefore, collaboration emerges as the very essence of entrepreneurial activity, rather than simply a success factor for PSE (Sørensen & Torfing, 2017). Rather than being viewed as a means to improve organizational change or continuity, collaboration takes on a transformative role as public sector organizations adopt an entrepreneurial mindset toward creating and maintaining collaborative networks (Feeney & Langer, 2016). The focus shifts towards actively seeking a diverse range of formal and informal collaborative arrangements (Kurtmollaiev et al., 2023), recognizing that collaboration is fundamental for unlocking new and untapped resources within society, such as in the case of social impact bonds (Fraser et al., 2022), public–private partnerships (Xing et al., 2018), and collaborative governance (Hartley et al., 2013; Sørensen & Torfing, 2017). In essence, managing collaboration becomes the entrepreneurial activity itself (Page, 2003), driving the exploration and exploitation of opportunities through creative engagement with stakeholders.

Finally, in addition to collaboration, leveraging technology plays a pivotal role in enhancing the entrepreneurial capacity of public sector organizations. The adoption of technologies such as e-government and digital innovation offers new avenues for acquiring and utilizing resources more effectively (Agarwal et al., 2021; Tassabehji et al., 2016). These technological advancements enable public entities to streamline their processes, improve service delivery, and optimize resource allocation. By embracing digital transformation, public organizations can tap into the vast potential of open government platforms to better understand citizen needs, enhance decision-making, and foster collaboration across different sectors and stakeholders (Chatfield & Reddick, 2017). Furthermore, digital innovation facilitates the creation of innovative solutions,

enabling public sector entities to address complex societal challenges more efficiently and effectively.

As for the shaping factors of PSE as resourcefulness, the literature stresses the emphasis on political and institutional factors. First, public organizations are deeply influenced by the political landscape in which they operate (Taşan-Kok & Özogul, 2021). Political factors such as periods of turmoil, dissatisfaction with traditional services, and lack of trust in government can act as catalysts for radical policy changes that spur NPM reforms (Mattei, 2006). These shifts in the political climate can pave the way for entrepreneurial initiatives, even though political ideals about the size and scope of government also play an important role, with variations observed between regions (Box, 1999). Additionally, political changes that favor cuts to government size and budgets can encourage public servants to adopt a more entrepreneurial mindset (Singla et al., 2018), as well as policy alternations that provide greater discretion (Whynes et al., 1999). Interestingly, research suggests that the political orientation or control does not typically hinder PSE (Andrews et al., 2020; Warner & Hebdon, 2001).

Institutional factors also significantly impact the manifestation of PSE initiatives. For instance, in specific contexts, the ethos of the public sector and the administrative tradition can be at odds with the adoption of technology to improve efficiency (Wiredu, 2012). Furthermore, collaboration exhibits diverse practices within and across national settings, indicating the significance of institutional context in shaping collaborative efforts (Fraser et al., 2022; Vivona et al., 2023). The national context plays a role in going beyond traditional bureaucracy, as Western countries tend to embrace NPM principles, while developing countries may have distinct experiences (Ang, 2017; Sørensen & Torfing, 2017). By considering these political and institutional dynamics, public entrepreneurs can navigate tensions and leverage support to drive entrepreneurial initiatives.

As they do this, they must also be aware of specific success factors for PSE in the context of resourcefulness. First, when introducing market-based logic in service provision, the type of service matters, as NPM strategies are more suitable for services that can be standardized (Hartley et al., 2013). Furthermore, public entrepreneurs need to possess several skills to succeed in PSE. For instance, the ability to network

becomes paramount when pursuing efficiency (Ford & Andersson, 2017), as well as the capacity to translate old ideas in new contexts (Sanger & Levin, 1992). Another critical skill to secure PSE success lies in the ability to enhance participation and connections among stakeholders (Bellone & Goerl, 1992), as well as the ability to align collaborators' diverse understandings (Page, 2003). Competent leadership is also required to successfully utilize technology (Lim & Tang, 2008) and develop digital capabilities (Agarwal et al., 2021). Finally, political astuteness as a way to navigate trade-offs is another important quality public managers need to develop to succeed in PSE initiatives (Borins, 2000; Hartley et al., 2015).

6 Discussion and conclusion

In the ever-changing landscape of public needs, digitalization of public services, and governments' budget constraints, public organizations often find themselves at a crossroads where they must adapt and innovate to address evolving demands (Demircioglu et al., 2023). In this article, we conducted a systematic and integrative review of the public sector entrepreneurship (PSE) scholarship to reveal how public sector entrepreneurs navigate these challenges, focusing on the following research questions: (i) How can we conceptualize PSE? (ii) What are the crucial contextual conditions impacting the nature of PSE? and (iii) How can PSE activity be managed successfully in the public sector context? We find that PSE is a *multi-level phenomenon characterized by a context-dependent combination of proactivity, innovation, and risk-taking, that serves to drive change and renewal, promote resilient organizations, and resourcefully exploit opportunities for public value creation, with the ultimate aim of achieving positive societal and environmental outcomes*. We find that renewal, resilience, and resourcefulness are complementary vital aspects of entrepreneurship that not only managers and leaders, but public servants at all levels can and need to foster in the public sector. Our review synthesized several context-dependent shaping and success factors that impact the nature of PSE and can be leveraged to create public value through entrepreneurship.

As such, this article offers four key contributions. Firstly, our analysis synthesizes diverse definitions of

PSE, resulting in a clearer conceptualization of this field. By consolidating different perspectives, we provide a more nuanced understanding of PSE. Secondly, we have developed a PSE framework that draws from established entrepreneurship scholarship. This framework considers the unique intricacies of the public sector, ensuring its relevance and applicability. It is not purely conceptual but is grounded in empirical evidence from the existing PSE literature. Thirdly, by applying our framework to re-analyze the PSE literature, we unveil hidden patterns and themes that were previously overlooked. Finally, the integrative review approach also constitutes a significant methodological contribution. While systematic reviews emerged as additions to traditional literature reviews as they can provide reproducible, transparent, and standardized techniques to identify pertinent studies (Cinar et al., 2019), the systematic and integrated analysis (Cronin & George, 2023) of the fragmented evidence enhances our understanding of PSE and serves as a foundation for future cumulative research in this area.

In particular, our review uncovered different approaches employed by public organizations in their pursuit of entrepreneurship. One prominent pattern we observed is the top-down approach, where public managers take the lead in redefining the organizational vision and formulating strategies that are tailored to the unique characteristics of the public sector. This approach challenges established assumptions and embraces radical innovation to break away from the status quo, as Hayter et al. (2018) suggested. It is driven by the recognition that public service provision may become obsolete, and that renewal is necessary to meet the changing needs of society. Our analysis also identified instances where the continuity of existing services takes precedence, leading to bottom-up approaches. Here, the focus shifts to the overall organizational mindset towards PSE and the organization's capacity to engage with it. The emphasis lies in cultivating an entrepreneurial culture throughout the organization and ensuring that it possesses the necessary skills and resources to undertake entrepreneurial initiatives. Furthermore, we found that resource optimization is a key motivator for PSE in some cases, as public organizations strive to do more with less. This often involves learning from private sector techniques, adopting new technologies, or seeking new resources through fundraising and partnerships. However, it is important to navigate this pursuit of

efficiency while considering the impact on democratic values, and collaboration emerges as an effective strategy for repurposing private sector resources to drive public value creation.

Interestingly, our analysis reveals that these themes are interconnected. Indeed, a deeper reflection on the linkages between the analytical dimensions of our framework provides insight that can be a basis for future research. First, the link between the PSE dimensions of resourcefulness and renewal offers an interesting basis for discussing the debate on the relationship between entrepreneurship and democracy. In the past years, entrepreneurship scholarship has been increasingly interested in the debate (see Audretsch & Moog, 2022; Farè et al., 2023), and our review of the PSE literature highlights that the debate is particularly important in the public sector. Our review of the PSE literature reveals that the relationship between PSE and democratic accountability involves trade-offs; however, the mechanisms shaping these trade-offs and how public entrepreneurs can find an optimal balance remain less clear. For instance, recent research in public enterprises points out that while including politicians in governing boards to bridge the public sphere with the public entity may improve democratic accountability, it also constitutes an important barrier to entrepreneurial activity (Tremml, 2021). Yet, we suggest that the resourcefulness perspective places importance on collaboration and digital technologies, offering a potential avenue for future research to explore leveraging these tools to improve public participation in the entrepreneurial process. For instance, we have evidence of PSE in innovating public accounting practices to address budget cuts (Ahrens & Ferry, 2018), and this approach also holds promise to explore how PSE can be a tool to increase public participation in budget decisions, such as in the case of innovative initiatives to develop participatory budgeting (see Ewens & van der Voet, 2019).

The link between PSE renewal and resilience also offers interesting insights for developing future research. Public sector organizations are confronted with an increasing set of public needs and demand, which requires the provision of new services and, thus, the redefinition of organizational goals. At the same time, they need to continue providing essential services with stability, and these two orientations can be at odds. Therefore, public sector organizations need to implement both disruptive

and incremental innovations because the way the public sector develops both managerial and organizational innovation capabilities is path-dependent (Gullmark, 2021). This aspect serves as an additional influencing factor that shapes how PSE is manifested within organizations. Nonetheless, further research is required to deepen our understanding of PSE through these understudied perspectives and their interconnections. Particularly, there is a need to explore the balance between top-down and bottom-up approaches to entrepreneurial activities in the public sector (Demircioglu, 2023). Investigating these aspects will contribute significantly to advancing our knowledge of PSE and its implications for organizational effectiveness.

Finally, the connection between resilience and resourcefulness offers further avenues for future research. How can public entrepreneurs enhance organizational resilience while efficiently utilizing resources? Building resilience often requires long-term investments and may involve creating redundancy to ensure continuity during disruptions (Plimmer et al., 2022). This contrasts with findings suggesting that budget cuts are the primary driver for public servants to engage in short-term entrepreneurial activities (Feeney & Langer, 2016). Additionally, networking for improved collaboration may divert resources needed for building capabilities. Preliminary research suggests that developing innovation capabilities can facilitate collaborative approaches (Clausen et al., 2020), but further investigation is necessary. Furthermore, advancements in artificial intelligence (AI) adoption in the public sector hold potential for freeing up resources, particularly in terms of time, which can then be utilized to bolster resilience. As AI continues to be introduced and studied in public organizations (Guenduez & Mettler, 2023), this framework offers a critical foundation for future exploration.

To conclude, public organizations face a complex landscape characterized by tensions arising from the need to address new demands, maintain essential services, and manage limited budgets. Our analysis of the PSE literature through the perspectives of renewal, resilience, and resourcefulness sheds light on how public servants, individually and collectively, can leverage entrepreneurial approaches to navigate these challenges within the framework of their regulatory, political, institutional, and environmental constraints. Entrepreneurship provides a powerful

approach for public servants to address these tensions and pursue innovative initiatives that create public value. We thus encourage future research to delve deeper into the specific mechanisms that public sector entrepreneurs employ to effectively navigate the tensions inherent in their context (Cinar et al., 2024).

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References

- Agarwal, R., Mittal, N., Patterson, E., & Giorcelli, M. (2021). Evolution of the Indian LPG industry: Exploring conditions for public sector business model innovation. *Research Policy*, 50(4), 104196.
- Ahmed, A. E., Ucbasaran, D., Cacciotti, G., & Williams, T. A. (2022). Integrating Psychological resilience, stress, and coping in entrepreneurship: A critical review and research agenda. *Entrepreneurship Theory and Practice*, 46(3), 497–538.
- Ahrens, T., & Ferry, L. (2018). Institutional entrepreneurship, practice memory, and cultural memory: Choice and creativity in the pursuit of endogenous change of local authority budgeting. *Management Accounting Research*, 38, 12–21.
- Alexandrescu, F., Martinát, S., Klusáček, P., & Bartke, S. (2014). The path from passivity toward entrepreneurship: Public sector actors in brownfield regeneration processes in Central and Eastern Europe. *Organization & Environment*, 27(2), 181–201.
- Andrews, R., Ferry, L., Skelcher, C., & Wegorowski, P. (2020). Corporatization in the public sector: Explaining the growth of local government companies. *Public Administration Review*, 80(3), 482–493.
- Andrews, R., & Van de Walle, S. (2013). New public management and citizens' perceptions of local service efficiency, responsiveness, equity and effectiveness. *Public Management Review*, 15(5), 762–783.
- Ang, Y. Y. (2017). Beyond Weber: Conceptualizing an alternative ideal type of bureaucracy in developing contexts. *Regulation & Governance*, 11(3), 282–298.

- Ateş, H. (2004). Management as an agent of cultural change in the Turkish public sector. *Journal of public administration research and theory*, 14(1), 33–58.
- Audretsch, D. B., & Moog, P. (2022). Democracy and entrepreneurship. *Entrepreneurship Theory and Practice*, 46(2), 368–392.
- Baez, B., & Abolafia, M. Y. (2002). Bureaucratic entrepreneurship and institutional change: A sense-making approach. *Journal of public administration research and theory*, 12(4), 525–552.
- Bellone, C. J., & Goerl, G. F. (1992). Reconciling public entrepreneurship and democracy. *Public Administration Review*, 52(2), 130–134.
- Bernier, L., & Hafsi, T. (2007). The changing nature of public entrepreneurship. *Public Administration Review*, 67(3), 488–503.
- Bernier, L. (2022). Entrepreneurship in public management. In *Elgar Encyclopedia of Public Management* (pp. 229–233). Edward Elgar Publishing Limited. <https://doi.org/10.4337/9781800375499.entrepreneurship>
- Borins, S. (2002). Leadership and innovation in the public sector. *Leadership & Organization Development Journal*, 23(8), 467–476.
- Borins, S. (2000). Loose cannons and rule breakers, or enterprising leaders? Some evidence about innovative public managers. *Public administration review*, 60(6), 498–507.
- Box, R. C. (1999). Running government like a business: Implications for public administration theory and practice. *The American Review of Public Administration*, 29(1), 19–43.
- Boyett, I. (1996). The public sector entrepreneur—a definition. *International Journal of Public Sector Management*, 9(2), 36–51.
- *Bozeman, B., & Kingsley, G. (1998). Risk culture in public and private organizations. *Public administration review*, 58(2), 109–118.
- Brielmaier, C., & Friesl, M. (2023). The attention-based view: Review and conceptual extension towards situated attention. *International Journal of Management Reviews*, 25(1), 99–129.
- Casson, M. (1982), *The Entrepreneur: An Economic Theory*, Oxford, Martin Robinson. — (2003), *The Entrepreneur: An Economic Theory*, 2nd edn, Cheltenham, Edward Elgar.
- Chatfield, A. T., & Reddick, C. G. (2017). A longitudinal cross-sector analysis of open data portal service capability: The case of Australian local governments. *Government information quarterly*, 34(2), 231–243.
- Chen, C. A., & Bozeman, B. (2012). Organizational risk aversion: Comparing the public and non-profit sectors. *Public Management Review*, 14(3), 377–402.
- Chun, Y. H., & Rainey, H. G. (2005). Goal ambiguity in US federal agencies. *Journal of Public Administration Research and Theory*, 15(1), 1–30.
- Cinar, E., Trott, P., & Simms, C. (2019). A systematic review of barriers to public sector innovation process. *Public Management Review*, 21(2), 264–290.
- Cinar, E., Simms, C., Trott, P., & Demircioglu, M. A. (2024). Public sector innovation in context: A comparative study of innovation types. *Public Management Review*, 26(1), 265–292.
- Clausen, T. H., Demircioglu, M. A., & Alsos, G. A. (2020). Intensity of innovation in public sector organizations: The role of push and pull factors. *Public Administration*, 98(1), 159–176.
- Cloutier, C., Denis, J. L., Langley, A., & Lamothe, L. (2016). Agency at the managerial interface: Public sector reform as institutional work. *Journal of Public Administration Research and Theory*, 26(2), 259–276.
- Considine, M. (1999). Markets, networks and the new welfare state: Employment assistance reforms in Australia. *Journal of social policy*, 28(2), 183–203.
- Corbett, A. C., & Katz, J. A. (Eds.). (2013). *Entrepreneurial resourcefulness: Competing with constraints*. Emerald Group Publishing.
- Cronin, M. A., & George, E. (2023). The why and how of the integrative review. *Organizational Research Methods*, 26(1), 168–192.
- Currie, G., Humphreys, M., Ucbasaran, D., & McManus, S. (2008). Entrepreneurial leadership in the English public sector: Paradox or possibility?. *Public Administration*, 86(4), 987–1008.
- Dargie, C. (1998). The role of public sector chief executives. *Public Administration*, 76(1), 161–177.
- De Massis, A., Kotlar, J., Wright, M., & Kellermanns, F. W. (2018). Sector-based entrepreneurial capabilities and the promise of sector studies in entrepreneurship. *Entrepreneurship Theory and Practice*, 42(1), 3–23.
- Dean, H., Larsen, G., Ford, J., & Akram, M. (2019). Female entrepreneurship and the metanarrative of economic growth: A critical review of underlying assumptions. *International Journal of Management Reviews*, 21(1), 24–49.
- del Moral-Espín, L., & Fernández-García, M. (2018). Moving beyond dichotomies? The Collaborative Economy scene in Andalusia and the role of public actors in shaping it. *The Sociological Review*, 66(2), 401–424.
- Demircioglu, M. A., & Vivona, R. (2021). Depoliticizing the European immigration debate: How to employ public sector innovation to integrate migrants. *Research Policy*, 50(2), 104150.
- Demircioglu, M. A., Chowdhury, F., & Vivona, R. (2020). *Public sector entrepreneurship*. Springer Verlag.
- Demircioglu, M. A., & Chowdhury, F. (2021). Entrepreneurship in public organizations: The role of leadership behavior. *Small Business Economics*, 57, 1107–1123.
- Demircioglu, M. A., Hameduddin, T., & Knox, C. (2023). Innovative work behaviors and networking across government. *International Review of Administrative Sciences*, 89(1), 145–164.
- Demircioglu, M. A. (2023). Public sector innovation: Sources, benefits, and leadership. *International Public Management Journal*, 27(2), 190–220.
- Denhardt, R. B., & Denhardt, J. V. (2000). The new public service: Serving rather than steering. *Public administration review*, 60(6), 549–559.
- Deslatte, A., & Swann, W. L. (2020). Elucidating the linkages between entrepreneurial orientation and local government sustainability performance. *The American Review of Public Administration*, 50(1), 92–109.
- Deslatte, A., Swann, W. L., & Feiock, R. C. (2021). Performance, satisfaction, or loss aversion? A meso–micro assessment of local commitments to sustainability programs. *Journal of Public Administration Research and Theory*, 31(1), 201–217.

- Du Gay, P. (2004). Against 'Enterprise'(but not against 'enterprise', for that would make no sense). *Organization*, 11(1), 37-57.
- Ewens, H., & van der Voet, J. (2019). Organizational complexity and participatory innovation: Participatory budgeting in local government. *Public Management Review*, 21(12), 1848-1866.
- Farè, L., Audretsch, D. B., & Dejardin, M. (2023). Does democracy foster entrepreneurship? *Small Business Economics*, 61(4), 1461-1495.
- Farmer, S. (2011). Uneven public transportation development in neoliberalizing Chicago, USA. *Environment and Planning A*, 43(5), 1154-1172.
- Feeney, M. K., & Langer, J. (2016). Getting ahead in the public sector: Perceptions of managers in US municipalities. *The American Review of Public Administration*, 46(6), 683-699.
- Fisher, R., Maritz, A., & Lobo, A. (2016). Does individual resilience influence entrepreneurial success. *Academy of Entrepreneurship Journal*, 22(2), 39-53.
- Floyd, S. W., & Wooldridge, B. (1999). Knowledge creation and social networks in corporate entrepreneurship: The renewal of organizational capability. *Entrepreneurship Theory and Practice*, 23(3), 123-144.
- Ford, M. R., & Andersson, F. O. (2017). Determinants of organizational performance in a reinventing government setting: Evidence from the Milwaukee school voucher programme. *Public Management Review*, 19(10), 1519-1537.
- *Fraser, A., Knoll, L., & Hevenstone, D. (2022). Contested social impact bonds: Welfare conventions, conflicts and compromises in five European active-labor market programs. *International Public Management Journal*, 1-18.
- *Gicheva, D., & Link, A. N. (2022). Public sector entrepreneurship, politics, and innovation. *Small Business Economics*, 59(2), 565-572.
- Gil López, Á., & San Román, E. (2021). Emprendimiento público y privado en la configuración del transporte urgente español.
- Grimm, H. M., & Bock, C. L. (2022). Entrepreneurship in public administration and public policy programs in Germany and the United States. *Teaching Public Administration*, 40(3), 322-353.
- Guenduez, A. A., & Mettler, T. (2023). Strategically constructed narratives on artificial intelligence: What stories are told in governmental artificial intelligence policies? *Government Information Quarterly*, 40(1), 101719.
- Gullmark, P., & Clausen, T. H. (2023). In search of innovation capability and its sources in local government organizations: A critical interpretative synthesis of the literature. *International Public Management Journal*, 26(2), 258-280.
- Gullmark, P. (2021). Do all roads lead to innovativeness? A study of public sector organizations' innovation capabilities. *The American Review of Public Administration*, 51(7), 509-525.
- Guth, W. D., & Ginsberg, A. (1990). Guest editors' introduction: Corporate entrepreneurship. *Strategic Management Journal*, 5-15.
- Hartley, J., Sørensen, E., & Torfing, J. (2013). Collaborative innovation: A viable alternative to market competition and organizational entrepreneurship. *Public Administration Review*, 73(6), 821-830.
- Hartley, J., Alford, J., Hughes, O., & Yates, S. (2015). Public value and political astuteness in the work of public managers: The art of the possible. *Public Administration*, 93(1), 195-211.
- Hayter, C. S., Link, A. N., & Scott, J. T. (2018). Public-sector entrepreneurship. *Oxford Review of Economic Policy*, 34(4), 676-694.
- Hisrich, R. D., & Al-Dabbagh, A. (2012). *Governpreneurship: Establishing a thriving entrepreneurial spirit in government*. Edward Elgar Publishing. <https://doi.org/10.4337/9781781951637>
- Hodgson, D. E., Bailey, S., Exworthy, M., Bresnen, M., Has-sard, J., & Hyde, P. (2022). On the character of the new entrepreneurial National Health Service in England: Reforming health care from within?. *Public Administration*, 100(2), 338-355.
- Höglund, L., Holmgren Caicedo, M., & Mårtensson, M. (2018). A balance of strategic management and entrepreneurship practices—The renewal journey of the Swedish Public Employment Service. *Financial Accountability & Management*, 34(4), 354-366.
- Holcombe, R. G. (2002). Political entrepreneurship and the democratic allocation of economic resources. *The Review of Austrian Economics*, 15, 143-159.
- Honingh, M., & Karsten, S. (2007). Marketization in the Dutch vocational education and training sector: Hybrids and their behaviour. *Public Management Review*, 9(1), 135-143.
- Hood, C. (1991). A public management for all seasons? *Public Administration*, 69(1), 3-19.
- Hughes, J. (1991). Public sector entrepreneurship. In P. Higonnet, D. S. Landes, and H. Rosovsky (Eds.), *Favorites of Fortune: Technology, Growth, and Economic Development since the Industrial Revolution*. (pp. 297-321). Cambridge, MA, Harvard University Press.
- Jones, P. (1978). The appeal of the political entrepreneur. *British Journal of Political Science*, 8(4), 498-504.
- Jordan, S. R. (2014). The innovation imperative: An analysis of the ethics of the imperative to innovate in public sector service delivery. *Public Management Review*, 16(1), 67-89.
- Kane, J., & Patapan, H. (2006). In search of prudence: The hidden problem of managerial reform. *Public Administration Review*, 66(5), 711-724.
- Kearney, C., Hisrich, R., & Roche, F. (2008). A conceptual model of public sector corporate entrepreneurship. *International Entrepreneurship and Management Journal*, 4, 295-313.
- Kearney, C., & Meynhardt, T. (2016). Directing corporate entrepreneurship strategy in the public sector to public value: Antecedents, components, and outcomes. *International Public Management Journal*, 19(4), 543-572.
- Kearney, C., & Morris, M. H. (2015). Strategic renewal as a mediator of environmental effects on public sector performance. *Small Business Economics*, 45, 425-445.
- Kingdon, J. W. (1984). *Agenda, alternatives, and public policies*. Longman.
- Kirchheimer, D. W. (1989). Public entrepreneurship & subnational government. *Polity*, 22, 108-122.

- Klein, P. G., Mahoney, J. T., McGahan, A. M., & Pitelis, C. N. (2010). Toward a theory of public entrepreneurship. *European management review*, 7(1), 1-15.
- Klein, P. G., Mahoney, J. T., McGahan, A. M., & Pitelis, C. N. (2013). Capabilities and strategic entrepreneurship in public organizations. *Strategic Entrepreneurship Journal*, 7(1), 70-91.
- Korber, S., & McNaughton, R. B. (2017). Resilience and entrepreneurship: A systematic literature review. *International Journal of Entrepreneurial Behavior & Research*, 24(7), 1129-1154.
- Kurtmollaiev, S., Pedersen, P. E., & Lie, T. (2023). A bird in the hand: Empirically grounded archetypes of collaborative innovation in the public sector. *Public Management Review*, 1-33.
- Lamberty, J., & Nevers, J. (2022). The entrepreneurial state in action: The Danish robotics cluster and the role of the public sector. *Enterprise & Society*, 23(1), 68-98.
- Lapuenta, V., & Suzuki, K. (2021). The prudent entrepreneurs: Women and public sector innovation. *Journal of European Public Policy*, 28(9), 1345-1371.
- Leleux, B., & Surlmont, B. (2003). Public versus private venture capital: Seeding or crowding out? A pan-European analysis. *Journal of Business Venturing*, 18(1), 81-104.
- Lewis, J. M., Ricard, L. M., & Klijn, E. H. (2018). How innovation drivers, networking and leadership shape public sector innovation capacity. *International Review of Administrative Sciences*, 84(2), 288-307.
- Leyden, D. P., & Link, A. N. (2015). *Public sector entrepreneurship: US technology and innovation policy*. OUP Us. <https://doi.org/10.1093/acprof:oso/9780199313853.001.0001>
- Leyden, D. P. (2016). Public-sector entrepreneurship and the creation of a sustainable innovative economy. *Small business economics*, 46, 553-564.
- Liddle, J., & McElwee, G. (2019). Theoretical perspectives on public entrepreneurship. *International Journal of Entrepreneurial Behavior & Research*, 25(6), 1308-1320.
- Lim, J. H., & Tang, S. Y. (2008). Urban e-government initiatives and environmental decision performance in Korea. *Journal of Public Administration Research and Theory*, 18(1), 109-138.
- Link, A. N., & Link, J. R. (2009). *Government as entrepreneur*. Oxford University Press.
- Llewellyn, N., & Jones, G. (2003). Controversies and conceptual development examining public entrepreneurship. *Public Management Review*, 5(2), 245-266.
- Llewellyn, N., Lewis, P., & Woods, A. (2007). Public management and the expansion of an entrepreneurial ethos?. *Public Management Review*, 9(2), 253-267.
- Luke, B., Kearins, K., & Verreyne, M. L. (2011). Developing a conceptual framework of strategic entrepreneurship. *International Journal of Entrepreneurial Behavior & Research*, 17(3), 314-337.
- Lunt, N., Exworthy, M., Hanefeld, J., & Smith, R. D. (2015). International patients within the NHS: A case of public sector entrepreneurialism. *Social Science & Medicine*, 124, 338-345.
- Mallett, O., Wapshott, R., & Vorley, T. (2019). How do regulations affect SMEs? A review of the qualitative evidence and a research agenda. *International Journal of Management Reviews*, 21(3), 294-316.
- Marcussen, M., & Kaspersen, L. B. (2007). Globalization and institutional competitiveness. *Regulation & Governance*, 1(3), 183-196.
- Mattei, P. (2006). The enterprise formula, new public management and the Italian health care system: Remedy or contagion?. *Public Administration*, 84(4), 1007-1027.
- Mazzucato, M., & Robinson, D. K. (2018). Co-creating and directing Innovation Ecosystems? NASA's changing approach to public-private partnerships in low-earth orbit. *Technological Forecasting and Social Change*, 136, 166-177.
- McGuirk, P., Baker, T., Sisson, A., Dowling, R., & Maalsen, S. (2022). Innovating urban governance: A research agenda. *Progress in Human Geography*, 46(6), 1391-1412.
- Meynhardt, T., & Diefenbach, F. E. (2012). What drives entrepreneurial orientation in the public sector? Evidence from Germany's federal labor agency. *Journal of Public Administration Research and Theory*, 22(4), 761-792.
- Miao, Q., Newman, A., Schwarz, G., & Cooper, B. (2018). How leadership and public service motivation enhance innovative behavior. *Public Administration Review*, 78(1), 71-81.
- Mitchell, J. (2001). Business improvement districts and the management of innovation. *The American Review of Public Administration*, 31(2), 201-217.
- Moon, M. J., & DeLeon, P. (2001). Municipal reinvention: Managerial values and diffusion among municipalities. *Journal of Public Administration Research and Theory*, 11(3), 327-352.
- Moon, M. J. (1999). The pursuit of managerial entrepreneurship: Does organization matter?. *Public Administration Review*, 59(1), 31-43.
- Morales, J., Gendron, Y., & Guénin-Paracini, H. (2014). State privatization and the unrelenting expansion of neoliberalism: The case of the Greek financial crisis. *Critical Perspectives on Accounting*, 25(6), 423-445.
- Morris, M. H., & Jones, F. F. (1999). Entrepreneurship in established organizations: The case of the public sector. *Entrepreneurship theory and practice*, 24(1), 71-91.
- Naldi, L., Larsson, J. P., & Westlund, H. (2020). Policy entrepreneurship and entrepreneurial orientation in vulnerable Swedish municipalities. *Entrepreneurship & Regional Development*, 32(7-8), 473-491.
- Nay, O. (2011). What drives reforms in international organizations? External pressure and bureaucratic entrepreneurs in the UN response to AIDS. *Governance*, 24(4), 689-712.
- Oakerson, R. J., & Parks, R. B. (1988). Citizen voice and public entrepreneurship: The organizational dynamic of a complex metropolitan county. *Publius: The Journal of Federalism*, 18(4), 91-112.
- Ongaro, E., & Ferlie, E. (2020). Strategic Management in public organizations: Profiling the public entrepreneur as strategist. *The American Review of Public Administration*, 50(4-5), 360-374.
- Osborne, D., & Gaebler, T. (1992). *Reinventing government: How the entrepreneurial spirit is transforming the public sector*. Addison-Wesley.
- Ostrom, E. (1965). *Public entrepreneurship: A case study in ground water basin management*. University of California.

- Ostrom, E. (2005). *Unlocking public entrepreneurship and public economies* (No. 2005/01). WIDER Discussion Paper.
- Padt, F. J., & Luloff, A. E. (2011). A critical review of a managerial approach to 'green' community planning in the rural USA and the Netherlands. *Journal of environmental planning and management*, 54(4), 445–456.
- Page, S. (2003). Entrepreneurial strategies for managing interagency collaboration. *Journal of Public Administration Research and Theory*, 13(3), 311–339.
- Pallesen, E. (2018). Creativity, play and listening: An auditory re-conceptualization of entrepreneurial creation in the context of new public management. *Organization Studies*, 39(2-3), 191–207.
- Perlmutter, F. D., & Cnaan, R. A. (1995). Entrepreneurship in the public sector: The horns of a dilemma. *Public Administration Review*, 55(1), 29–36.
- Plimmer, G., Berman, E. M., Malinen, S., Franken, E., Naswall, K., Kuntz, J., & Löfgren, K. (2022). Resilience in public sector managers. *Review of Public Personnel Administration*, 42(2), 338–367.
- Posner, B. G., & Rothstein, L. R. (1994). Reinventing the business of government: An interview with change catalyst David Osborne. *Harvard Business Review*, 72(3), 132–143.
- Prince, M. J. (2000). Banishing bureaucracy or hatching a hybrid? The Canadian Food Inspection Agency and the Politics of Reinventing Government. *Governance*, 13(2), 215–232.
- Ramamurti, R. (1986). Public entrepreneurs: Who they are and how they operate. *California Management Review*, 28(3), 142–158.
- Ring, P. S., & Perry, J. L. (1985). Strategic management in public and private organizations: Implications of distinctive contexts and constraints. *Academy of Management Review*, 10(2), 276–286.
- Roberts, N. C. (1992). Public entrepreneurship and innovation. *Review of Policy Research*, 11(1), 55–74.
- Sadler, R. J. (2000). Corporate entrepreneurship in the public sector: the dance of the chameleon. *Australian journal of public Administration*, 59(2), 25–43.
- Sanger, M. B., & Levin, M. A. (1992). Using old stuff in new ways: Innovation as a case of evolutionary tinkering. *Journal of Policy Analysis and management*, 11(1), 88–115.
- Schmitt, A., Raisch, S., & Volberda, H. W. (2018). Strategic renewal: Past research, theoretical tensions and future challenges. *International Journal of Management Reviews*, 20(1), 81–98.
- Schneider, M., & Teske, P. (1992). Toward a theory of the political entrepreneur: Evidence from local government. *American Political Science Review*, 86(3), 737–747.
- Schnellenbach, J. (2007). Public entrepreneurship and the economics of reform. *Journal of Institutional Economics*, 3(2), 183–202.
- Scott, T. J., & Vonortas, N. S. (2021). Microgravity protein crystallization for drug development: A bold example of public sector entrepreneurship. *The Journal of Technology Transfer*, 46, 1442–1461.
- Shockley, G. E., Stough, R. R., Haynes, K. E., & Frank, P. M. (2006). Toward a theory of public sector entrepreneurship. *International Journal of Entrepreneurship and Innovation Management*, 6(3), 205–223.
- Singla, A., Stritch, J. M., & Feeney, M. K. (2018). Constrained or creative? Changes in financial condition and entrepreneurial orientation in public organizations. *Public Administration*, 96(4), 769–786.
- Smith, E., & Umans, T. (2015). Organizational ambidexterity at the local government level: The effects of managerial focus. *Public Management Review*, 17(6), 812–833.
- Smith, M. J. (2011). Tsars, leadership and innovation in the public sector. *Policy & Politics*, 39(3), 343–359.
- Smith, E. (2014). Entrepreneurship at the Local Government Level: Stimulating and restraining forces in the Swedish waste management industry. *Public Management Review*, 16(5), 708–732.
- Sørensen, E., & Torfing, J. (2017). Metagoverning collaborative innovation in governance networks. *The American Review of Public Administration*, 47(7), 826–839.
- Stevenson, H. H. (1983). *A perspective on entrepreneurship* (Vol. 13). Harvard Business School.
- Sundin, E. (2011). Entrepreneurship and the reorganization of the public sector: A gendered story. *Economic and Industrial Democracy*, 32(4), 631–653.
- Sutheewasinnon, P., Hoque, Z., & Nyamori, R. O. (2016). Development of a performance management system in the Thailand public sector: Isomorphism and the role and strategies of institutional entrepreneurs. *Critical Perspectives on Accounting*, 40, 26–44.
- Swann, W. L. (2017). Modelling the relationship between entrepreneurial orientation, organizational integration, and programme performance in local sustainability. *Public Management Review*, 19(4), 542–565.
- Tajeddini, K., & Trueman, M. (2016). Environment-strategy and alignment in a restricted, transitional economy: Empirical research on its application to Iranian state-owned enterprises. *Long Range Planning*, 49(5), 570–583.
- Taşan-Kok, T., & Özogul, S. (2021). Fragmented governance architectures underlying residential property production in Amsterdam. *Environment and Planning A: Economy and Space*, 53(6), 1314–1330.
- Tassabehji, R., Hackney, R., & Popovič, A. (2016). Emergent digital era governance: Enacting the role of the 'institutional entrepreneur' in transformational change. *Government Information Quarterly*, 33(2), 223–236.
- Terry, L. D. (1998). Administrative leadership, neo-managerialism, and the public management movement. *Public Administration Review*, 58(3), 194–200.
- Thomas, J., & Harden, A. (2008). Methods for the thematic synthesis of qualitative research in systematic reviews. *BMC Medical Research Methodology*, 8(1), 1–10.
- Torfing, J. (2019). Collaborative innovation in the public sector: The argument. *Public management review*, 21(1), 1–11.
- Tremml, T. (2021). Barriers to entrepreneurship in public enterprises: Boards contributing to inertia. *Public Management Review*, 23(10), 1527–1552.
- van der Scheer, W. (2007). Is the new health-care executive an entrepreneur?. *Public Management Review*, 9(1), 49–65.

- Van Wart, M. (2003). Public-sector leadership theory: An assessment. *Public administration review*, 63(2), 214–228.
- Vigoda, E. (2000). Are you being served? The responsiveness of public administration to citizens' demands: An empirical examination in Israel. *Public administration*, 78(1), 165–191.
- Vivona, R., Demircioglu, M. A., & Audretsch, D. B. (2023). The costs of collaborative innovation. *The Journal of Technology Transfer*, 48(3), 873–899.
- Vivona, R., & Lewis, J. M. (2023). The entrepreneurial public servant: Unlocking employee potential through recognition and inclusion. *Review of Public Personnel Administration*, 0734371X231201963. <https://doi.org/10.1177/0734371X231201963>
- Vivona, R. (2023). The new era leadership for the public sector? Entrepreneurship, effectiveness, and democracy. *Public Management Review*, 1–17.
- Wagner, R. E. (1966). Pressure groups and political entrepreneurs: A review article. *Public Choice*, 1(1), 161–170.
- Warner, M., & Hebdon, R. (2001). Local government restructuring: Privatization and its alternatives. *Journal of Policy Analysis and Management: The Journal of the Association for Public Policy Analysis and Management*, 20(2), 315–336.
- Welter, F. (2011). Contextualizing entrepreneurship—conceptual challenges and ways forward. *Entrepreneurship theory and Practice*, 35(1), 165–184.
- Welter, F., Xheneti, M., & Smallbone, D. (2018). Entrepreneurial resourcefulness in unstable institutional contexts: The example of European Union borderlands. *Strategic Entrepreneurship Journal*, 12(1), 23–53.
- Whynes, D. K., Ennew, C. T., & Feighan, T. (1999). Entrepreneurial attitudes of primary health care physicians in the United Kingdom. *Journal of Economic Behavior & Organization*, 38(3), 331–347.
- Wiredu, G. O. (2012). Information systems innovation in public organisations: An institutional perspective. *Information Technology & People*, 25(2), 188–206.
- Xing, Y., Liu, Y., & Cooper, S. C. L. (2018). Local government as institutional entrepreneur: Public–private collaborative partnerships in fostering regional entrepreneurship. *British Journal of Management*, 29(4), 670–690.
- Zampetakis, L. A., & Moustakis, V. (2007). Entrepreneurial behaviour in the Greek public sector. *International Journal of Entrepreneurial Behavior & Research*, 13(1), 19–38.
- Zandberg, T., & Morales, F. N. (2019). Public managers' networking and innovative work behavior: The importance of career incentives. *International Review of Administrative Sciences*, 85(2), 286–303.
- Zerbinati, S., & Souitaris, V. (2005). Entrepreneurship in the public sector: A framework of analysis in European local governments. *Entrepreneurship & regional development*, 17(1), 43–64.

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