

# ***Corporate Entrepreneurship in the Public Sector: Exploring the Peculiarities of Public Enterprises***

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## Summary of the dissertation

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Entrepreneurship is predominantly treated as a private-sector phenomenon and consequently its increasing importance in the public sector goes largely unremarked. That impedes the research field of entrepreneurship being capable of spanning multiple sectors. Accordingly, recent research calls for the study of corporate entrepreneurship (CE) as it manifests in the public sector where it can be labeled public entrepreneurship (PE). This dissertation considers government an essential entrepreneurial actor and is led by the central research question: *What are the peculiarities of the public sector and how do they impact public enterprises' entrepreneurial orientation (EO)?*

Accordingly, this dissertation includes three studies focusing on public enterprises. Two of the studies set the scope of this thesis by investigating a specific type of organization in a specific context—German majority-government-owned energy suppliers. These enterprises operate in a liberalized market experiencing environmental uncertainties like competitiveness and business transformation.

The aims and results of the studies included in this dissertation can be summarized as follows: The *systematic literature review* illuminates the stimuli of and barriers to entrepreneurial activities in public enterprises and the potential outcomes of such activities discussed so far. The review reveals that research on EO has tended to focus on the private sector and consequently that barriers to and outcomes of entrepreneurial activities in the public sector remain under-researched. Building on these findings, the *qualitative study* focuses on the interrelated barriers affecting entrepreneurship in public enterprises and the outcomes of entrepreneurial activities being inhibited. The study adopts an explorative comparative causal mapping approach to address the above-mentioned research goal and the lack of clarity around how barriers identified in the public sphere are interrelated. Furthermore, the study bases its investigation on the different business segments of sales (competitive market) and the distribution grid (natural monopoly) to account for recent calls for fine-grained research on PE. Results were compared with prior findings in the public and private sector. That comparison indicates that the barriers revealed align with aspects discussed in prior research findings

relating to both sectors. Examples include barriers associated with the external environment such as legal constraints and barriers originating from within the organization such as employee behavior linked to a value system that hampers entrepreneurial action. However, the most important finding is that a public enterprise's supervisory board can hinder its progress, a finding running counter to those of previous private-sector research and one that underscores the widespread prejudice that the involvement of a public shareholder and its nominated board of directors has a negative effect on EO. The third study is *quantitative* (data collection via a questionnaire) and builds on both its predecessors to examine the little understood topic of board behavior and public enterprises' social orientation as predictors of EO. The study's results indicate that social orientation represses EO, whereas board strategy control (BSC) does not seem to predict EO. Regarding BSC, we find that the local government owners in our sample are less involved in BSC. The third study also examines board networking and finds its relationship with EO depends on the ownership structure of the public-sector organization. An important finding is that minority shareholders, such as majority privately-owned enterprises and hub firms, repress EO when engaging in board networking.

In summary, this doctoral thesis contributes to the under-researched topic of CE in the public sector. It investigates the peculiarities of this sector by focusing on the supervisory board and social oriented activities and their impact on the enterprise's EO in the quantitative study. The thesis addresses institutional questions regarding ownership and the last study in particular contributes to expanding resource dependence theory, and invites a nuanced perspective: The original perspective suggests that interorganizational arrangements like interfirm network ties and equity holdings reduce external resource dependency and consequently improve firm performance. The findings within this thesis expose resource delivery to potential contrary effects to extend the understanding of interorganizational action with important implications for practice.

## Zusammenfassung der Dissertation

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Unternehmertum wird vornehmlich als privatwirtschaftliches Phänomen behandelt. Folglich bleibt dessen zunehmende Bedeutung im öffentlichen Sektor weitgehend unbemerkt. Dementsprechend fordert die Forschung die Untersuchung von Corporate Entrepreneurship (CE) im öffentlichen Sektor, wo es als Public Entrepreneurship (PE) bezeichnet wird. Diese Dissertation betrachtet den Staat als wesentlichen unternehmerischen Akteur und wird von der zentralen Forschungsfrage geleitet: *Was sind die Besonderheiten des öffentlichen Sektors und wie wirken sie sich auf die unternehmerische Orientierung (EO) öffentlicher Unternehmen aus?*

Diese Dissertation umfasst drei Studien, die sich auf öffentliche Unternehmen konzentrieren. Zwei der Studien untersuchen deutsche Energieversorger im mehrheitlichen Besitz der öffentlichen Hand. Damit geben sie den Rahmen der Dissertation vor. Diese Unternehmen agieren in einem liberalisierten Markt, wo sie mit Unsicherheiten wie zunehmendem Wettbewerb konfrontiert werden, wodurch ein Unternehmenswandel unabdingbar wird.

Die Ziele und Ergebnisse der drei Studien lassen sich wie folgt zusammenfassen: Der *systematische Literaturüberblick* beleuchtet die beeinflussenden Faktoren sowie die Effekte unternehmerischer Aktivitäten in öffentlichen Unternehmen. Diese Überblicksstudie des aktuellen Forschungsstands zeigt, dass sich die EO-Forschung eher auf den privaten Sektor konzentriert hat und dass die Hindernisse und Ergebnisse unternehmerischer Aktivitäten im öffentlichen Sektor zu wenig erforscht sind. Darauf aufbauend konzentriert sich die *qualitative Studie* auf die Barrieren, die das Unternehmertum in öffentlichen Unternehmen beeinträchtigen, und darauf, was aus einem gehemmten Unternehmertum resultiert. Die Studie wendet die Comparative Causal Mapping Methode an, um das o. g. Forschungsziel zu verfolgen und Unklarheiten zu beseitigen, wie die identifizierten Barrieren zusammenhängen. Die Studie stützt ihre Untersuchung auf zwei Teilbereiche des Energiemarktes – einen wettbewerblichen (Vertrieb) und einen durch natürliche Monopole gekennzeichneten (Verteilnetz) – um den Forderungen nach einer „feinkörnigen“ PE-Forschung nachzukommen. Die Ergebnisse wurden mit bisherigen Erkenntnissen im öffentlichen und privaten Sektor verglichen. Dieser Vergleich

zeigt, dass die aufgedeckten Barrieren mit Aspekten aus früheren Arbeiten übereinstimmen. Dazu gehören Barrieren, die dem externen Umfeld entstammen, wie z. B. der vorherrschende Rechtsrahmen, und Barrieren, die aus dem Inneren der Organisation stammen, wie z. B. das Verhalten der Mitarbeiter. Der wichtigste Befund ist jedoch, dass der Aufsichtsrat eines öffentlichen Unternehmens dessen unternehmerischen Fortschritt behindern kann. Diese Erkenntnis läuft den Ergebnissen früherer Forschung mit Fokus auf den privaten Sektor zuwider und unterstreicht das verbreitete Vorurteil, dass sich das Mitwirken des öffentlichen Anteilseigners/Aufsichtsrats negativ auf die EO auswirken kann. Die *quantitative Studie* (Datenerhebung via Fragebogen) baut auf beiden o. g. Studien auf. Sie fokussiert auf das Verhalten des Aufsichtsrats und die soziale Orientierung des Unternehmens im Hinblick auf deren Auswirkungen auf die EO des Unternehmens. Die Studienergebnisse deuten darauf hin, dass die soziale Orientierung die EO mindert, während die Beteiligung des Aufsichtsrats an der Kontrolle auf strategischer Ebene (Board Strategy Control [BSC]) die EO nicht vorhersagt. Was die BSC betrifft, so wird deutlich, dass die lokalen öffentlichen Eigentümer weniger stark an der BSC beteiligt sind. Die Studie betrachtet auch die „Vernetzung“ der Aufsichtsräte (Board Networking). Demnach hängt der Einfluss von Board Networking auf die EO von der Eigentümerstruktur ab. In diesem Zusammenhang ist bedeutsam, dass Minderheitsgesellschaften, wie z. B. mehrheitlich in Privatbesitz befindliche Unternehmen, die EO vermindern, wenn sie Board Networking betreiben.

Zusammenfassend lässt sich sagen, dass diese Dissertation einen Beitrag zum wenig erforschten Thema „CE im öffentlichen Sektor“ leistet. Sie untersucht die Besonderheiten dieses Sektors, indem sie sich v. a. in der quantitativen Studie auf den Aufsichtsrat und die soziale Orientierung sowie deren beider Auswirkungen auf die EO konzentriert. Insbesondere diese Studie trägt zur Erweiterung der Resource Dependence Theorie bei: Diese legt nahe, dass Verbindungen zwischen Unternehmen (z. B. über Netzwerke und Beteiligungsverhältnisse) die Abhängigkeit von externen Ressourcen verringern und damit die Unternehmensleistung erhöhen. Die Ergebnisse der vorliegenden Arbeit zeigen potentiell konträre Effekte und verbessern das Verständnis derartiger Verbindungen mit wichtigen Implikationen für die Praxis.

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## List of abbreviations

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AVE	average variance extracted
BoD	board of directors
BSC	board strategy control
CA	Cronbach's alpha
CCM	comparative causal mapping
CE	corporate entrepreneurship
CEO	chief executive officer
CMB	common method bias
CR	composite reliability
EO	entrepreneurial orientation
IF	Impact Factor
JCR	Thomson Reuters Journal Citation Reports
NIE	new institutional economics
NPG	new public governance
NPM	new public management
OECD	Organisation for Economic Co-operation and Development
PCG	public corporate governance
PE	public entrepreneurship
PLS	partial least squares
Q <sup>2</sup>	Stone-Geisser-Criterion
RDT	resource dependence theory
SAT	stakeholder-agency theory
SD	standard deviation
SEM	structural equation modeling
SJR	SCImago Journal Rank
SLR	systematic literature review
TMT	top management team

UN

United Nations

# 1. Introduction

---

In recent decades the public sector has been subject to multiple reforms aiming to improve performance by targeting areas like efficiency and public value (Swann, 2017). However, public enterprises are still described as the organizational type most resistant to change (Millward, 2011) and as being the most subject to political interference, factors that are blamed for the low performance levels of public enterprises compared to those of private firms (Cuervo & Villalonga, 2000; Shleifer & Vishny, 1994). Following this line of argumentation, the public sector in general is described as being “incompatible with manifestations of entrepreneurialism” (Bernier, 2014, p. 258) and empirical results suggest that the strategic posture of entrepreneurial orientation (EO) might still be at a lower level in publicly owned organizations than in their private and non-profit counterparts (Hinz & Ingerfurth, 2013). It is therefore unsurprising that most of the general public associate the term *entrepreneurship* with heroic individuals or innovative private-sector corporates disrupting whole branches of commerce. Similarly in research, entrepreneurship is predominantly a private-sector phenomenon (Liddle & McElwee, 2019). Unfortunately, the increasing importance of EO in the public sphere remains mainly unremarked (Kraus et al., 2019; Meynhardt & Diefenbach, 2012), even though the public sector is critically relevant as an entrepreneurial actor (Mazzucato, 2018): its enterprises generate approximately 10% of world gross domestic product and more than one tenth of the world’s largest corporates are state owned (Bruton et al., 2015). Alongside their economic impact, those public-sector enterprises contribute significantly to modern society in terms of guaranteeing and improving public value (Swann, 2017).

The overarching purpose of this dissertation is to contribute to the under-researched topic of entrepreneurship in the public sector. It does so by revealing unknown stimulators of and barriers to entrepreneurial activities in public enterprises while simultaneously underscoring governments’ importance as an essential entrepreneurial actor. The dissertation accordingly comprises three interrelated and consecutive studies. Before presenting the individual studies, the remainder of this introduction section is structured as follows. *First*, the

phenomenon of entrepreneurship in a public-sector context will be discussed. *Second*, the purpose and scope of this dissertation will be presented. *Third*, the structure and key results of this dissertation are presented via its research framework (Figure 1) and an overview of the conducted studies with their key results in Table 1.

### ***1.1 Embedding corporate entrepreneurship in the public sector***

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To counteract the limited recognition of government as an essential entrepreneurial actor, discussions about public enterprises have recently been reinvigorated (Bernier & Reeves, 2018; Papenfuß & Keppeler, 2020). Unfortunately, knowledge remains severely limited. While early research in the 1980s defined public enterprises as monopolistic administrative entities (Florio, 2014), research today is clear that they are far more profit-oriented than in the past or are even expected to generate profit as if they operate in the private sector (Bernier, 2011, 2014). In this dissertation, they are defined as being majority owned by government and are a separate legal entity. Therefore, citizens are the ultimate (co-)owners of public enterprises (Blankart, 1983). Furthermore, these enterprises compete in a liberalized market environment and have a profit orientation, but have also other, non-financial objectives, such as social responsibilities in terms of the provision of services of general interest, which can be understood as the provision of a sufficient number of goods and services that are indispensable for life, such as energy supply, public transport, and waste management in an affordable manner to all citizens, regardless of whether doing so is profitable for the public enterprise (Mühlemeier, 2019; Neumeier, 2015).

In this context, it is important to note that the public sector itself remains incompletely described and demarcated in the literature. Even though research is gradually presenting a clearer picture of what public enterprises are, the public sector is commonly described as a uniform monopolistic entity with a focus on academic institutions and monopolistic governmental organizations (Bernier, 2014; Papenfuß & Keppeler, 2020) despite the manifold variants of public organizations (Liddle & McElwee, 2019). This depiction seems even less adequate given the entrepreneurship-related differences between public enterprises and other

public administration entities that have already been revealed (Morris & Jones, 1999; Smith, 2012, 2014).

Broadly speaking, entrepreneurship deals with the recognition and exploitation of profitable opportunities (Shane & Venkataraman, 2000). Even though the common understanding of public enterprises is that they also have an explicit profit orientation (among other objectives) (Bernier, 2014), this dissertation stresses a broader perspective on entrepreneurship in arguing that profitable opportunities cannot simply be equated with value creation for the private sector/individual in terms of monetary gains but with “simply superior ways of doing things” (Klein et al., 2010, p. 3). This opens up entrepreneurship for various areas such as the political sphere (Ramamurti, 1986), socially-oriented entrepreneurs (Brändle et al., 2019), creative artists (Schulte-Holthaus, 2018), and ecological start-ups (Kuckertz et al., 2019). Following this line of argumentation, the different concepts of entrepreneurship are also adaptable and meaningful in the public sphere (Klein et al., 2010; Ramamurti, 1986) such as the creation or discovery of opportunities (Kirzner, 1973), the introduction of new products and processes with potentially disruptive characteristics (Schumpeter, 1934), and decision-making on investments under uncertainty (Knight, 1921) (see also Klein et al., 2010).

Nevertheless, the phenomenon of entrepreneurship is mostly associated with private-sector corporates (Liddle & McElwee, 2019; Smith, 2012), yet this dissertation is inspired by the importance of government as an essential entrepreneurial actor (Mazzucato, 2018) and is therefore led by the idea of embedding corporate entrepreneurship (CE) in the public sector. CE deals with entrepreneurial activities within established organizations (Covin & Slevin, 1991; Zahra & Covin, 1995). This dissertation builds on the classic definition of CE by Miller (1983, p. 771): “An entrepreneurial firm is one that engages in product-market innovation, undertakes somewhat risky ventures, and is *first* to come up with ‘proactive’ innovations, beating competitors to the punch.” (for an overview of definitions of CE, see also Arz, 2017). Building on prior studies in the field (e.g., Bernier, 2014; Smith, 2012, 2014), this dissertation focuses on public-sector organizations that are embedded in the literature stream of public entrepreneurship (PE). Generally speaking, PE is described as if it fundamentally resembles entrepreneurship in traditional corporations (Bernier, 2014; Morris & Jones, 1999),



at least regarding its “definition, process nature, and underlying dimensions” (Morris et al., 2011, p. 147). Accordingly, this dissertation defines public entrepreneurship as all entrepreneurial activity, thus encompassing innovative, proactive, and risk-taking activities within public-sector organizations.

Therefore, the essence of CE in the public sector is (also) captured through the dimensions of EO (Dess & Lumpkin, 2005; Zahra & Covin, 1995). Having its roots in the strategy-making literature, EO is a firm-level posture (Covin & Slevin, 1989; Miller, 1983) and as such describes the extent to which enterprises corroborate innovativeness and proactiveness with respect to risk-related activities (Covin & Slevin, 1989; Miller, 1983). *Innovativeness* reflects the pursuit of, and ability to produce, innovations (Covin & Miller, 2014). It includes not only the actual amount of new products and services introduced but also extensive changes to product or service lines (Covin & Slevin, 1989). *Proactiveness* reflects being in a market-leading position with respect to the introduction of novel products and being a first-mover instead of simply imitating competitors’ actions (Covin & Slevin, 1989). *Risk-taking* reflects undertaking bold actions with the prospect of high returns instead of taking cautious incremental steps to achieve the firm’s objectives (Covin & Slevin, 1989). By seizing potential opportunities, firms accept the risk of possibly costly incorrect decisions (Covin & Slevin, 1989).

Recent research suggests EO is a form of CE because typically the repetition of entrepreneurial events indicates a high degree of EO (Covin & Wales, 2019). While both concepts are closely related, EO as an organizational *attribute* is a behavioral construct, while CE can be defined as an *activity* within the organization (Covin & Wales, 2019). Entrepreneurial orientation is an indispensable stimulator of organizational performance, be it in the public or private-sector sphere (Caruana et al., 2002; Kearney et al., 2009), as it enhances financial and non-financial performance indicators (Rauch et al., 2009).

Existing entrepreneurship research mainly relies on classic private-sector literature that impedes the theoretical soundness of entrepreneurship as a field of research capable of spanning multiple sectors (Liddle & McElwee, 2019; Smith, 2012). It becomes clear when delimiting the field of PE that little attention is paid to the peculiarities of this specific public-sector context

(e.g., Bernier, 2014; Ramamurti, 1986; Smith, 2014): an example is the inadequate consideration of institutional questions regarding governmental ownership that might reveal obstacles to entrepreneurship that differ from those evident in the private-sector sphere (Bernier, 2014). Suggestions to address these questions regularly refer to political interference, examples being politicians described as the “essence of the problem” (Sørensen, 2007, p. 1046) or public enterprises’ boards of directors (BoD) as hindering the progress of entrepreneurial ideas (Bernier, 2014). Consequently, these suggestions are linked to new institutional economics (NIE). By combining NIE with public choice theory to establish the theoretical framework of new public management (NPM) (Schedler & Proeller, 2011), public enterprises are assumed to perform worse than their private counterparts (e.g., Cuervo & Villalonga, 2000; Martin & Parker, 1997; Shleifer & Vishny, 1994). This is corroborated with empirical results suggesting that the EO might still be at a lower level in publicly owned organizations than in their private and non-profit counterparts (Hinz & Ingerfurth, 2013).

In summary, research on PE remains discordant and dispersed: It even presents conflicting results on whether the classic dimensions of EO are applicable (Bernier, 2014; Kearney et al., 2010; Smith, 2012) and seems to have difficulty in specifying objectives and outcomes in the public sphere (Klein et al., 2010; Liddle & McElwee, 2019), and moreover, discusses whether entrepreneurship might conflict with democratic values (Bellone & Goerl, 1992). Consequently, the existing literature is still not clear about the role of EO in the public sector (Liddle & McElwee, 2019; Morris et al., 2011) and what hinders and fosters it in public enterprises (Meynhardt & Diefenbach, 2012; Smith, 2014). Nevertheless, public enterprises might offer one of the most promising contexts in which to study entrepreneurship in the public sector (Bernier, 2014; Luke & Verreynne, 2006a), contributing to the recognition regarding the important impact of entrepreneurial activity within the public sector (Bruton et al., 2015; Mazzucato, 2018).

## ***1.2 Purpose and scope of the dissertation***

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As the previous sections have outlined, entrepreneurship in the public sector is an essential area for research and practice with fundamental questions remaining to be answered. Accordingly, this dissertation follows the calls to broaden the research stream on corporate entrepreneurship (e.g., Kuratko, 2017; Morris et al., 2011) and contributes to recent efforts to foster the spillover of EO into the public sector (Covin & Wales, 2019; Martens et al., 2016).

High-performing and successful public enterprises can bolster economic systems worldwide (Bruton et al., 2015) and increase the standard of living in every society due to supplying powerful services of general interest (Mühlemeier, 2019). This influence underscores the relevance of understanding government as an essential entrepreneurial actor (Mazzucato, 2018) and embeds the idea of entrepreneurship extending beyond the classic private-sector corporates to energize a high-performing public sector. This dissertation starts from the premise that the entrepreneurial role of government is not solely to enhance and accelerate private-sector growth by implementing effective frameworks and the rules of the game (Klein et al., 2010)<sup>1</sup>. The purpose of this thesis is therefore “to think concretely about how to build ‘entrepreneurial’ organizations within the public sector” (Mazzucato, 2018, p. XIX). Consequently, this dissertation deals with questions regarding governmental ownership and its impact on the strategic posture of EO within public enterprises, which connects to the overarching research question:

*What are the peculiarities of the public sector and how do they impact public enterprises’ EO?*

To contribute to the field of entrepreneurship and address the challenges of public entrepreneurship with the presented overarching research question, this dissertation includes three interrelated and consecutive studies that will be presented in Section 1.3 in further detail. Importantly and with reference to the scope of this thesis, the samples in both empirical studies in Sections 3 and 4 solely include German majority-governmental-owned energy suppliers, answering the recent calls of research to conduct studies on a specific type of organization in a

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<sup>1</sup> Although I admit that this is important for economic actors, e.g., the valuation of start-ups (Berger & Köhn, 2020).

specific context (Lomberg et al., 2017; Miller, 2011). This may confine generalizability but may help to increase the validity of the research findings as it clearly defines the sample's boundaries (Miller, 2011). Such an approach is especially useful in public-sector research that commonly but inadequately defines the public sector as a monopolistic entity that is relatively independent of external influences (Liddle & McElwee, 2019), despite research revealing remarkable differences between public-sector organizations regarding entrepreneurial activities (Morris & Jones, 1999; Smith, 2012, 2014). Furthermore, many of these enterprises are former monopolists, but today operate in a liberalized energy market experiencing uncertainty in terms of the conditions affecting competitiveness and business transformation (Löbbe & Jochum, 2016; Mühlemeier, 2019). An example would be the issues confronting the German energy sector that is undertaking a system transformation (*Energiewende*) that includes aspects like the switch from fossil fuels to renewable energy sources and digitalization (Löbbe & Hackbarth, 2017; Mazzucato, 2018). Additionally, Germany has a high level of urban self-governance and places considerable importance on the concept of public services, an example is running public buses, which are often provided by locally-owned utilities (Mühlemeier, 2019). Consequently, the environment of these enterprises is increasingly hostile and therefore requires the enhancement of an organization's EO (Covin & Slevin, 1989; Löbbe & Hackbarth, 2017).

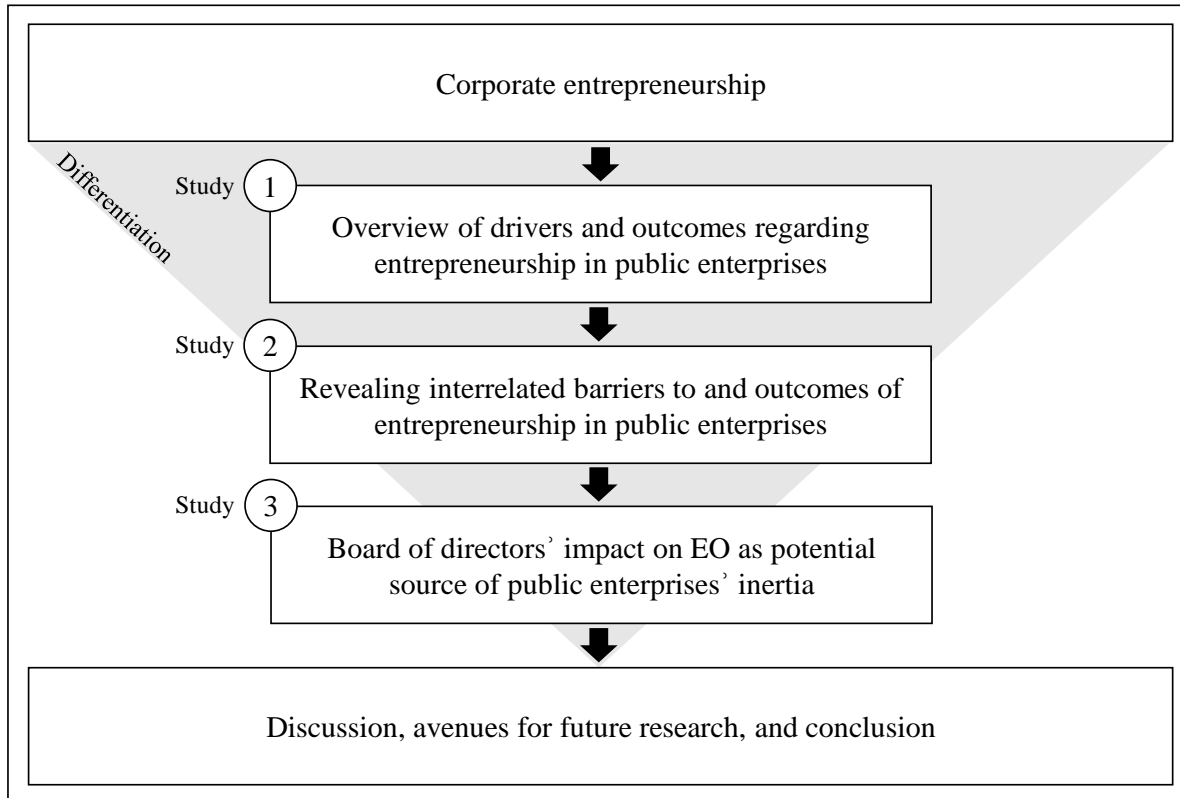
In summary, the overarching purpose of this dissertation to contribute to the under-researched topic of corporate entrepreneurship in the public sector and to support the development of high-performing public enterprises. This will be achieved by revealing drivers of entrepreneurial activities in public enterprises. The following section presents the structure and key results of this dissertation.

### ***1.3 Structure and key results of the dissertation***

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The purpose of the thesis will be achieved by way of the following structure of the included studies. As mentioned above, the definition of public enterprises and the samples in both empirical studies in Sections 3 and 4 set the context of entrepreneurship in this dissertation. The remainder is structured as displayed in Figure 1.

Embedded in public-sector context



**Figure 1: Structure of the dissertation**

Figure 1 illustrates how this dissertation focuses on entrepreneurship in established organizations within the public-sector context. The first study is a systematic literature review (SLR) (*Section 2*) that builds on the available research and addresses the required but so far missing overview of stimulators of, and barriers to, entrepreneurial activities in public enterprises. The review is supplemented by findings on potential outcomes of such activities. Building on the research gaps revealed in the SLR, the second study (*Section 3*) explores and differentiates potential barriers to PE, supplemented by potential outcomes of PE being inhibited. This is based on previous research suggesting public-sector organizations both suffer from weaker performance than their private-sector counterparts and also from a reduced level of EO (Cuervo & Villalonga, 2000; Hinz & Ingerfurth, 2013) and also evidence that barriers to, and outcomes of, PE in the public sector remain unclear (Cinar et al., 2019; Liddle & McElwee, 2019; Smith, 2014). Finally, the third study (*Section 4*) builds on the findings of Study 1 and Study 2 and focuses on the behavior of the BoD of public-sector organizations that is potentially the most important barrier to EO. The study makes an essential contribution to

clarifying the statement that the public sector might be “incompatible with manifestations of entrepreneurialism” (Bernier, 2014, p. 258).

With the guidance of the general framework in Figure 1, Table 1 gives an overview of the studies included in this dissertation, providing information such as (analytical) methods used in each specific study and what key findings emerged. After the overview presented in Table 1, all three studies will be described more in detail, supplemented with their specific contributions to existing literature.

**Table 1: Overview of the studies presented in this dissertation**

Section	Study	Research question(s)	Country	Sample size	Method	Key findings
2	<i>Linking Two Worlds? Entrepreneurial Orientation in Public Enterprises: A Systematic Review and Research Agenda</i>	What is the state of the art regarding entrepreneurship and EO in public enterprises?	International	40 conceptual and empirical articles in peer-reviewed academic journals	Systematic literature review (conceptual)	<ul style="list-style-type: none"> <li>• Literature biased toward the private sector</li> <li>• Insufficient attention paid to institutional questions regarding ownership; different obstacles in the public sector than in the private sphere</li> <li>• Unclear drivers of entrepreneurial activities in public enterprises, e.g. unknown impact of social goals and public ownership</li> <li>• Differences between public-sector organizations largely ignored; public sector treated as an entity</li> </ul>
3	<i>Barriers to Entrepreneurship in Public Enterprises: Boards Contributing to Inertia</i>	<p>a) What are the interrelated barriers affecting entrepreneurship in public enterprises?</p> <p>b) What are the outcomes of inhibited forms of entrepreneurship in these enterprises?</p>	Germany	18 semi-structured interviews in 12 (majority-) municipally owned energy suppliers (sales segment and distribution grid segment)	Comparative causal mapping (CCM) (qualitative)	<ul style="list-style-type: none"> <li>• Remarkable differences between sales segment and distribution grid segment regarding barriers to and outcomes of entrepreneurial activities call for fine-grained research on PE</li> <li>• Different approaches to managing/stimulating the underlying entrepreneurial dimensions might be required to enhance each segment's performance</li> <li>• Supervisory board a potential contributor to public enterprises' inertia in both business segments, revealing a perspective apparently contrasting with that of prior private-sector research</li> </ul>
4	<i>Uncovering a Negative Effect of Minority Shareholders' Board Networking Activity on Entrepreneurial Orientation in Public Enterprises</i>	To what extent do board behavior and social orientation predict public enterprises' EO in respect of different ownership structures?	Germany	110 majority-government-owned energy suppliers (focus on competitive business segments)	Structural equation modeling (SEM) (quantitative)	<ul style="list-style-type: none"> <li>• Local public ownership represses board strategy control (BSC), but no (negative) effect of BSC on EO</li> <li>• Board networking–EO relationship depending on ownership structure: not the usually suspected local public owner that represses EO, but minority shareholders</li> <li>• Social orientation represses EO, but no (positive) effect of social orientation on BSC</li> </ul>

The first study is presented in Section 2, and is titled *Linking Two Worlds? Entrepreneurial Orientation in Public Enterprises: A Systematic Review and Research Agenda*. Based on a SLR (Booth et al., 2012; Köhn, 2018; Röhm, 2018; Tranfield et al., 2003), this paper investigates academic research on entrepreneurship conducted in this specific context. It is guided by the overarching research question:

*What is the state of the art regarding entrepreneurship and EO in public enterprises?*

The goal is to stress the importance of the government as an essential entrepreneurial actor with its reinvigorated phenomenon of public enterprises and to provide an overview of the current knowledge of the phenomenon. Therefore, the study aims to provide an overview of factors fostering and repressing EO in public enterprises discussed so far, supplemented by potential outcomes of EO. To the best of my knowledge, it is the first SLR that examines entrepreneurship in public enterprises, with a special focus on EO. In this paper, 40 conceptual and empirical articles published in peer-reviewed journals are analyzed systematically and classified in an integrative framework. Based on this literature, the main result and contribution is the developed research framework (Figure 4) that organizes existing research and helps to identify contradictory findings and underrepresented areas. Consequently, this research framework leads to an explicit agenda with promising avenues for future research (Table 3). The main results of the SLR include the finding that EO studies in the public sector remain scarce, leading to the literature generally being biased toward the private sector (Smith, 2012), a factor that might have caused research to have paid inadequate attention to public-sector peculiarities such as institutional questions regarding government ownership. This finding underscores that the factors fostering and repressing EO in the public sector as well as the potential outcomes of EO remain unclear (Kearney et al., 2009; Smith, 2014). Smith (2014) in particular highlights the important but so far unattended role of the governing body in this specific public context. Following this line of argumentation, one important avenue for future research would be for qualitative studies that explore the peculiarities of the public sector with special reference to potential constraints of entrepreneurial activities such as the interference of the public owner and social goals (e.g., Bernier, 2014; Furlong, 2015; Ramamurti, 1986; Smith, 2014). Another important finding regarding the samples is that research should pay far more



attention to the sample's boundaries, and therefore differentiate between government administrations and modern public enterprises instead of interpreting the public sector as a homogenous entity (Smith, 2012, 2014).

The second study of this thesis is titled *Barriers to Entrepreneurship in Public Enterprises: Boards Contributing to Inertia* (Section 3) and it builds on the findings of the preceding SLR that revealed that the specific barriers to entrepreneurial activities in the public sector and the outcomes of those activities being inhibited remain unclear. Among other reasons, this might be explained by the fact that research has predominantly built on previous private-sector studies, and has therefore paid insufficient attention to the peculiarities of the public sector that determine its entrepreneurial activity (e.g., Bernier, 2014; Ramamurti, 1986) such as the institutional questions regarding government ownership. The article deals with two related research questions:

*What are the interrelated barriers affecting entrepreneurship in public enterprises? and What are the outcomes of inhibited forms of entrepreneurship in these enterprises?*

To address both questions, this study adopts an explorative CCM approach (Laukkanen, 2012). This method accounts for the calls of qualitative studies that ideally should focus on the complexity of entrepreneurial phenomena (Miller, 2011; Wales, 2016). This is particularly necessary in the public sector where the interrelatedness of barriers to entrepreneurial activities remains unclear (Cinar et al., 2019). Besides its methodical contributions, the paper offers an extension of Smith's (2014) model because this article not only focuses on determinants influencing PE—as Smith (2014) did—but also addresses potential outcomes of PE being inhibited. In doing so, it challenges the traditional view of the homogenous public sector (Liddle & McElwee, 2019). The article achieves its goals by examining the different business segments of sales and the distribution grid of 12 German (majority-)municipally owned energy suppliers aided by information gleaned from 18 semi-structured interviews. Furthermore, this approach also addresses recent calls in the literature to clearly define the sample's boundaries that might help to improve the validity of the findings (Lomberg et al., 2017; Miller, 2011). The interviews were conducted with middle managers who have a vital role in entrepreneurship in organizations (Kuratko et al., 2005; Morris & Jones, 1999). Results indicate that

segment-specific barriers underscore prior calls for fine-grained research on PE depending on the context of the segment (Bysted & Hansen, 2015; Smith, 2014). Moreover, entrepreneurial activities in the sales and distribution grid business segments may also result in different performance outcomes. The revealed differences in barriers and outcomes mean that substantially different approaches to managing and stimulating the underlying dimensions of EO might be required to enhance each segment's performance. Furthermore, the paper builds on the extensive theoretical framework addressed in NPM and new public governance (NPG) that considers the institutional questions regarding ownership and provides a detailed comparative analysis of the results with literature referring to the private and the public sector. Both enable the contextualization of barriers and outcomes with a holistic and broad perspective, thereby helping to reveal how public and private enterprises might differ regarding entrepreneurship (Liddle & McElwee, 2019). The results indicate that the barriers associated with the external environment such as legal constraints (e.g., Bernier, 2014) and those barriers arising from within the organization such as employee behavior linked to a value system hampering entrepreneurial thinking corroborate aspects discussed in prior research in both sectors (e.g., Morris & Trotter, 1990; Mühlemeier, 2019). However, the most important finding is that a public enterprise's supervisory board can hinder its progress, for example by limiting growth-oriented activities: A finding that potentially conflicts with those of prior research based on the private sector (e.g., Gabrielsson, 2007). That finding underscores the widespread prejudice that interference by the public shareholder and its BoD will have negative effects (e.g., Bernier, 2014; Ramamurti, 1986; Smith, 2012). On a conceptual level, this corroborates suggestions of using stakeholder-agency theory (SAT) to describe the (political) role and behavior of a BoD mainly composed of politicians (Hinna et al., 2010; Hinna & Scarozza, 2015).

The third and last study in Section 4 is titled *Uncovering a Negative Effect of Minority Shareholders' Board Networking Activity on Entrepreneurial Orientation in Public Enterprises*. It builds directly on the findings of the qualitative study in Section 3 and previous work discussed in the SLR (Section 2) as it focuses on the little understood but important topic

of public-sector supervisory boards' impact on the EO of public enterprises. The paper deals with the research question:

*To what extent do board behavior and social orientation predict public enterprises' EO in respect of different ownership structures?*

To address this question, my co-authors and I look beyond traditional agency perspectives found in private-sector research (Boivie et al., 2016) and draw on the combination of SAT and resource dependence theory (RDT). Data were collected from 110 top managers of majority-government owned German energy suppliers working in liberalized markets. To account for the findings regarding the differences in the business segments of the sales and distribution grid in the qualitative paper (see *Section 3*), my co-authors and I focused on competitive business segments in this quantitative paper. The analytical approach used is SEM and we used partial least squares (PLS) analysis. The study's results indicate that social orientation represses EO, whereas BSC and board networking on first sight do not seem to predict EO. Regarding BSC, we find that the local governmental owner is less involved in BSC, but we do not find a negative effect of BSC on EO in our sample organizations as is often hypothesized in previous research and underpinned in the qualitative study. Regarding the networking of a BoD, a closer look reveals the relationship between such networking and EO depends on the ownership structure in place. Surprisingly, we find that minority shareholders like majority privately-owned (i.e., mixed) enterprises and hub firms—the former commonly described as better performing than public enterprises (e.g., Brouthers et al., 2007; Inoue et al., 2013; Megginson & Netter, 2001; Wright et al., 2000), the latter described as fostering the innovativeness and performance of organizations they are affiliated with (Kolloch & Reck, 2017)—repress EO when engaging in board networking activities. On a general level, the study contributes to examining the under-researched topic of EO in the public sector (Meynhardt & Diefenbach, 2012). In the study, my co-authors and I base our assumptions on the mediating but little understood role of board behavior and EO (Coombes et al., 2011) instead of relying on the commonly used but implausible input-output model (Dalton et al., 1998) that refers to observable characteristics such as board size and its direct effect on firm performance (Finkelstein & Mooney, 2003; Gabrielsson, 2007). The study particularly contributes to RDT.

The original perspective of that theory suggests that interorganizational arrangements like interfirm network ties and equity holdings decrease external resource dependency and consequently improve firm performance (Pfeffer & Salancik, 1978). However, the article advances the idea of a fine-grained theory of RDT (Casciaro & Piskorski, 2005) by opening resource delivery to potential contrary effects to provide a deeper understanding of interorganizational action and challenges comparable research that relies on questionable input-output modeling (Zona et al., 2018).

With reference to the structure presented in Figure 1, all three studies will now be presented in their entirety in the following Sections 2 to 4. Finally, the dissertation will close with Section 5. In that last section, each study's findings will be summarized and discussed, leading to the discussion of the dissertation's overall contribution to the field of entrepreneurship in established organizations. Additionally, avenues for future research in the field will be outlined. This dissertation closes with some final thoughts about the thesis and the field per se.

## 2. Linking two worlds? Entrepreneurial orientation in public enterprises: A systematic review and research agenda

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**Abstract:** Contemporary public enterprises differ from their forebears. Today, they are more similar to private enterprises, receiving far more attention than previously, when privatization processes all over the world were in the spotlight. Furthermore, the broad research stream of entrepreneurship has so far neglected the consideration of public enterprises. To set a future research agenda, the author examines the dispersed literature using an integrative and organizing framework to identify major topics and research findings. This paper reviews articles that investigate the entrepreneurship in contemporary public enterprises. Despite the growing scholarly interest globally, this systematic literature review indicates there is no more than a loose connection between the literature streams of public entrepreneurship and corporate entrepreneurship. Specifically, the review shows that the multidimensional concept of entrepreneurial orientation has thus far been ignored, although autonomy plays a significant role in the literature review, namely in the context of the interference of the public owner. It also reveals other essential research gaps, such as the development of a modern theory of public enterprises. The research stream of public entrepreneurship offers a broad area of scholarly research and should encourage further investigation.

**Keywords:** Public enterprise, entrepreneurial orientation, public-sector corporate entrepreneurship

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# **Linking two worlds? Entrepreneurial orientation in public enterprises: A systematic review and research agenda**

## ***Abstract***

Contemporary public enterprises differ from their forebears. Today, they are more similar to private enterprises, receiving far more attention than previously, when privatization processes all over the world were in the spotlight. Furthermore, the broad research stream of entrepreneurship has so far neglected the consideration of public enterprises. To set a future research agenda, the author examines the dispersed literature using an integrative and organizing framework to identify major topics and research findings. This paper reviews articles that investigate the entrepreneurship in contemporary public enterprises. Despite the growing scholarly interest globally, this systematic literature review indicates there is no more than a loose connection between the literature streams of public entrepreneurship and corporate entrepreneurship. Specifically, the review shows that the multidimensional concept of entrepreneurial orientation has thus far been ignored, although autonomy plays a significant role in the literature review, namely in the context of the interference of the public owner. It also reveals other essential research gaps, such as the development of a modern theory of public enterprises. The research stream of public entrepreneurship offers a broad area of scholarly research and should encourage further investigation.

## ***2.1 Introduction***

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Today, the phenomenon of the public enterprise works in a very different world than that in which it was created (Bernier, 2011). It competes in liberalized markets with other enterprises (Rentsch & Finger, 2015) and is more profit-driven than in the past (Bernier, 2014; Luke & Verreynne, 2006a). Despite the advent of liberalization processes across the globe, public enterprises remain major economic players (Rentsch & Finger, 2015). Additionally,

between 2007 and 2012, more than 60 new local public utilities have been set up in Germany (Hall et al., 2013). Nevertheless, public enterprises are described as most resistant to change (Millward, 2011) and as being “incompatible with manifestations of entrepreneurialism” (Bernier, 2014, p. 258).

The idea of entrepreneurship is that it produces superior organizational outcomes (Kearney et al., 2009). As a result, entrepreneurship is indispensable, especially since public enterprises are asked to make profits as if they operate in the private sector (Bernier, 2011). Unfortunately, research on corporate entrepreneurship has primarily been conducted in the private-sector context (Kearney et al., 2008, 2010; Martens et al., 2016), which has led to a bias in the literature toward those so-called classic enterprises (Smith, 2012). There are few systematic and high-quality recent empirical studies on contemporary public enterprises (Bernier, 2014; Florio, 2014), even though they could offer a promising context in which to find and examine the emerging theme of public entrepreneurship (PE) (Luke & Verreynne, 2006a; Martens et al., 2016).

The current inadequate state of research has led to calls for a satisfactory definition of the research stream of PE or a theoretical framework or model that illustrates the various components affecting the corporate entrepreneurship process in the public sector (Kearney et al., 2007, 2010). Therefore, this literature review tries to answer the following questions:

- What is the state of the art regarding PE and entrepreneurial orientation (EO) in public enterprises?
- How do particular elements describe the phenomenon linked to EO?
- Are there differences between and consequences of the interpretation of EO in public enterprises in comparison with private enterprises?
- What are the interesting paths for further research on this evolving research stream?

This paper therefore aims to contribute to the entrepreneurship literature in several ways. First, the main contribution is that the developed research framework (Figure 4) helps to identify contradictory findings, underrepresented areas, and paths for further research. The study attaches particular importance to the neglected consideration of the multidimensional

concept of entrepreneurial orientation and to a closer linkage of the research streams of public entrepreneurship and corporate entrepreneurship. To the best of the author's knowledge, it is the first systematic literature review that considers entrepreneurship in public enterprises. Second, the selected articles are embedded into a conceptual framework to connect the different determinants. In doing so, the framework runs like a common thread through the review, structuring the results. Third, the paper offers an overview of the relevant empirical and conceptual articles identified, reviewed, and synthesized into a holistic work.

To this end, the paper is organized as follows: It first presents a classification and definition of new public management (NPM) and the institutional framework, public enterprises, and PE, before briefly outlining the review approach and descriptive analysis of the literature. Third, using the previous step as a foundation, the conceptual framework for provision of a systematic structure and the main findings are specified. Fourth, the main findings are discussed and potential paths for further research are outlined. Finally, the paper refers to its limitations and offers a conclusion.

## ***2.2 Public enterprises and the relation to NPM and the institutional framework***

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The underlying discussion here relates to the NPM concept (e.g., Luke & Verreyne, 2006a; Sharma et al., 2014). The rise of NPM in recent decades is one of the most pervasive international trends in public administration (Hood, 1991), especially in the Anglosphere and European countries. Following Florio & Fecher (2011), the core aspect of NPM is to establish market mechanisms within the public sector. Services such as education and health, which have not yet been privatized in most countries, have been converted in quasi-markets (Florio & Fecher, 2011; Millward, 2011). Nevertheless, the design of NPM does vary according to national characteristics (Pollitt, 2007). The most influential research streams for NPM are new institutional economics and public management (Aucoin, 1990; Hood, 1991; Schedler & Proeller, 2006). Table 2 provides short descriptions of these literature streams.



**Table 2: Theoretical basis of new public management**

Research stream	Most important theories	Description
New institutional economics	Public choice theory	Public choice theory deals with incentive structures and decision-making processes that are important for appropriations and decisions in the political area in comparison with those in the market area (Schedler & Proeller, 2006). Public choice can be defined as the application of economics to political science (Mueller, 2003), for example, through the characteristicly presumption of the <i>homo economicus</i> (Schedler & Proeller, 2006). This leads to the assumption that all individuals in the political-administrative area, whether politician or bureaucrat, pursue their own interests (Aucoin, 1990; Mueller, 2003). Bureaucrats tend to be budget maximizers; whereas the goal of politicians is to be reelected. Importantly, bureaucracy does not optimize social welfare (Niskanen, 1971; Schedler & Proeller, 2006).
	Principal-agent theory	Closely linked to public choice theory, principal-agent theory is based on the <i>homo economicus</i> (Schedler & Proeller, 2006). In the context of this paper, the principal can be defined as (co-)owner and the agent as the manager of the public enterprise. Information asymmetry is assumed: the agent has more information than the principal (Pratt & Zeckhauser, 1991). This leads to the problem that, if the agent and the principal pursue self-interested goals, the agent can use the information advantage to mislead the principal (Schedler & Proeller, 2006). As a result, the principal tries to counter by cutting the agent's autonomy through control instruments and incentive mechanisms (Eisenhardt, 1989).
Public management	-	This literature stream pursues the target of injecting "managerialism", that is, management structures and approaches, into the public sector (Aucoin, 1990). The influence of public management on NPM was focused on emphasizing management aspects in the public sector through the techniques and approaches of the private sector (Aucoin, 1990; Pollitt, 1990).

The basic premise of NPM is that the state exists in its basic form and is democratically legitimized (Schedler & Proeller, 2006). This leads to the point that public organizations are democratically legitimized as well (Hakvoort & Klaassen, 2007). The institutional framework for the modern view on administration is therefore legitimation in terms of democratic values and a law-based state as well as the rule of law (Schedler & Proeller, 2006). The rule of law "refers to a principle of governance in which all persons, institutions and entities, public and private, including the [state] itself, are accountable to laws that are publicly promulgated, equally enforced and independently adjudicated, and which are consistent with international human rights norms and standards" (UN, 2004, p. 4). According to the principle of the rule of

law, the law should govern and no one, including the government, should be above it (OECD, 2015a).

Parts of the NPM doctrine are outdated (Florio & Fecher, 2011) for, among other reasons, the public sector should not be considered as an entity (Bernier & Hafsi, 2007). Public enterprises have been part of research for a couple of decades, but mainly in a public monopoly market environment, as that was the typical textbook case until the 1980s (Florio, 2014). Today, these enterprises operate in a liberalized market context (Rentsch & Finger, 2015) and have a more profit-driven orientation than in the past (Bernier, 2014; Luke & Verreyne, 2006a).

Although many authors have tried to describe the phenomenon of public enterprises (see the appendix of Section 2), no universally accepted definition can be found within the literature. In this paper, public enterprises are characterized as:

- a) more than 50% owned or co-owned by national, regional, or local government,
- b) having a legal entity separate from the government,
- c) having financial (for-profit) motives, among others (e.g., social or ecological), and
- d) working in a liberalized market environment, including natural monopolies (monopolistic bottlenecks) within these liberalized markets.

Accordingly, public enterprises face many of the same challenges as private-sector organizations, such as competition (Luke & Verreyne, 2006a; Rentsch & Finger, 2015). The literature largely ignores explicit connections to entrepreneurship; however, contemporary public enterprises are part of the research stream evolving from public entrepreneurship (Bernier, 2011). This research stream remains concentrated on academic institutions or government organizations, and thus largely ignores public enterprises (Bernier, 2014). These facts are of utmost importance given the nature of entrepreneurship, which is different from the classic public or social entrepreneurship often associated with the public sector (Luke et al., 2010).

### ***2.3 Entrepreneurship in the public sector***

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The idea of entrepreneurship is that it produces superior organizational performance within the public sector (Kearney et al., 2009). Generally speaking, entrepreneurship is

concerned with the recognition and exploitation of profitable opportunities (Shane & Venkataraman, 2000). As stated by Kuckertz et al. (2017, p. 92), opportunity recognition “is characterized by being alert to potential business opportunities, actively searching for them, and gathering information about new ideas on products or services.” The same article goes on to describe opportunity exploitation as “developing a product or service based on a perceived entrepreneurial opportunity, acquiring appropriate human resources, gathering financial resources, and setting up the organization.” (Kuckertz et al., 2017, p. 92).

The few attempts to link the worlds of public enterprises and corporate entrepreneurship mean that there is no generally accepted definition of PE within the literature. Kearney et al. (2009, p. 28) do, however, provide a broad definition: “[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, and new improved strategies, risk taking and proactivity. Personal goals and objectives are less important than the generation of a good result for the state/ semi-state enterprise.”

The definition of PE used in this paper is closely related to that of Kearney et al. (2009): The process that exists within the public enterprise that results in innovative activities such as the development of new and existing products and services, technologies, administrative techniques, and new improved strategies, risk-taking, and proactivity.

The above definitions capture the essence of corporate entrepreneurship with the dimensions of EO, namely innovativeness, risk-taking, and proactiveness (Zahra & Covin, 1995). This concept was developed by Miller (1983). *Innovativeness* equals the “predisposition to engage in creativity and experimentation through the introduction of new products/services as well as technological leadership via R&D in new processes. *Risk taking* involves taking bold actions by venturing into the unknown, borrowing heavily, and/or committing significant resources to ventures in uncertain environments. *Proactiveness* is an opportunity-seeking, forward-looking perspective characterized by the introduction of new products and services ahead of the competition and acting in anticipation of future demand.” (Rauch et al., 2009, p. 763).

Drawing on Miller (1983), Lumpkin & Dess (1996) added two additional dimensions and suggested the multidimensional character of the EO construct. *Competitive aggressiveness* “refers to a firm’s propensity to directly and intensely challenge its competitors to achieve entry or improve position, that is, to outperform industry rivals in the marketplace” (Lumpkin & Dess, 1996, p. 148). *Autonomy* is “the ability and will to be self-directed in the pursuit of opportunities. In an organizational context, it refers to action taken free of stifling organizational constraints” (Lumpkin & Dess, 1996, p. 140).

While classical themes on EO have been investigated for a little more than 30 years, there is still room for studies in the underrepresented context of the public sector (Martens et al., 2016). To set a research agenda, the next section outlines the review methods, especially the collection and analysis of data.

## **2.4 Review methods**

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This literature review develops an evidence-based body of knowledge and establishes a future research agenda via a systematic review as outlined by Tranfield et al. (2003). The current review seeks to determine the current state of entrepreneurship research relating to public enterprises, and follows the recommendation of Denyer & Tranfield (2009) in first locating, selecting, and evaluating relevant research.

### **2.4.1 Data collection**

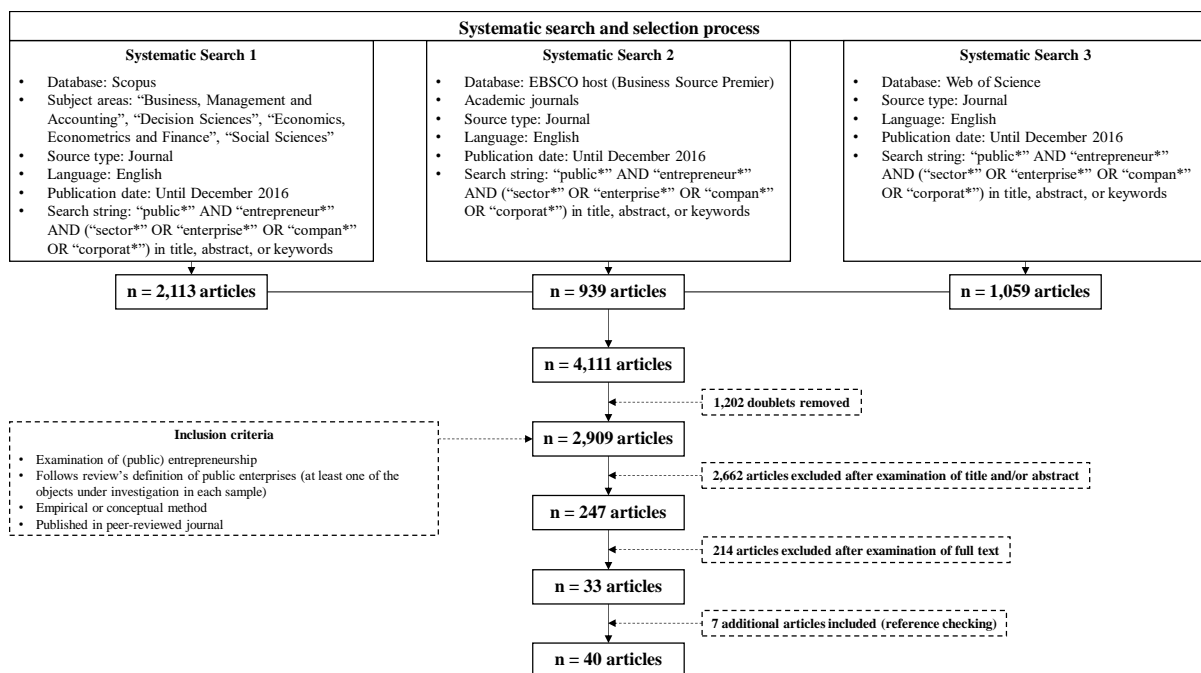
The search string (“public\*” AND “entrepreneur\*” AND [“sector\*” OR “enterprise\*” OR “compan\*” OR “corporat\*”]) in the title, abstract, or keywords is limited to encompass English-speaking journals published up until December 2016.<sup>2</sup> The review was limited to peer-reviewed journal articles, which can be classified as validated knowledge and are likely to have the greatest impact on the research field (Keupp et al., 2012; Podsakoff et al., 2005). The criterion for inclusion was an examination of entrepreneurship in conjunction with the developed definition of public enterprises, and accordingly, services in quasi-markets (Florio & Fecher, 2011; Millward, 2011) do not feature in this literature review. The review only

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<sup>2</sup> Before conducting the review, a pilot search in the field was conducted to obtain an overview of the relevant literature, to clarify the basis of the researcher’s work, and to specify how the proposed systematic review fits into the current body of knowledge (Denyer & Tranfield, 2009; Tranfield et al., 2003).

considers empirical papers when they follow the specified definition of public enterprises. In mixed samples, at least one of the objects under investigation must follow the definition. Conceptual papers are considered when they examine public entrepreneurship in a liberalized market context with a profit orientation (e.g., Bernier, 2011) or when they treat the public sector in a way that supports an application to the underlying context (e.g., Kearney et al., 2008; Ramamurti, 1986).

Applying the selection process recommended by Booth et al. (2012) resulted in 247 articles progressing to full-text analysis. The rejected articles mainly focused on non-profit organizations (e.g., education) and political (e.g., government acting like an entrepreneur) and financial issues (e.g., going public). After the full-text analysis, 33 articles remained. Reference checking as a supplementary search technique (Booth et al., 2012) identified seven additional papers matching the inclusion criteria. Ultimately, the current review incorporates 40 articles. Figure 2 illustrates the systematic search and selection process.

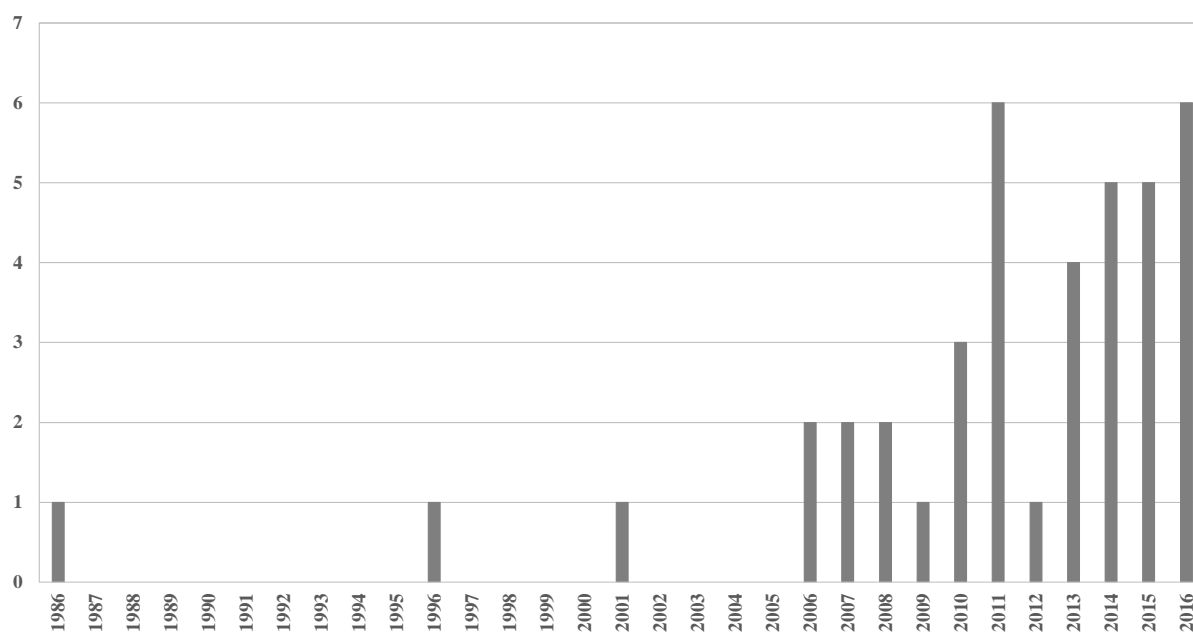


**Figure 2: Systematic search and selection process**

To sum up, only studies that met all inclusion criteria and triggered none of the exclusion criteria were incorporated into the review so as to ensure it was based on evidence of the best quality (Booth et al., 2012; Tranfield et al., 2003).

## 2.4.2 Data analysis

The number of publications per year in Figure 3 shows an unsteady but clear upward trend and underscores the increasing attention paid to the field. This is quite similar to the increasing number of publications in the field of EO in general, which began in the 1980s and has continued to grow, especially in the last 15 years (Martens et al., 2016).



**Figure 3: Number of publications per year**

Since 1980, privatization has been the dominant global trend in the world and as such has been in the spotlight of research (Bernier, 2011), but that is not the subject of the present literature review. Since the mid-2000s, extensive re-municipalization has occurred in different countries, for example in Germany (Hall et al., 2013). Many public enterprises can be found in the energy sector (e.g., Hall et al., 2013; Millward, 2011; Vavouras, 1996), while simultaneously there is a downward trend of governmental ownership in the telecommunications sector (Schmitt, 2011). With regard to geographical analysis, most articles focus on western and northern Europe and New Zealand, although the phenomenon is widely based in the western world.

As indicators for the quality of the publishing outlets in question (Booth et al., 2012), the SCImago Journal Rank (SJR) 2016 and the Thomson Reuters Journal Citation Reports (JCR) Impact Factors (IF) 2016 are applied (Bouncken et al., 2015; Köhn, 2018). The SJR

covers 27 of the 30 journals, ranging from 0.206 to 2.733. The JCR covers 19 of the 30 journals with IF ranging from 0.739 to 3.875. Therefore, many articles in question were published in at least middle-ranked journals (Bouncken et al., 2015). The fragmentation of the topic becomes obvious when one considers the number of different journals in which the articles were published. The dominant journal is the *Annals of Public and Cooperative Economics* ( $n = 5$ ). The remaining 35 articles were published in 29 different journals, mainly serving the areas of economics and management.

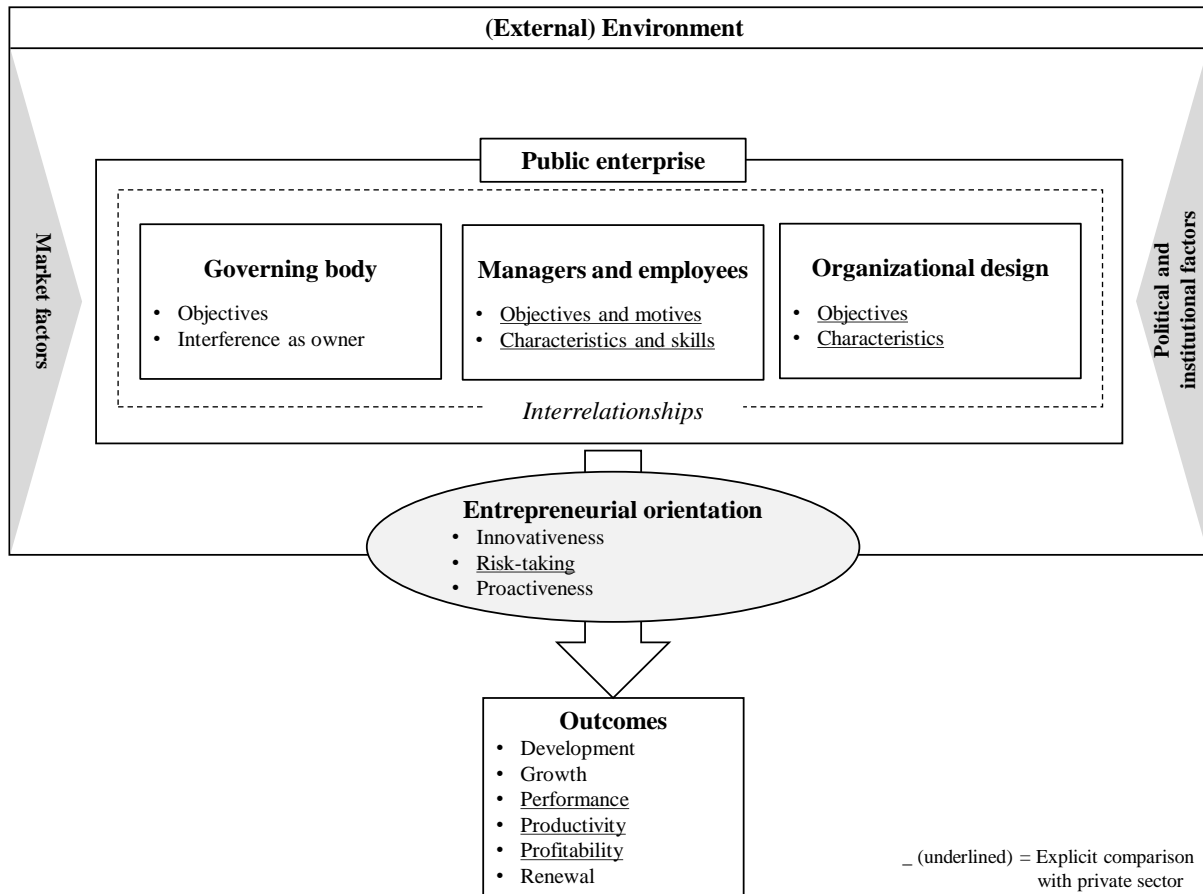
The methods applied in the articles are as fragmented as the journals publishing them. Most of the articles rely on qualitative ( $n = 16$ ) and conceptual approaches ( $n = 16$ ), followed by quantitative methods ( $n = 8$ ). An overview of the empirical papers (including information about research designs, sample sizes, and examined countries) is provided in the appendix (see appendix of Section 2).

The preceding remarks in conjunction with the limited presence of articles in highly ranked journals and the small number of quantitative approaches suggest limited robust theory development, and imply that the topic is underrepresented in the body of literature.

## ***2.5 Results: A framework of determinants related to entrepreneurial orientation in public enterprises***

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The current state of the literature can be described as complex, nontransparent, loosely coupled, and to a certain degree incomplete. Viewed in this light, it is important to connect the different determinants to develop a comprehensive framework that fosters the understanding of the determinants and their interrelationships. Figure 4 provides the framework that runs as a common thread through the review, structuring the results in the following section. Some elements of the framework were adapted and refined from the work of Smith (2014) and the first conceptual model of PE of Kearney et al. (2007), thus offering a more extensive and holistic view of the current literature.



**Figure 4: Review framework**

The framework highlights the public enterprise embedded in the (external) environment composed of both *market* and *political and institutional factors* (see Figure 4). On a corporate level, *governing body* and *organizational design* are illustrated as two separate determinants. On the individual level, the *managers and employees* are the innermost determinant of a public enterprise. Especially on the corporate and the individual level, explicit comparisons with private-sector counterparts can be identified. It should be noted that the proposed framework serves as a starting point from which to acquire a deeper understanding of the phenomenon of public enterprises in terms of its EO. It does not claim to provide a complete and sharp picture of the subject because the approach adopted cannot guarantee to identify all relevant factors.

### 2.5.1 (External) Environment

With reference to the research framework (Figure 4), the EO and resulting outcomes will be affected by the (external) environment.



*Market factors.* The consideration of market factors is one central difference between contemporary public enterprises and other organizations in the public sector (e.g., Bernier, 2014; Florio, 2014). Schmitt (2011) states that competition is not a cause of privatization, but a consequence of the same underlying process. Smith (2012, 2014) found that public enterprises are stimulated by the market factors munificence<sup>3</sup>, dynamism, and hostility; a finding in line with the hypothesis of Kearney & Meynhardt (2016). Kearney et al. (2010) examined 134 public-sector organizations in Ireland and found a positive relationship between munificence and renewal. Renewal mediates the relationship between munificence and performance (that is, growth and also development) (Kearney et al., 2013). Additionally, the same paper states that the less munificent the environment, the more hostile it becomes. The authors also argue that the performance outcomes from proactive investments in munificent environments can be evaluated more accurately (Kearney et al., 2013). Kearney & Morris (2015) state that environmental munificence positively affects the performance of the public-sector organizations. Their hypothesis that hostility negatively affects the performance was not supported (Kearney & Morris, 2015). It is important to note that all three studies seem to use the same dataset (Kearney et al., 2010; Kearney et al., 2013; Kearney & Morris, 2015). With reference to the mixed sample of the different public-sector organizations, possible differences were examined by conducting an analysis of variance, and no overall differences were found. Interestingly, Kearney et al. (2010) and Kearney et al. (2013) do not specify renewal as a consequence of EO, but as one of the dimensions of corporate entrepreneurship, while Kearney & Morris (2015) define strategic renewal as a form of entrepreneurship.

Not only direct competition but also cooperation with private companies are emphasized by public enterprises as they provide financial resources and knowledge that can be directed toward specific projects, thus fostering PE (Smith, 2014). The physical proximity of the partners is closely linked to the cooperation (Smith, 2014).

In sum, most of the literature indicates that the market factors under discussion are positively associated with PE; nevertheless, the role of a hostile environment in particular is not

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<sup>3</sup> Smith (2012) describes the external environment by measures of dynamism, hostility, and heterogeneity.

wholly clear. In this section, one has to interpret the findings critically, because some organizations do not follow the definition of the present paper, for example in terms of quasi-markets.

*Political and institutional factors.* The interference of politics and institutions is interpreted differently in the public and private sectors. The state's position is characterized by role conflicts arising from the state being both owner and regulator, and even between different regulators. As a regulator, its task is to strengthen competition between the different market players (Rentsch & Finger, 2015).

With reference to PE, Kearney et al. (2007, 2008, 2009)<sup>4</sup> propose that it is more positively related to organizational performance<sup>5</sup> among public-sector organizations that can adapt and change with the political environment. However, Kearney et al. (2010) found no positive associations between political adaptability or increased environmental complexity and renewal. This finding is in line with those of Kearney et al. (2013), whose study could not establish that renewal mediates the relationship between the political environment and performance (that is, growth and also development). While Gooneratne & Hoque (2016) and Smith (2014) state that external institutions and industry regulations may foster entrepreneurial activities, Bernier (2014) suggests the public sector is a poor institutional environment for entrepreneurship. Specifically, the paper claims that the public sector has too many rules or is too risk averse to offer opportunities to entrepreneurs (Bernier, 2014). An example is offered by Sundin (2011), whose case study reports that the law forbids public enterprises from competing outside the territory of their public (co-)owner. Accordingly, the public enterprise is highly dependent on the public legal framework (Rentsch & Finger, 2015).

Some authors indicate that external institutions can stimulate entrepreneurial activities in a public enterprise, while others report the opposite effect. This mainly refers to the law governing each public enterprise. At the same time, it remains unclear how public enterprises can manage the ongoing complexity in terms of their own adaptability. Lobbying might be a

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<sup>4</sup> Kearney et al. (2009) take public and private sector organizations into all of their propositions.

<sup>5</sup> Organizational performance incorporates development and productivity (Kearney et al., 2007, 2009) and development, productivity, and growth (Kearney et al., 2008), respectively.

key activity in setting out a convenient environment for public enterprises, especially because of their political interdependence.

## **2.5.2 Public enterprise**

The research framework extracted in Figure 4 illustrates that the relevant determinants in the case of public enterprises are the governing body, the organizational design, and the managers and employees, although there can be some overlap and ambiguity, especially in terms of objectives.

### **2.5.2.1 Governing body**

*Objectives.* The governing body can be seen as a link between the political, and thus the external sphere, and the public enterprise itself. As outlined in the definition of public enterprises, such organizations have to meet mixed and sometimes unclear objectives (Florio, 2014). Weber et al. (2014) note that while economic aims are important aspects of many public services, the overall aim is to create public value, a finding in line with Hauge et al. (2008), who reject their hypothesis that city administrations do have *the classic* profit motive when they decide whether to provide telecommunications services. Other authors propose that public enterprises are expected to make profits almost as if they were in the private sector (Bernier, 2011; Luke et al., 2011). Furlong (2015), whose multiple case study applies to the theories of urban entrepreneurialism, concludes that the more a public enterprise is focused on creating social value, the more its geographical focus differs from that of an enterprise with (solely) commercial objectives. Furlong (2015) also states that the often conflictual mix of social and commercial entrepreneurial activity within public enterprises is guided by state policy, a finding in line with those of Gooneratne & Hoque (2016), Bernier (2011), and Smith (2014). The last small case study underscores those remarks by referring to board meetings where the discussions can be more political than business oriented (Smith, 2014).

In general, the multiple objectives range from cross-subsidization, namely investing the revenues from profitable public enterprises into utilities that are in deficit (Rentsch & Finger, 2015) or accruing financial losses owing to undertaking projects demanded by their owner (Bernier, 2011), to negotiations of international rules of trade (Fleury & Marcoux, 2016), acting

as the main instrument for economic policies (Vavouras, 1996), or exploring options for oil and natural gas reserves and estimating yields, and safeguarding national defense (Millward, 2011). These objectives might differ between local and national/transnational public enterprises, mainly in terms of their public mission objectives (Florio, 2013).

In short, various public mission objectives seem to influence the EO and outcomes of the public enterprise. It is not possible to say whether the influence of those multiple, nontransparent, and inconsistent objectives is positive or negative, but a clear linkage to the public choice theory and the underlying motives of the bureaucrats and politicians can be identified (see Table 2).

*Interference as owner.* Bernier (2011) links the objectives of the owner closely to its inference by citing the principal-agent relationship and asking whether the strategic objectives of the managers differ from what the government wants them to do. Vavouras (1996, p. 275) describes public enterprises as “battlefields of diverse sociopolitical groups” and therefore the specific characteristics of their management as the most important factor curtailing economic efficiency.

Florio & Fecher (2011) question whether greater autonomy granted to public enterprises changes their performance, while numerous authors state that managerial autonomy stimulates entrepreneurship (e.g., Bernier, 2011, 2014; Luke et al., 2011; Ramamurti, 1986; Rentsch & Finger, 2015; Smith, 2012; Vining & Weimer, 2016). Accordingly, the performance of public enterprises cannot simply be explained by ownership (e.g., Florio, 2013; Vavouras, 1996). Bernier (2011) notes that public enterprises even create subsidiaries that very often escape from government control to a greater extent than the original public enterprise could. This can be underlined with the quantitative study of Smith (2012), who tried to measure the managerial autonomy of the CEO with a single statement. Smith (2012, 2014) and Smith & Umans (2015) state that, in general, public enterprises enjoy greater autonomy than local administrations, but it is important to note that the studies of Smith (2012) and Smith & Umans (2015) seem to use almost the same dataset. With regard to political composition and long board tenure, the small case study of Smith (2014) found no influence on PE. However, the study revealed that a large

board size restrained PE, and having a power group (including a chairperson, vice-chairperson, and a working committee) stimulated PE in public enterprises (Smith, 2014). While nearly all authors see greater autonomy in conducting routine business as an essential spur to acting entrepreneurially, interference in terms of financial support is acceptable in the enterprise's view (Ramamurti, 1986; Rentsch & Finger, 2015). Rentsch & Finger (2015, p. 636) provide additional motives for a close or distant relationship from the state's perspective: "[A] close relation is desirable in order to ensure the stable provision of universal services, control politically and strategically important sectors and critical infrastructures, implement policy objectives, meet geopolitical objectives and receive dividends as return on investment. A distant relationship is required to avoid bearing risk and to ensure freedom in regulating the public sector."

At the same time, Rentsch & Finger (2015) observe an increasingly dynamic relationship between the state and its public enterprises, for example, through a power shift from the owner to the regulator as large, state-owned public enterprises become more autonomous. Hall et al. (2013) identify partially contradictory findings regarding the re-municipalization of the energy sector in Germany. The most important factors for this process on a local level have been a greater degree of control and effective delivery of public service objectives.

Overall, it is unclear under which constraints this complex, potentially conflictual relationship between the public enterprise and its owner has a positive or negative effect on PE and organizational performance. Nevertheless, greater autonomy seems to have a positive effect on entrepreneurial activities. One process that remains unclear is the power shift toward more autonomy versus more control of local authorities regarding re-municipalizations.

#### **2.5.2.2 Organizational design**

*Objectives.* As already stated in the preceding section, public enterprises address multiple objectives in their routine operations. Notwithstanding that public enterprises are more profit-driven than in the past (Bernier, 2014; Rentsch & Finger, 2015), most authors state that there is a requirement to balance sometimes conflicting financial and social objectives (e.g.,

Bernier, 2011; Luke & Verreyne, 2006a, 2006b). However, Cafferata (2010) states that in the Italian context the conditions of the management of the biggest public enterprises are strictly oriented to the enterprise's rentability, without any strict public aims. Interestingly, Hauge et al. (2008) reject the notion that public enterprises are motivated by profit in the same way as their private-sector counterparts in a quantitative study. Both Smith (2012, 2014) and Smith & Umans (2015) find a middle way between the different statements by saying that the business and economic orientation of public enterprises dominates any social welfare orientation. With direct reference to PE, Smith (2012) analyzes her survey data and concludes that public service objectives are positively related to entrepreneurship in the public enterprise, and later supports those results with a small case study (Smith, 2014).

To sum up, the multiplicity of goals seems to influence the EO and the economic success of the public enterprise. It remains unknown whether those goals exert a positive or negative influence and which goal is the most important in which context (e.g., the industrial sector the public enterprise operates within).

*Characteristics.* Under the broad heading of characteristics, one can subdivide the topic into the interrelated areas of *control*, *decision-making*, and *structure*.

Several authors propose that the extent of PE will be more positively related to organizational performance among public-sector organizations with less formal *control systems* and more flexible and decentralized *decision-making* than among public-sector organizations with highly formal control systems and rigid, centralized decision-making (Kearney et al., 2007, 2008, 2009). Kearney et al. (2010) found some evidence that a flexible control system and decentralized decision-making can be positively associated with renewal. Kearney & Morris (2015) showed that control systems with moderate levels of formality, tightness, and discretion and also decentralized decision-making are positively associated with strategic renewal but not with growth and development. Additionally, their hypotheses that strategic renewal will mediate the associations between the control system and also between the decision-making characteristics and organizational performance were not supported (Kearney & Morris, 2015). Kearney & Meynhardt (2016) hypothesize that a clearly developed and communicated

entrepreneurial strategic vision is positively associated with work discretion/autonomy within the public enterprise. Smith (2014) relates the speed of the decision-making process to the degree of autonomy from the governing body, and established via a small case study that PE was stimulated when the public enterprise has a less hierarchical *structure*, thus supporting the notion of Kearney et al. (2007). However, Kearney et al. (2010) found no support for a positive association between the public sector's organic structure/low formalization and renewal.

To summarize, the very limited literature indicates that a more flexible control system and decentralized decision-making is positively associated with PE and renewal. A less hierarchical structure might be positively associated with PE.

### **2.5.2.3 Managers and employees**

*Objectives and motives.* On the individual level, Ramamurti (1986) identifies the main objectives and motives of managers and employees, and can therefore provide a starting point in the literature. The conceptual paper identifies differences and similarities between private and public entrepreneurs. A key finding relates to the economic perspective: public entrepreneurs are more indifferent to personal monetary gain than their private counterparts (Ramamurti, 1986). In his view, public and private entrepreneurs seek profits for their enterprise, even though the public entrepreneur seeks the resources to pursue non-commercial, social goals (Ramamurti, 1986). This is taken as a foundation by many authors who see personal goals and objectives as less important than the generation of a good result for the public enterprise (Kearney et al., 2007, 2009, 2010) and society as a whole (Cohen & Muñoz, 2015; Mbecke, 2016). Interestingly, Cohen & Muñoz (2015) link these entrepreneurs to social and sustainable entrepreneurs. However, very little is known about the motivation mechanisms of managers and employees in public enterprises (Florio, 2013, 2014), as demonstrated by the results of the following research. Kearney et al. (2007, 2008, 2009) suggest that the extent of PE is more positively related to organizational performance among public-sector organizations employing high rewards and motivation than among public-sector organizations with low rewards and motivation. Smith (2014) found empirical support for any form of compensation (financial and non-financial) stimulating PE. Cafferata (2010) concludes that the actions of the

Italian state-entrepreneur are strictly oriented to the enterprise's rentability. Arellano et al. (2013) conducted survey-based research in Brazil and reported that the most important values for the employees in the public sector were professionalism, teamwork, knowledge, adaptability, and challenge; all of which were linked to the recovery or pursuit of money-related values.

To sum up, the available findings on the motives of managers and employees in public enterprises, especially in terms of their money-related or social/nonmonetary motives, seem contradictory.

*Characteristics and skills.* When public entrepreneurs act entrepreneurially, they face different barriers than their counterparts from the private sector. Those barriers include working with multiple objectives or limited managerial autonomy (Ramamurti, 1986), which might require the public entrepreneur to acquire political skills to overcome them (Ramamurti, 1986; Rentsch & Finger, 2015). They might also find that goal ambiguity fosters managerial discretion (Ramamurti, 1986). Interestingly, Vining & Weimer (2016) state that a public enterprise with multiple owners who have different goals could allow managers greater discretion and autonomy than would be available in other public or private enterprises as the managers are the only people who can resolve this tension.

When directly comparing private and public-sector entrepreneurs, Sundin (2011) cites an example of both types running a similar cleaning service and states that while both operated in the same market, the private entrepreneur saw the decision of the municipality to buy the cleaning service as an opportunity, while the public entrepreneur saw that same decision as a threat. As a result, the public enterprise was driven out of the market by its private counterpart. Interestingly, and to a certain degree in contrast, the small study of Broadhurst et al. (2001) found publicly funded/mixed enterprises are more successful in the same market than their private counterparts. At the same time, not all of the public managers surveyed saw themselves as entrepreneurs. Focusing on the economic expertise and the private-sector working experience, Smith (2012) does not find support for the hypothesis that private-sector experience is positively associated with PE. These results might conflict with those of Sharma et al. (2014).



This study shows that the new commercial objectives of the public enterprise were fostered by employing accountants with a private-sector background. Those commercial objectives encouraged employees to be more commercially-focused (Sharma et al., 2014). Smith & Umans (2015) state that private-sector working experience is positively associated with organizational ambidexterity. The same study also finds evidence of a positive relationship between managerial entrepreneurial focus and organizational ambidexterity in public enterprises. In general, organizational ambidexterity seems to be higher in a public enterprise than in a local government administration (Smith & Umans, 2015). Focusing on the organizational culture in general, the empirical findings of Smith (2012) support the view that organizational culture related to teamwork, involvement, and managerial engagement is positively associated with PE. Smith (2014) indicates that working climate and leadership skills stimulate PE, and that entrepreneurial initiatives might originate with any employee, regardless of hierarchical level. Additionally, Luke et al. (2010) and Luke et al. (2011) found an open, flexible, and progressive culture in each of the entrepreneurial public enterprises under investigation.

In summary, public and private entrepreneurs share many characteristics and skills. At the same time, they work in different environments, which becomes especially noticeable given the results on their success and self-perception. It remains especially unclear whether private-sector experience or economic expertise as such fosters PE. Additionally, the organizational culture seems to influence PE.

### **2.5.3 Entrepreneurial orientation in the context of public enterprises**

Building on the conceptual thoughts of Ramamurti (1986), Kearney et al. (2007) established the first PE model and offered various proposals on EO, which were essentially repeated by Kearney et al. (2008, 2009). The research framework provided in Figure 4 illustrates that all those statements argue that the extent of PE will be more positively related to organizational performance among public-sector organizations that (a) support and encourage innovation rather than restrict and restrain it, (b) facilitate moderate risk-taking rather than avoid risk, and (c) support and encourage proactivity rather than restrict and restrain it (Kearney et al., 2007, 2009).

When testing the propositions, Kearney et al. (2010) and Kearney et al. (2013) found that EO did not apply to their mixed sample, and found no overall differences between the different public-sector organizations under investigation. However, the same authors admit that the limited response rate to the survey forming the basis of their study did not allow them to include the dimensions of EO into their study. Interestingly, Smith (2012) did find support for the hypothesis that public enterprises have a significantly higher propensity for entrepreneurship than other public organizations. This notion was later supported through a small case study revealing that public enterprises are affected in terms of entrepreneurship by four main categories of factors: the external environment, governing body, organizational design, and employees (Smith, 2014).

While the framework of analysis is similar, public enterprises face different environmental and internal influences than do private enterprises. As a result, the stimulating and restraining factors differ from those of the classic private-sector context (Smith, 2012, 2014) and fundamentally different approaches to managing and encouraging innovation, proactivity, and risk-taking might be needed (Kearney et al., 2009). The reasons for that include the fact that the public sector is notably more risk averse than the private sector (Luke et al., 2011; Luke & Verreynne, 2006a).<sup>6</sup> Luke & Verreynne (2006a) describe the aversion to risk highlighted within each organization through the cultural changes required to develop confidence internally, and to take on new projects. Luke et al. (2011) state that public enterprises that are very competent at their core business are innovative and pursue entrepreneurial undertakings, which suggests entrepreneurship is not inconsistent with this risk averse context. Kearney & Meynhardt (2016) subsequently defined EO in the public-sector context as more complex and multifaceted. In terms of the resulting outcomes, it remains unclear how non-quantifiable, multi-causal outcomes should be measured (Kearney et al., 2007, 2009).

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<sup>6</sup> Both articles discuss entrepreneurship from the strategic point of view.

As a whole, this section highlights that only very limited insights are available, supporting the view that (one-dimensional) EO is applicable to public enterprises, although different approaches might be required to manage and encourage the dimensions of EO.

## ***2.6 Discussion and research agenda***

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The goal of this systematic literature review and the assembled research questions was to collect all the conceptual remarks and empirical evidence on entrepreneurship in contemporary public enterprises. Furthermore, these remarks and evidence are brought together in an integrative and holistic framework (Figure 4). Building on this framework and the subsequent analysis makes it possible to identify research gaps that can offer avenues for further research. Table 3 recaps the research units of the framework, the summary findings of the analysis, and the resulting research gaps. Additionally, the ensuing remarks are formulated on a holistic level, providing the broad research avenues.

**Table 3: Summary of research findings**

Research unit of analysis		Findings	Research gaps
(External) Environment	Market factors	<ul style="list-style-type: none"> <li>Market factors are positively associated with PE and the outcomes in general. The role of a hostile environment is not wholly clear.</li> </ul>	<ul style="list-style-type: none"> <li>Need for more results on the positive impact of the market factors on PE.</li> <li>More research on the influence of hostility on the EO of public enterprises.</li> </ul>
	Political and institutional factors	<ul style="list-style-type: none"> <li>Contradictory findings on the stimulating effect of external institutions on entrepreneurial activities of the public enterprise, especially in terms of the relevant law.</li> <li>It remains unclear how public enterprises can manage the ongoing complexity in terms of their adaptability.</li> </ul>	<ul style="list-style-type: none"> <li>More research on the effects of external institutions and political adaptability on the EO of the public enterprise.</li> <li>Lack of analysis on lobbying as an entrepreneurial activity of public enterprises.</li> </ul>
Governing body	Objectives	<ul style="list-style-type: none"> <li>The multiple, nontransparent, and inconsistent public mission objectives seem to influence the EO and the outcomes of the public enterprise. Whether this (external) influence is positive or negative is unknown.</li> </ul>	<ul style="list-style-type: none"> <li>Lack of research on the effects of public mission objectives.</li> <li>Lack of research on who is setting the goals, which goal is more important and in which context.</li> <li>Lack of research considering the influence of the original goal setting on the EO.</li> </ul>
	Interference as owner	<ul style="list-style-type: none"> <li>The outcomes of the public enterprise cannot be explained simply by ownership.</li> <li>It is unclear under which constraints the relationship between the public enterprise and its owner has a positive or negative effect on PE and organizational performance.</li> <li>More autonomy seems to have a positive effect on entrepreneurial activities.</li> <li>One process that remains unclear is the power shift toward more autonomy versus more control of local authorities regarding re-municipalizations.</li> </ul>	<ul style="list-style-type: none"> <li>Need for more results on the possible influence of the ownership structure on the EO.</li> <li>Lack of research on the optimal distance between owner and enterprise (e.g., in terms of location and action).</li> <li>Lack of analysis on which factors determine the relationship between the owner and the public enterprise.</li> <li>Lack of analysis on what is the ideal ownership structure in terms of autonomy (administration; public enterprise; private enterprise; hybrid [multiple owners]).</li> </ul>
Organizational design	Objectives	<ul style="list-style-type: none"> <li>The multiplicity of goals seems to influence the EO and the economic success of the public enterprise. It is still unknown whether the multiple goals exert a positive or negative influence.</li> </ul>	<ul style="list-style-type: none"> <li>Lack of research on the effects of different objectives within the organization.</li> <li>Lack of research on who is setting the goals, which goal is more important, and in which context.</li> <li>Lack of research considering the influence of the original goal setting on the EO.</li> </ul>

**Table 3: Summary of research findings** *(continued)*

Research unit of analysis		Findings	Research gaps
	Characteristics	<ul style="list-style-type: none"> <li>• The literature indicates that a more flexible control system is positively associated with PE and renewal.</li> <li>• Decentralized decision-making might be positively associated with PE and renewal.</li> <li>• A less hierarchical structure might be positively associated with PE.</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of research on factors stimulating PE.</li> <li>• More research considering the effects of decentralized decision-making and flexible control systems.</li> <li>• More research investigating which structure is more conducive regarding EO.</li> </ul>
Managers and employees	Objectives and motives	<ul style="list-style-type: none"> <li>• Apparently contradictory results on motives (monetary vs. social/nonmonetary).</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of research regarding the motivation, constraints, and innovativeness of employees and managers in conjunction with the EO.</li> <li>• Lack of research on the importance of profit orientation on the corporate level in comparison with the importance on the individual level.</li> </ul>
	Characteristics and skills	<ul style="list-style-type: none"> <li>• Public and private entrepreneurs share many characteristics and skills; at the same time, they work in different working environments.</li> <li>• Working experience, skills, and the organizational culture seem to have an effect on the EO.</li> <li>• Organizational ambidexterity seems to be possible within public enterprises.</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of results on the skills now required of the public entrepreneur.</li> <li>• Lack of research on the influence of private-sector working experience versus economic expertise.</li> <li>• Lack of studies on the success of private and public entrepreneur in direct competition.</li> </ul>
Entrepreneurial orientation	Innovativeness, risk-taking, proactiveness	<ul style="list-style-type: none"> <li>• The one-dimensional construct of EO attracted research attention, but that was limited in quantity.</li> <li>• Multidimensional construct was not an explicit part of research in the public sector.</li> </ul>	<ul style="list-style-type: none"> <li>• Far more research investigating the one-dimensional construct of EO is required.</li> <li>• Lack of research investigating the multidimensional construct of EO.</li> <li>• Lack of establishment of a theoretical framework or model with a different approach in comparison with private-sector frameworks or models.</li> </ul>

This literature review clearly illustrates that public enterprises can to a certain degree take a hybrid form, in that they contain elements of corporate and public entrepreneurship. Nevertheless, research on *corporate entrepreneurship* has primarily been conducted in the private-sector context (Kearney et al., 2008, 2010), which has led to a notable research bias toward private-sector organizations (Smith, 2012). Accordingly, many articles in this literature review also rely on private-sector corporate entrepreneurship literature (e.g., Kearney et al., 2007, 2008; Smith, 2012, 2014) which might introduce bias to the basis of frameworks or models. This might explain why Kearney et al. (2007) seem to limit the political antecedents of PE to the external environment, ignoring the governing body as a necessary internal component. Additionally, the model provided by Smith (2014) seems also incomplete, notably because the outcomes of the entrepreneurial orientation are absent. Nevertheless, Smith (2014) states that research on private-sector entrepreneurship can be used as a starting point for *public entrepreneurship*. The literature on public entrepreneurship is still concentrated on academic institutions or government organizations, consequently largely ignoring the unique phenomenon of public enterprises (Bernier, 2014; Luke et al., 2010). Research on public enterprises itself has been obfuscated by privatization processes being the dominant global trend and thus hogging the research limelight. As a result, a detailed theory of the unique nature of public enterprises would be welcome (Florio, 2014; Rentsch & Finger, 2015), and such research could lead to a closer linkage of public enterprises and public entrepreneurship (Bernier, 2014).

Attempting to link the research streams of public entrepreneurship and corporate entrepreneurship more closely, Bernier (2014) advocates conducting empirical research. Interestingly, he tries to connect both research streams by referring to the conceptual thoughts of Kearney et al. (2008), while Kearney & Morris (2015) attempt the same in a similar way, referring to Bernier & Hafsi (2007) in their work. While the latter hold that actions in public enterprises are similar to those in large private organizations, this literature review, represented in particular by the work of Kearney et al. (2009) and Smith (2012, 2014), advocates different approaches in public and private-sector organizations, and that approaches consider different determinants of EO in public enterprises. Therefore, studies should not be conducted with samples unifying public enterprises and other public/non-profit organizations, because the focal

phenomenon of public enterprises differs from other public entities and is more similar to that of private enterprises (Bernier & Hafsi, 2007; Luke & Verreynne, 2006a; Smith, 2014).

Referring to the multidimensional construct of entrepreneurial orientation (Lumpkin & Dess, 1996), competitive aggressiveness and autonomy were not an explicit part of any research. With direct reference to the above mentioned mixed samples of public enterprises and other public-sector organizations, some objects under investigation were not embedded in a liberalized market environment. This could explain the neglect of competitive aggressiveness, which emphasizes outperforming market rivals (Lumpkin & Dess, 1996). Autonomy played a significant role in the literature review, specifically in the context of the interference of the owner. Smith (2012) tried to measure autonomy with a single statement, which was not embedded in a multidimensional construct.

This interference directly leads to the research stream of new institutional economics (see Section 2.2). Principal-agent theory has been the focus of discussion, mainly relating to the objectives of the different roles (state as an owner and regulator, the public enterprise itself, and the individuals), which have been discussed at length: these objectives were unclear, only partially overlapping and thus potentially conflictual, leading to excessive regulation of the public enterprise. The political objectives in particular link the phenomenon to aspects of public choice theory.

Therefore, the author calls for a research stream less reliant on private-sector literature. This can only be achieved by using qualitative studies for theory development that are in line with the exact definition of public enterprises. Accordingly, the adaption of the multidimensional construct of entrepreneurial orientation warrants major attention, especially in a liberalized market environment and the context of the profit orientation of public enterprises.

## ***2.7 Limitations***

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This literature review has shed light on the determinants of entrepreneurship in public enterprises, but it necessarily has some limitations. First, the review focused on peer-reviewed academic journals contained in the Scopus, EBSCO host (Business Source Premier), and Web

of Science databases. However, by following Podsakoff et al. (2005) and Keupp et al. (2012) and conducting extensive reference checks, the author believes the associated risks have been limited and the quality of the findings simultaneously improved in such a way as to create a more holistic view of the current literature. Second, the information content of the literature reviewed is sometimes inadequate, especially when the paper fails to report whether the examined cases follow the developed definition of public enterprises. The selection process for these papers was based on the criterion of their being fit for purpose (Boaz & Ashby, 2003; Pawson, 2006). In addition, it is still not possible to guarantee that some public enterprises according with the stated definition were a subject of investigation in other entrepreneurship literature, such as that focusing on the private sector. Third, it proved impossible to make sharper distinctions between some of the determinants (e.g., the objectives of organizational design and the governing body). This was because the quality of the information sources in this context is sometimes inadequate, which forced the author to assign statements of the authors to the most likely determinant.

## **2.8 Conclusion**

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Over the past decades and even today, the research streams focusing on public entrepreneurship with the focal phenomenon of public enterprises and corporate entrepreneurship have been only loosely connected. Accordingly, this structured literature review was conducted to illustrate future paths of research. It generates promising insights into the focal phenomenon of public enterprises and its EO. First, the literature on privatization has dominated research, leading to a neglect of contemporary public enterprises, notwithstanding that these enterprises are omnipresent in today's global economy. This might explain the fact that the entrepreneurship literature in the public sector has largely focused on government organizations and academic institutions. Second, the research concentrating on corporate entrepreneurship was primarily conducted in the private-sector context, which has led to a bias in this literature stream.

The literature attempts to link both research streams, while lacking a holistic view of public enterprises embedded in the research stream of public entrepreneurship. Analysis and



synthesis of prior research indicates a lack of theoretical grounding. Hence, the author developed an integrative and organizing framework (Figure 4), offering a holistic view on the topic. It is time to emerge from the shadows of the biased literature and to clarify the thus far opaque research area by establishing a more self-reliant research stream. The first move has been made; and as a result, many promising research opportunities await scholars to exploit them.

## Appendix of Section 2

**Table A1: Definitions of a public enterprise (and synonyms) in the reviewed literature**

Author(s)	Definition of a public enterprise
Florio & Fecher (2011, pp. 369–370)	“...an entity controlled by government but operating with a large amount of discretion and serving a market will be considered a ‘public corporation’. A public corporation in general is a ‘ <i>legal entity set up for the purpose of producing goods or service for the market so that its owner may make a profit</i> ’, thus both public and private corporations are considered similar species, both earn their income mostly through ‘sales’, but differ for their ownership structure.”
Luke et al. (2011, p. 322)	“New Zealand’s SOEs [state-owned enterprises] are government-owned but commercially-focused organisations, operating in deregulated markets.”
Millward (2011, p. 378)	“...enterprises owned by nation states and their local governments which were selling goods and services under the broad constraint to break even financially. Health, education and related services are therefore excluded.”
Kearney et al. (2013, p. 338)	“Public sector state and semi-state enterprises included all government departments and commercial business that are beneficially owned either fully or partially by the...Government.”
Florio (2014, p. 201)	“Public enterprises...can be defined as economic organizations: (a) ultimately owned or co-owned by national or local government, (b) internalizing a public mission among their objectives, (c) enjoying full or partial budgetary autonomy, (d) exhibiting a certain extent of managerial discretion, (e) operating mainly in a market environment, and (f) for which (full) privatization would in principle or de facto be possible, but for some reasons it is not a policy option.”
Gooneratne & Hoque (2016, pp. 58–59)	“...hybrid state-owned entities (SOEs) are government-owned businesses which carry out their operations with a commercial outlook. ...[They] operate with the coexistence of social and commercial aims, which make them different from their counterparts in the ‘typical’ private sector.”

**Table A2: Overview of empirical papers**

Study	Research design	Sample	Country
Broadhurst et al. (2001)	Multiple case study	4 private enterprises, 9 publicly funded/mixed-mode telecottages (approximately 3 public enterprises)	United Kingdom
Luke & Verreyne (2006a)	Multiple case study	3 public enterprises: MetService, NZ Post, Quotable Value	New Zealand
Luke & Verreyne (2006b)	Case study	3 public enterprises, but only one in detail (MetService)	New Zealand
Hauge et al. (2008)	Analysis of archival data	Dataset of the U.S. telecommunications market between 1998 and 2002	United States
Cafferata (2010)	(Historical) Case study	Italian economy: 20 biggest companies in Italy, thereof approx. 1 public enterprises (in 2008): Ferrovie dello Stato	Italy
Kearney et al. (2010)	Survey	134 public organizations	Ireland
Luke et al. (2010)	Multiple case study	3 public enterprises: MetService, NZ Post, Quotable Value	New Zealand
Luke et al. (2011)	Multiple case study	12 public enterprises at most	New Zealand
Millward (2011)	(Historical) Case study	(Public) Enterprises in Western Europe, Japan and the USA	Global
Schmitt (2011)	Analysis of archival data	Dataset of 18 OECD countries for the period between 1980 and 2007 (telecommunications sector)	Global
Sundin (2011)	(Multiple) Case study	1 public enterprise, 1 private enterprise	Sweden
Smith (2012)	Survey	74 local government administrations and 34 public enterprises	Sweden
Arellano et al. (2013)	Survey	137 employees of public enterprises	Brazil
Hall et al. (2013)	Two case studies	French water market, German energy market	France, Germany
Kearney et al. (2013)	Survey	Private enterprises: 51 in the United States, 141 in Slovenia; public organizations: 134 in Ireland	United States, Slovenia, Ireland
Sharma et al. (2014)	Case study	1 public enterprise	Asia-Pacific region
Smith (2014)	Multiple case study	1 local government administration, 1 public enterprise	Sweden
Weber et al. (2014)	Multiple case study	4 public-private innovation networks in services, public enterprises as actors	Austria, Norway
Cohen & Muñoz, (2015)	Multiple case study	20 observed cases, at least 1 public enterprise (Wien Energie)	Global
Furlong (2015)	Multiple case study	2 public enterprises (Empresas Públicas de Medellín, Waterleidingmaatschappij Drenthe)	Colombia, Netherlands
Kearney & Morris (2015)	Survey	134 public organizations	Ireland

**Table A2: Overview of empirical papers** *(continued)*

<b>Study</b>	<b>Research design</b>	<b>Sample</b>	<b>Country</b>
Rentsch & Finger (2015)	Multiple case study	3 public enterprises (La Poste, Deutsche Bahn, Swisscom), 1 mixed enterprise (Deutsche Post DHL)	France, Germany, Switzerland
Smith & Umans (2015)	Survey	60 local government administrations and 33 public enterprises	Sweden
Gooneratne & Hoque (2016)	Case study	1 public enterprise (state-owned commercial bank)	Sri Lanka

### 3. Barriers to entrepreneurship in public enterprises: Boards contributing to inertia

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**Author:** Timo Tremml

**Status and reference:** This section is based on the original publication of Tremml (in press), currently appearing in: *Public Management Review*, which can be found at the following address: <https://www.tandfonline.com/doi/full/10.1080/14719037.2020.1775279>. An earlier version titled “Entrepreneurship in public enterprises: The case of German municipally-owned energy suppliers” was presented at the G-Forum 2018 in Stuttgart, Germany.

**Abstract:** This article utilizes a comparative causal mapping approach to enlarge knowledge of the interrelated barriers to public entrepreneurship and the outcomes of such entrepreneurship. The results highlight clear differences between the sales segment and the distribution grid segment of German public enterprises that should prompt a refined perspective on entrepreneurship in the public sector. Remarkably, besides intraorganizational barriers and those interfering from the external environment, results also show that a public enterprise’s supervisory board can impede its progress. This article thus contributes to recent discussion on governance and entrepreneurship by revealing a feature that could distinguish public from private enterprises.

**Keywords:** causal mapping, governance, public enterprise, public entrepreneurship

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#### **4. Uncovering a negative effect of minority shareholders' board networking activity on entrepreneurial orientation in public enterprises**

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*Authors:* Timo Tremml, Sabine Löbbe, and Andreas Kuckertz

*Status and reference:* This section is based on the manuscript which is currently under review at C-ranked journal according to VHB-JOURQUAL 3. An earlier version titled “Board behavior and entrepreneurial orientation in public enterprises: Source of inertia or driver for change?” was presented at the G-Forum 2019 in Vienna, Austria.

*Abstract:* Public enterprises find themselves in increasingly competitive markets, a situation that makes having an entrepreneurial orientation (EO) an urgent need, given that EO is an indispensable driver of performance. Therefore, it is important to understand the central but unclear role of the public-sector board of directors (BoD) into EO. We draw on stakeholder-agency theory (SAT) and resource dependence theory (RDT) and use structural equation modeling (SEM) to investigate survey data collected from 110 German energy suppliers that are majority government owned. Results indicate that social orientation represses EO, whereas BoD strategy control and BoD networking do not seem to predict EO on first sight. Closer analysis reveals a BoD networking–EO relationship depending on ownership structure. Remarkably, we find that it is not the usually suspected local municipal owner who hinders EO in our sample organizations but minority shareholders engaging in board networking activities. The results shed light on the intersection of governance and entrepreneurship with special reference to the fine-grained conceptualization of RDT.

*Keywords:* Entrepreneurship, public enterprise, SEM, board, governance

*Acknowledgments:* The authors are grateful for the valuable comments provided by the participants of the 23rd G-Forum in Vienna, Austria. Research for this paper was financed by the Ministry for Science, Research and Art of Baden-Wuerttemberg, Germany.

# **Uncovering a negative effect of minority shareholders' board networking activity on entrepreneurial orientation in public enterprises**

## ***Abstract***

Public enterprises find themselves in increasingly competitive markets, a situation that makes having an entrepreneurial orientation (EO) an urgent need, given that EO is an indispensable driver of performance. Therefore, it is important to understand the central but unclear role of the public-sector board of directors (BoD) into EO. We draw on stakeholder-agency theory (SAT) and resource dependence theory (RDT) and use structural equation modeling (SEM) to investigate survey data collected from 110 German energy suppliers that are majority government owned. Results indicate that social orientation represses EO, whereas BoD strategy control and BoD networking do not seem to predict EO on first sight. Closer analysis reveals a BoD networking–EO relationship depending on ownership structure. Remarkably, we find that it is not the usually suspected local municipal owner who hinders EO in our sample organizations but minority shareholders engaging in board networking activities. The results shed light on the intersection of governance and entrepreneurship with special reference to the fine-grained conceptualization of RDT.

## ***4.1 Introduction***

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Beside heroic stories of private-sector entrepreneurs, the public sector remains largely unrecognized as an essential entrepreneurial actor (Mazzucato, 2018; Roberts & King, 1991): Public enterprises commit to guarantee and improve public value while facing a permanent struggle with other enterprises in liberalized and increasingly competitive markets (Mühlemeier, 2019). That makes an entrepreneurial orientation (EO) an urgent need as it promotes the success and performance of organizations (Meynhardt & Diefenbach, 2012; Rauch et al., 2009). Recent work shows EO among public organizations to be less prevalent

than that among their private counterparts (Hinz & Ingerfurth, 2013), corroborating that barriers to entrepreneurial activities in the public sector remain unclear (Cinar et al., 2019). One “particular object of interest” deals with the behavior of the board of directors (BoD) (Hinna et al. 2010, p. 133). The sparse existing research focuses exclusively on *private*-sector corporate governance and indicates a positive effect on EO (e.g., Eddleston et al., 2012). Research in the *public* sector indicates a negative effect when the governmental owner closely controls its enterprise (e.g., Lioukas et al., 1993; Smith, 2012). Such findings are strengthened by accounts describing politicians as the “essence of the problem” (Sørensen, 2007, p. 1046) and indications of potentially conflicting objectives of social and market performance (Mühlemeier, 2019).

Despite the societal and democratic relevance of the BoD in public enterprises (Cahan et al., 2005) and the intersection of governance and entrepreneurship potentially revealing differences in the public and private sectors (Hinna et al., 2010; Liddle & McElwee, 2019), empirical evidence is lacking. Therefore, the purpose of the paper is to answer the research question: *To what extent do board behavior and social orientation predict public enterprises’ EO in respect of different ownership structures?*

We draw on stakeholder-agency theory (SAT) and resource dependence theory (RDT) when examining a primary dataset of 110 German public enterprises and contribute to the literature in three main ways. *First*, besides outstanding exceptions (e.g., Meynhardt & Diefenbach, 2012), public-sector studies on EO remain surprisingly scarce. We shed light on unknown predictors of entrepreneurial undertakings in public enterprises (Cinar et al., 2019). Importantly, instead of relying on the commonly used but implausible input-output model (Dalton et al., 1998) which refers to observable characteristics such as board size and its direct effect on firm performance (Finkelstein & Mooney, 2003; Gabrielsson, 2007), we base our assumptions on the mediating role of board behavior and EO (Coombes et al., 2011). *Second*, although research on the relationship between the BoD and EO has recently attracted attention in private-sector research (e.g., Eddleston et al., 2012) this paper illuminates the little understood topic of board behavior and its influence on EO in public enterprises. By doing so, the paper reveals a missing link between BoD strategy control and EO, thus addressing the widespread prejudice that a BoD dominated by politicians will have negative effects for the



organization in question (e.g., Sidki & Boll, 2019; Sørensen, 2007) and leaving the predictions of SAT unsupported (Hill & Jones, 1992). *Third*, despite the relevance of RDT in the public sector (Pfeffer & Salancik, 1978; Roberts & King, 1991), we support the idea for a fine-grained conceptualization (Casciaro & Piskorski, 2005). Challenging common ideas of favorable ownership by private-sector dominated (i.e. mixed) enterprises and interorganizational networks (Inoue et al., 2013; Kolloch & Reck, 2017) and underscored with potential positive effects of board interlocks on performance (Drees & Heugens, 2013; Pfeffer & Salancik, 1978), we reveal the board networking–EO relationship changes from positive to negative when such enterprises hold minority shares of the public enterprise. We therefore advance comparable research (e.g., Zona et al., 2018) by overcoming the limitations of input-output modeling.

## ***4.2 Theoretical framework and hypotheses development***

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### **4.2.1 The role of entrepreneurial orientation in public enterprises**

While the academic discussion about public enterprises has undergone a recent revival, research on the phenomenon remains scarce (Bernier & Reeves, 2018). We build our reasoning relying on the ideas of corporatization (Erakovic & Wilson, 2005) and define public enterprises as those more than 50% owned by government but that are a separate legal entity. They have financial motives among others (e.g., a social responsibility to sustain and improve public value) and compete with enterprises in liberalized markets. The current research accounts for emerging trends in the public sector (Kolloch & Reck, 2017) and endeavors to clearly define the sample's boundaries (Miller, 2011). Consequently, it challenges the outdated view of public sector being an entity (Liddle & McElwee, 2019), for example by accounting for minority shareholdings of other enterprises like hub firms enabled by corporatization. Lacking a clear definition of networks (Provan et al., 2007), we define hub firms as enterprises that set up an interorganizational network and find themselves in the middle of it (Jarillo, 1988; Kolloch & Reck, 2017). They hold minority shares in members of their network and engage in knowledge exchange and also lead/coordinate their network (Dhanaraj & Parkhe, 2006; Kolloch & Reck, 2017).

Public enterprises' focal situation with high levels of social responsibility and an increasingly hostile environment requires the enhancement of an organization's EO (Covin & Slevin, 1989). EO is a firm-level strategic posture with an essential growth orientation (Covin & Slevin, 1989; Dess & Lumpkin, 2005). It describes how innovatively and proactively an enterprise operates with respect to business-related risk propensity (Covin & Slevin, 1989; Miller, 1983). *Innovativeness* encapsulates the pursuit of and ability to produce innovations, resulting, for example, in product introductions as an act of new entry (Covin & Miller, 2014). This includes not only the amount of new lines of products and services but also potentially radical and disruptive changes of products and service lines (Covin & Slevin, 1989). *Proactiveness* is about anticipating and shaping future needs as well as being ahead of competitors in terms of introducing novel products instead of simply imitating the actions of competitors (Covin & Slevin, 1989; Lumpkin & Dess, 2001). Accordingly, active new entry is an essential part of behaving proactively and seizing opportunities (Lumpkin & Dess, 2001). *Risk-taking* is about undertaking bold actions with a chance of very high returns instead of taking cautious incremental steps toward achieving a firm's objectives (Covin & Slevin, 1989). By seizing potential opportunities, firms accept the risk of failure in terms of potentially costly wrong decisions (Covin & Slevin, 1989).

Scholars recently started to interpret EO as a form of corporate entrepreneurship (CE) as a high incidence of entrepreneurial events indicates firms have a strong EO (Covin & Wales, 2019). While both concepts are closely related, EO as an organizational *attribute* is a behavioral construct, while CE can be defined as an *activity* within the organization (Covin & Wales, 2019). Overall, EO mediates the relationship between the organization's environment and its performance (Rosenbusch et al., 2013) by promoting ambidextrous innovations (Kollmann & Stöckmann, 2014).

Although firms with a strong EO benefit from improving financial and non-financial outcomes (Rauch et al., 2009), the predictors of EO in the public sector differ from those affecting the private sector (Meynhardt & Diefenbach, 2012; Morris & Jones, 1999; Smith, 2014). What remains particularly unclear is the relationship between politics and

entrepreneurship in public enterprises, which underscores that public governance-related determinants merit more investigation (Cinar et al., 2019).

#### **4.2.2 The role of corporate governance in the public sector**

With regard to public enterprises' corporatization process, the general requirement of corporate governance is a result of the separation of ownership and control (Jensen & Meckling, 1976). The board is in theory in a strong position to limit managerial actions that might be detrimental to shareholders expectations, resulting in enhanced firm performance (Fama & Jensen, 1983; Westphal, 1999). While most of the work on corporate governance relies on this narrow agency perspective (Boivie et al., 2016), recent research discusses the modification of traditional agency theory by suggesting the BoD's (political) self-interests as a potential barrier to organizational change (e.g., Hoppmann et al., 2019; Smith, 2014). Interweaving an agency and stakeholder perspective leads to the political role of a BoD being to determine the goals and policies of the public enterprise (Hinna & Scarozza, 2015). The SAT relaxes some assumptions of traditional agency theory while SAT is concerned with the relationship between the stakeholders and the enterprise rather than merely with the (narrow) relationship between the shareholders and the firm (Hill & Jones, 1992). Another modification considers the short-run disequilibrium through market adjustment processes characterized by friction that enable the inclusion of theories of power like RDT (Hill & Jones, 1992), which is especially relevant in the public sector (Lioukas et al., 1993; Roberts & King, 1991). The concept of RDT deals with an organization's interaction with its environment to reduce external dependencies through networking and legitimization activities (Pfeffer & Salancik, 1978) and the theory has attracted substantial approbation for its predictions in the field of organizational research (Drees & Heugens, 2013). Combining SAT and RDT was recently suggested as offering a "powerful conceptual [foundation] that can be used to address issues of board governance in entrepreneurship research" (Gabrielsson & Huse, 2017, p. 53).

Following this line of argumentation, these remarks fit public-sector concepts of corporate governance which is extended by democratic legitimation and public service obligations (Klausen & Winsvold, 2021). We refer to public corporate governance (PCG) which

includes public enterprises in liberalized markets as they perform services via separate companies that are more independent from the state than classic government agencies (Mühlemeier, 2019). To ensure the democratic control and legitimize the enterprise democratically (Klausen & Winsvold, 2021), the public shareholders nominate board members who represent politics and public administration to the board, according to the shares in the enterprise and shareholder agreement. Accordingly, the board in our sample is likely to be mainly composed of local politicians and also to act as an intermediary between the citizens (as the ultimate (majority) owner of the enterprise [Blankart, 1983]) and the enterprise itself, represented by its management (Hinna et al., 2010). Furthermore, PCG deals with different logics in public enterprises (Olsen et al., 2017), especially the fulfilling of social and market performance (Mühlemeier, 2019).

Public enterprises are in a striking dilemma in which they are both expected to act entrepreneurially and innovate, while at the same time potentially hindered by close monitoring and political/social objectives (Greer et al., 2003). To investigate the unclear relationship between entrepreneurship and local politics, we examine the promising but little understood topic of board behavior relating to networking and strategy control and public enterprises' social orientation as predictors of EO. We embed our model in the context of the study of corporatization that enables minority shareholdings by other enterprises. Therefore, ownership structure serves as an indicator of board capital/composition (Li, 1994; Mizruchi, 1996) while also directly predicting board behavior (Desender et al., 2013; Hideto Dato et al., 2020). The corresponding theoretical model is shown in Figure 5, which we discuss in detail directly below.

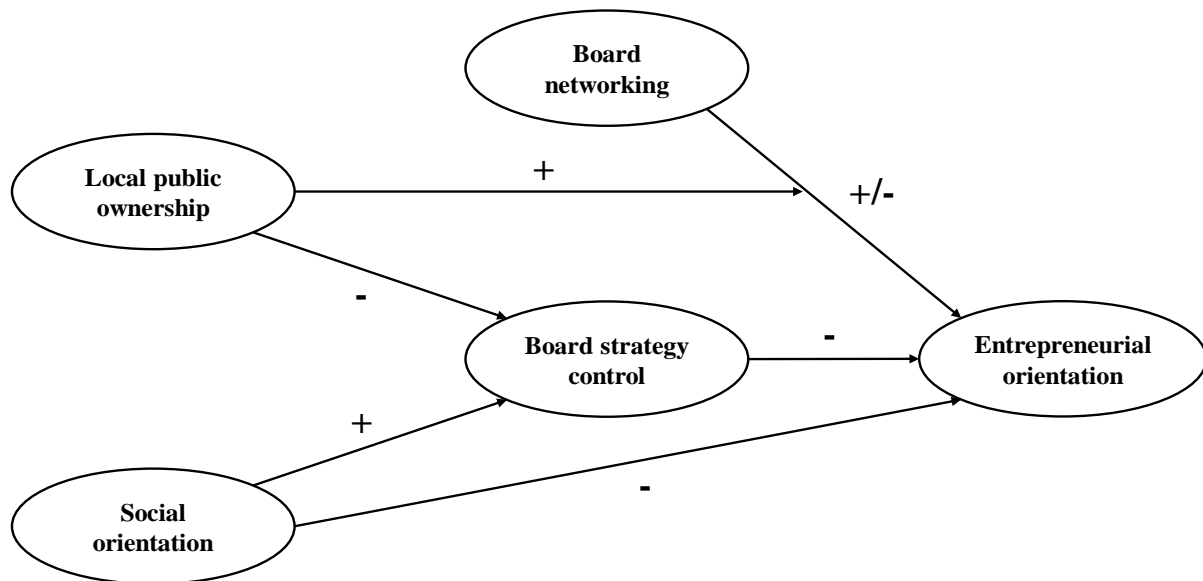


Figure 5: Theoretical model

### 4.2.3 Board behavior predicting entrepreneurial orientation in the context of corporatization

#### 4.2.3.1 The role of local public ownership in board strategy control

In general, the local governmental owner has an increasing interest in and duty to pursue responsible business development and to encourage entrepreneurial thinking in its enterprise (Meynhardt & Diefenbach, 2012). In line with this development, the relevance of BoDs' behavior as a key factor in board's performance is no longer only recognized in the private sector, but also in the public sphere (Cahan et al., 2005). Both aspects indicate that differences in ownership might be irrelevant to board behavior. This means that a modern BoD of a public enterprise in a liberalized market is likely to be largely aligned with classical models of corporate governance (Chambers & Cornforth, 2010), which implies that the board acts in the best interest of the enterprise.

However, SAT suggests that the multiple principal-agent relationships with numerous stakeholders found in the public sector (Cuervo & Villalonga, 2000) might increase coordination problems and the inertia of collective action (Hill & Jones, 1992). This issue can afflict BoDs with a high proportion of serving politicians at the same time: They might simply aim to be representative of the local voters' perspectives and seek primarily to maintain the status quo, which would undermine their discharging their role to the best of their ability (Coombes et al., 2011). Furthermore, and quite commonly in the public sector, weaker controls

might be explained by a lack of incentives and by capacity problems (Boivie et al., 2016; Cahan et al., 2005; Hillman & Dalziel, 2003). Referring to lack of incentives, politicians might have little incentive to monitor the activities of the organization because they will face little scrutiny from local citizens. Citizens' monitoring activities are inefficient because they have weak property rights and high transaction costs (Blankart, 1983; Davies, 1971). The issue of monitoring is a concern because citizens are reliant on the monitoring activity of the board owing to dispersed ownership as the citizens are the ultimate owners of the public enterprise (Blankart, 1983; Desender et al., 2013). Referring to capacity problems, local governmental owners might assign more ambiguous and potentially conflicting objectives than shareholders like hub firms (Shleifer & Vishny, 1997). This ambiguity might reduce potential monitoring capacity among the politicians on the board representing local government (Boivie et al., 2016). Thus, we hypothesize:

*H<sub>1</sub>: Local public ownership negatively affects board strategy control.*

#### **4.2.3.2 Board strategy control and entrepreneurial orientation**

Be it in the private or the public sector, BoD involvement in the monitoring and ratification of an enterprise's activities may affect a firm's entrepreneurial posture (Gabrielsson, 2007). Studies on the relationship have focused *exclusively* on the private sector, revealing that a BoD's control task is a potential positive influence on a firm's entrepreneurial attributes (Deman et al., 2018; Gabrielsson, 2007; Gabrielsson & Politis, 2009; Schepers et al., 2013), for example, as the board challenges the top management to support innovation and increase the long-term valuation of the firm (Fama & Jensen, 1983).

With regard to the public sector however, board members who are local politicians have strong obligations to external stakeholders (Olsen et al., 2017), which might also negatively influence their behavior when they sit on private boards and attempt to perform a "watchdog role" (Huse & Rindova, 2001, p. 173). In that scenario, local politicians might not act in the best interests of the firm. Even though all stakeholders are assumed to have a general interest in the continuing existence of the firm, SAT also states that a BoD might have little incentive to support entrepreneurial activities that could adversely affect the quality of life of stakeholder

groups (Hill & Jones, 1992). Management attempts to increase their power over different stakeholders through extending the firm's customer base via a diversification of products and/or markets might encounter resistance by the BoD as the investment demanded by diversification can be viewed as an inefficient use of resources (Hill & Jones, 1992). Such diversification is encouraged by the inherent growth orientation of EO (Dess & Lumpkin, 2005), for example, via the introduction of new products as an act of new entry (Covin & Miller, 2014). Therefore, a BoD that blocks managerial initiatives through being heavily involved in ratifying and monitoring of an enterprise's strategy might contribute to organizational inertia and lower performance (Hill & Jones, 1992; Hoppmann et al., 2019; Shleifer & Vishny, 1994). Prior public-sector literature indicates that state involvement is negatively associated with innovativeness and performance (e.g., Bradshaw et al., 1992; Lioukas et al., 1993; Ramamurti, 1986; Smith, 2012) and board members who were not primarily appointed because of their political competence were shown to positively influence the EO of public enterprises (Smith, 2012). Accordingly, we hypothesize:

*H<sub>2</sub>: Board strategy control negatively affects public enterprises' EO.*

#### **4.2.3.3 The role of local public ownership in BoDs' networking-EO-relationships**

In addition to its strategy control role, the BoD is well positioned to establish important links to (external) resources and stakeholders that potentially stimulate EO (Huse, 2005b; Miller, 2011). These links may enable the board to provide unique resource bundles that create a competitive advantage for the enterprise (Coombes et al., 2011; Huse & Rindova, 2001). An EO encompasses actions like new product introductions (Covin & Miller, 2014; Covin & Slevin, 1989) and early responses to potential opportunities (Lumpkin & Dess, 2001). Such activities often require a significant volume of resources and might involve a considerable risk of failure (Rosenbusch et al., 2013). Public enterprises therefore require legitimization for venturing, especially if the new activity is highly innovative and different in relation to previous products and services (Covin & Slevin, 1989; Pfeffer & Salancik, 1978). Prior private-sector research already indicates a slightly positive correlation of BoD service provision (incorporating networking) and EO (Bauweraerts & Colot, 2017; Deman et al., 2018). For

public enterprises, there might be social ties between the local politicians on the board and the management that improve resource delivery and the organization's EO (Meynhardt & Diefenbach, 2012; Westphal, 1999). As the local BoD is encouraged to legitimate public enterprises' entrepreneurial activities to its local stakeholders (Pfeffer & Salancik, 1978), these social ties on the local level might be especially helpful to those translating the resources directed to EO. This leads to the first part of our next hypothesis:

*H<sub>3a</sub>: Local public ownership positively moderates the relationship between the BoD's networking task and a public enterprise's EO.*

To be more specific, interorganizational relationships such as equity holdings are expected to lead to relational advantages and positive outcomes such as interorganizational learning and stable resource provision (Drees & Heugens, 2013; Kolloch & Reck, 2017; Pfeffer & Salancik, 1978). As ownership structures directly influence board composition (Li, 1994; Mizruchi, 1996), there might be board members appointed by minority shareholders such as hub firms. Board composition is suggested to be highly relevant to board interlocks, which occur when "a person affiliated with one organization sits on the board of directors of another organization" (Mizruchi, 1996, p. 271). These interlocks might support interfirm network ties that potentially help enterprises to reduce external resource dependency and consequently improve innovativeness and firm performance (Helmets et al., 2017; Pfeffer & Salancik, 1978). However, we argue that this does not hold true for enterprises like hub firms when serving as minority shareholders on the board of the focal public enterprise. Zona et al. (2018) find that interlocking directorates may have positive or negative effects on firm performance, depending on resource availability and ownership structure. These opposing effects on firm performance indicate that in addition to positive effects flowing from reduced resource dependency, for example via interfirm network ties, there might also be negative effects on firm performance. Those negative effects might stem from board interlocks as an instrument of corporate control (Casciaro & Piskorski, 2005; Mizruchi, 1996) or limiting enterprises' ability to act autonomously by restricting a pluralist set of resource providers (Drees & Heugens, 2013). Both might be achieved by enabling interlocking BoDs to exert power and control over the focal firm (Casciaro & Piskorski, 2005; Pfeffer & Salancik, 1978). Powerful minority shareholders might



encourage high levels of board networking activity to increase the resource dependence of the focal firm (Casciaro & Piskorski, 2005). As resource dependency might repress EO (Rosenbusch et al., 2013), we state in the second part of our hypothesis:

*H<sub>3b</sub>: The direction of the relationship between the BoD's networking task and a public enterprise's EO changes from positive to negative when other enterprises hold minority shares in the focal firm.*

#### **4.2.4 Social orientation predicting board strategy control and entrepreneurial orientation**

##### **4.2.4.1 Social orientation and board strategy control**

When monitoring the management of the public enterprise, public boards may have to consider often contradictory enterprise goals such as providing potentially unprofitable services of general interest (i.e. services that are crucial for life, such as public transport, in an affordable manner to all citizens [Mühlemeier, 2019]) while satisfying profit expectations in competitive markets (Mühlemeier, 2019; Olsen et al., 2017). There might be a negative effect on the BoD control task as the conflicting logics entail stress which can consume significant resources (Hinna & Scarozza, 2015). This might increase the bounded rationality of a BoD, thus reducing its supervision capacity (Boivie et al., 2016).

However, the social goals like the provision of public services may shape the decisions enterprises make in terms of product-market strategies, leading to interventions on the part of the state to satisfy stakeholders' needs (Lioukas et al., 1993). The provision of public services is an indicator of enterprises' "political visibility" (Lioukas et al., 1993, p. 647) and is important to determine how stakeholders might be affected by the firm's activities (Salancik, 1979). In this scenario, the inadequate provision of social activities (e.g., local public transport) would negatively affect citizens' quality of life, leading to their increasing the monitoring of the actions of politicians and enterprises (Mizrahi & Minchuk, 2019). Citizens' closer monitoring of politicians may also induce the latter to increase their monitoring activity of the public enterprise (Hill & Jones, 1992; Niskanen, 1971). Therefore, we hypothesize:

*H<sub>4</sub>: Public enterprises' social orientation positively affects board strategy control.*

#### **4.2.4.2 Social orientation and entrepreneurial orientation**

While the classic desire of private shareholders is said to be the enterprise maximizing profits and increasing shareholder value (Cuervo & Villalonga, 2000), stakeholders also set non-financial objectives for enterprises like increasing public value (Hill & Jones, 1992). Such social considerations of public enterprises are said to conflict with the basic idea of entrepreneurship (Bellone & Goerl, 1992) and to reduce corporate (market) performance (Cuervo & Villalonga, 2000; Shleifer & Vishny, 1994) as the pursuit of diversified interests consumes a significant volume of resources that are necessary to increase a firm's EO (Covin & Slevin, 1989; Hill & Jones, 1992). In addition to the issue of constrained resources, the freedom to choose specific product-market strategies to pursue innovation (Miller, 1983) is constrained when dealing with high levels of social orientation (Lioukas et al., 1993). Furthermore, any enterprise that disregards the demands of important interest groups could undermine the legitimacy of its entrepreneurial activities (Hill & Jones, 1992; Salancik, 1979). Interestingly, previous research on public enterprises finds public service objectives positively influencing EO (Smith, 2012), but we hypothesize:

*H<sub>5</sub>: Public enterprises' social orientation negatively affects enterprises' EO.*

### **4.3 Methods**

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#### **4.3.1 Research design and sample**

Our study focuses on energy suppliers in Germany that are majority owned by the government. Many of these enterprises are former monopolists, but today operate in a liberalized energy market experiencing environmental uncertainties in terms of competitiveness and business transformation (Mühlemeier, 2019), for example, as a result of the German energy system transformation (*Energiewende*) that includes aspects like the switch from fossil fuels to renewable energy sources and digitalization (Mazzucato, 2018). Additionally, Germany has a high level of urban self-governance and places considerable importance on the concept of public services, an example is running public buses, which are often provided by locally-owned

utilities (Mühlemeier, 2019). Consequently, the environment of these enterprises is increasingly hostile and therefore requires the enhancement of an organization's EO (Covin & Slevin, 1989) with the BoD charged with delivering the expectations of the municipality and its citizens (Pfeffer & Salancik, 1978). We limit our scope because research in a specific context and on a particular organization type may limit generalization but increase the validity of the research findings (Lomberg et al., 2017; Miller, 2011). Furthermore, we question the common perspective of the public sector being an entity (Liddle & McElwee, 2019) despite the variety among public-sector organizations regarding the drivers and outcomes of entrepreneurship (Bysted & Hansen, 2015; Smith, 2012). Therefore, we focus on the competitive business segments in the energy sector.

Primary data on public enterprises with a focus on governance and EO remains scarce (Daiser et al., 2017; Meynhardt & Diefenbach, 2012). In line with prior studies, we decided to use a single respondent study because the top management is the key informant on board behavior and EO, especially when boards meet relatively rarely as in the present context (Bauweraerts & Colot, 2017; Rauch et al., 2009; Zattoni et al., 2015). When determining the population, we ensured that the enterprises in question had a BoD and followed prior EO studies requiring a minimum of 10 employees (Arzubiaga et al., 2018; Kollmann & Stöckmann, 2014). We cross-checked multiple databases, leading to identifying a total of 620 enterprises.

As data collection via a single respondent approach and in a single timeframe might lead to common method bias (CMB), we followed the guidelines of Podsakoff et al. (2003) and Podsakoff et al. (2012) as well as prior studies in this sensitive field (Minichilli et al., 2009; Zattoni et al., 2015). We aimed to reduce CMB at the survey design stage by (1) guaranteeing the respondents anonymity and confidentiality, (2) placing independent and dependent variables far away from each other within the survey, (3) stating clearly that there were no correct or incorrect answers and (4) that different opinions about the issues addressed in the questionnaire are possible. Additionally, we conducted 20 pretests with people from the energy sector (with characteristics as close as possible to the key informant), the public administration, and academic experts in order to fine tune the questionnaire, for example regarding a consistent understanding of terms and reducing item ambiguity (Podsakoff et al., 2012).

Data collection took place from March until May 2019. We contacted each potential respondent or their assistant personally via phone to qualify the firm and invite the key informant to participate. That personal invitation secured permission to distribute 274 questionnaires, resulting in 116 responses. After excluding questionnaires with inappropriate respondents and/or missing data, our final dataset consists of 110 responses (108 CEOs, two general managers), representing a very satisfying final response rate of 40.1%.

After data collection, we checked for CMB using Harman's single-factor test (Podsakoff et al., 2003). The largest of the identified factors accounts for only 17.2% of the variance, while the remaining eight account for 42.3% (Podsakoff & Organ, 1986). As this test provides only a first indication, we conducted a full collinearity test and find no bias as all factor-level variance inflation factors are smaller than 3.3 (Kock, 2015; Kock & Lynn, 2012). Both tests indicate that CMB should not be a problem in our study.

To check for non-respondent bias, we collected objective data via the previously used Bisnode database (Kollmann & Stöckmann, 2014). When Bisnode did not provide information, annual corporate reports were examined. Following prior studies in the field (e.g., Carpenter & Westphal, 2001; Deman et al., 2018), we relied on the Kolmogorov-Smirnov test (Siegel & Castellan, 1988) to check for significant differences regarding firm size and CEO age between respondents and non-respondents. We also checked for differences in terms of enterprises' headquarters/location (at the level of federal state) and form of legal entity using chi-square tests (Bauweraerts & Colot, 2017). Overall, we did not find significant differences between the two groups.

An overall description of the sample is shown in Table 4.

**Table 4: Sample description**

Sample characteristics		N = 110	%	Mean	Standard deviation (SD)
Firm size (employees)	Between 10 and 50 employees	40	36.4	155.79	235.51
	Between 51 and 100 employees	26	23.6		
	Between 101 and 150 employees	17	15.5		
	More than 150 employees	27	24.5		
Local public ownership	50 % or less	0	0	3.17	0.92
	Between > 50 % and < 75 %	38	34.5		
	Between $\geq$ 75 and < 100 %	15	13.6		
	100 %	57	51.8		
Respondent age	30–39	7	6.4	52.84	7.11
	40–49	22	20.0		
	50–59	58	52.7		
	60–69	23	20.9		
Respondent tenure	Less than 5 years	32	29.1	9.82	7.47
	Between 5 and 10 years	38	34.5		
	Between 11 and 15 years	15	13.6		
	More than 15 years	25	22.7		

To check for validity, self-reported measures reported in Table 4 were correlated with secondary data whenever possible, showing significant correlations for firm size ( $r = 0.993$ ,  $p < 0.01$ ,  $n = 54$ ), local public ownership ( $\rho = 0.929$ ,  $p < 0.01$ ,  $n = 54$ ), respondent age ( $r = 0.998$ ,  $p < 0.01$ ,  $n = 52$ ), and respondent tenure ( $r = 0.983$ ,  $p < 0.01$ ,  $n = 53$ ). The results indicate the validity of the self-reported measures (Kollmann & Stöckmann, 2014).

#### 4.3.2 Variables and measures

All measurement scales were borrowed from previous studies (see appendix of Section 4 for an overview of the measurement scales used). Importantly, the study measures the respondents' perceptions as it mainly relies on latent variables (except for local public ownership and board activity). To ensure a correct translation from English to German, two experienced researchers followed the forward-backward translation technique advocated by Brislin (1970). Most items were measured on Likert-type scales. Here we used 5-point scales as the original 7-point scales can easily be rescaled without affecting the mean, skewness, or kurtosis (Dawes, 2008). Combined with endpoint labeling, this is the best choice when

researchers want to relate variables and estimate linear relations using structural equation modeling (SEM) (Weijters et al., 2010), for example because of higher criterion validity.

#### 4.3.2.1 Independent variables

**Local public ownership.** Prior studies were criticized for measuring public or private ownership structures dichotomously (Bruton et al., 2015) and for ignoring potential differences between giant state-owned enterprises and public enterprises on a more local level (Florio, 2013). Therefore, we distinguish between a simple majority stake (>50% to <75%), a qualified majority stake (75 % to <100%) and full ownership (100%) by local municipalities and/or districts. As stated in Section 4.2, we additionally take the peculiarities of our sample and the findings of comparable research into account (Kolloch & Reck, 2017) and define minority shareholdings from other enterprises (such as other energy suppliers) as *non-public*—albeit they are potentially majority owned by government. This action ensured the research had clear boundaries as we rely on a specific organization type (Lomberg et al., 2017; Miller, 2011) and overcome the traditional and inappropriate view of the public sector representing an entity (Bysted & Hansen, 2015; Liddle & McElwee, 2019).

**Board networking.** To measure a BoD's ability to provide legitimacy and to establish important links to external resources and stakeholders for the public enterprise, we rely on the multi-item Likert scale anchored with *fully disagree* (1) and *fully agree* (5) provided by Minichilli et al. (2009) which is essentially based on the suggestion of Huse (2005a).

**Social orientation.** In order to investigate the objectives of social performance against those relating to market performance in public enterprises (Mühlemeier, 2019), we base our 5-point semantic differential scale on that of Lioukas et al. (1993). We addressed concerns reported in the literature over impaired reliability by providing a context-specific and unambiguous example within the construct (Lee & Duffy, 2019; Sackett & Larson, 1990). A higher overall score indicates greater non-commercial obligations by addressing demands regardless of the costs incurred and is therefore more likely to be associated with (social) public service objectives. A lower overall score indicates a stronger commercial orientation and fewer

restrictions flowing from the enterprise being allowed to exclude unprofitable customers from accessing its offerings (Lioukas et al., 1993).

#### 4.3.2.2 Dependent variables

**Board strategy control.** To measure a BoD's ability to perform its strategy control task, we measured the involvement in the ratification stage and the follow up monitoring stage with a construct based on the *board involvement in decision control* scale provided by Gabrielsson & Winlund (2000) and validated by Gabrielsson (2007). We take the findings of Gabrielsson & Politis (2009) into account and focus on the strategy control perspective of the board. All six items were measured on a Likert scale anchored with *fully disagree* (1) and *fully agree* (5).

**Entrepreneurial orientation.** To understand "what EO looks like" (Covin & Wales, 2012, p. 681), we relied on the predominantly used second-order reflective-reflective Miller/Covin and Slevin construct (Covin & Slevin, 1989). We included the findings of Lumpkin & Dess (2001) and replaced one item on proactiveness (*Typically adopts a very competitive "undo-the-competitors" posture*) with the item *A strong tendency to be ahead of other competitors in introducing novel ideas or products* as the latter was a better fit with the dimension in question (Brändle et al., 2019; Kollmann & Stöckmann, 2014). In general, a higher overall score indicates higher EO, while lower scores indicate a more conservative orientation (Covin & Slevin, 1989; Green et al., 2008). Following prior research (Kollmann & Stöckmann, 2014), all nine items were measured using a 5-point semantic differential type scale.

#### 4.3.2.3 Control variables

Following previous studies in the realms of board and EO research, we controlled for variables regularly showing explanatory power for the endogenous variables. On the **environmental level**, we controlled for hostility as prior studies showed environmental discontinuities to have an impact on board behavior and EO (Green et al., 2008; Lioukas et al., 1993; Smith, 2012). Hostility was measured with the multi-item Likert scale provided by Green et al. (2008). On the **board level**, we controlled for board activity and board knowledge. Board activity was measured by asking how long an ordinary board meeting usually lasts (in hours)

(Arzubiaga et al., 2018). Board knowledge was measured with the multi-item Likert scale provided by Machold et al. (2011), previously validated by Minichilli & Hansen (2007). On the **firm level**, we controlled for past performance as crisis contexts in terms of bad performance affect board behavior and entrepreneurial undertakings (Eddleston et al., 2012; Gabrielson, 2007; Minichilli & Hansen, 2007). As focusing exclusively on financial outcomes would be inappropriate (Bruton et al., 2015), past performance was measured with a statement based on Caruana et al. (2002) which accounts for the overall performance of the enterprise for the last three years compared to other energy suppliers, therefore indicating the firm's goals, objectives, and aspiration levels (Kirchhoff, 1977; Lumpkin & Dess, 1996).

#### **4.3.2.4 Measurement model assessment**

In order to evaluate our measurement model, we first tested the reliability of the reflective constructs by examining  $\rho_A$ , composite reliability (CR), and Cronbach's alpha (CA) (Hair et al., 2019). We deleted item numbers 1 and 4 of hostility to retain  $\rho_A$ , CR and CA values close to or higher than 0.7 for all constructs what indicates construct reliability (Hair et al., 2019). Second, the average variance extracted (AVE) shows scores higher than 0.5, indicating convergent validity (Hair et al., 2019). Third, discriminant validity is tested via the Fornell-Larcker criterion (Fornell & Larcker, 1981), cross loadings, and the heterotrait-monotrait ratio of correlations (Henseler et al., 2015). All three tests display values fitting their suggested thresholds, indicating discriminant validity (Hair et al., 2019). An overview of reliability and AVE assessment can be found in the appendix (see appendix of Section 4).

#### **4.3.3 Analytical approach**

The analytical approach used is SEM which is appropriate when examining multiple cause-effect relations with latent constructs (Hair et al., 2011). Although this method features heavily in (private-sector) management related research (Hair et al., 2019), it is little used in PCG research (Daiser et al., 2017). We used partial least squares (PLS) as we rely on a prediction perspective of the model with early stage theory development (Hair et al., 2019; Moreno & Casillas, 2008). The PLS analysis is also particularly suitable for testing interaction



effects (Mitchell et al., 2008; Sirén et al., 2012). Like prior comparable studies in the field (e.g., Arzubiaga et al., 2018), we used SmartPLS 3 (Ringle et al., 2015), the most widely applied PLS-SEM software (Hair et al., 2018). We used a path-weighting scheme as our model includes a second-order reflective construct (Sarstedt et al., 2019). To test the significance of the paths, we conducted the complete and bias-corrected bootstrap procedure with 5000 subsamples (Hair et al., 2018). The moderator analysis is performed via a two-stage approach as suggested by Becker et al. (2018). Overall, our proposed model can be reasonably run with 90 cases (Chin, 1998). The available sample size of 110 cases is consequently more than sufficient for our analysis (Hair et al., 2018).

#### 4.4 Results

Before presenting the results of the proposed hypotheses, we offer Table 5 to display the correlation matrix, mean values, and standard deviations of the variables.

**Table 5: Correlation matrix, mean values, and standard deviations**

No.	Variables	1	2	3	4	5	6	7	8	9
1	EO	-								
2	Board strategy control	0.09	-							
3	Board networking	-0.12	0.33**	-						
4	Local public ownership	-0.07	-0.30**	0.00	-					
5	Social orientation	-0.25*	-0.11	-0.09	0.07	-				
6	Hostility	0.01	0.23	0.19	0.05	0.03	-			
7	Board activity	0.11	0.26*	0.04	-0.07	-0.03	0.22	-		
8	Board knowledge	-0.05	0.40**	0.40**	-0.11	-0.10	0.19	0.19**	-	
9	Past performance	0.29**	-0.18	-0.13	0.07	-0.16	0.04	-0.08	-0.02	-
	Mean	2.59	2.42	3.03	3.17	2.62	3.69	2.37	3.38	3.77
	SD	0.62	0.82	1.23	0.92	1.11	0.72	0.80	0.91	0.79

Note: N = 110; 2-tailed; All latent constructs were measured on 5-point scales.

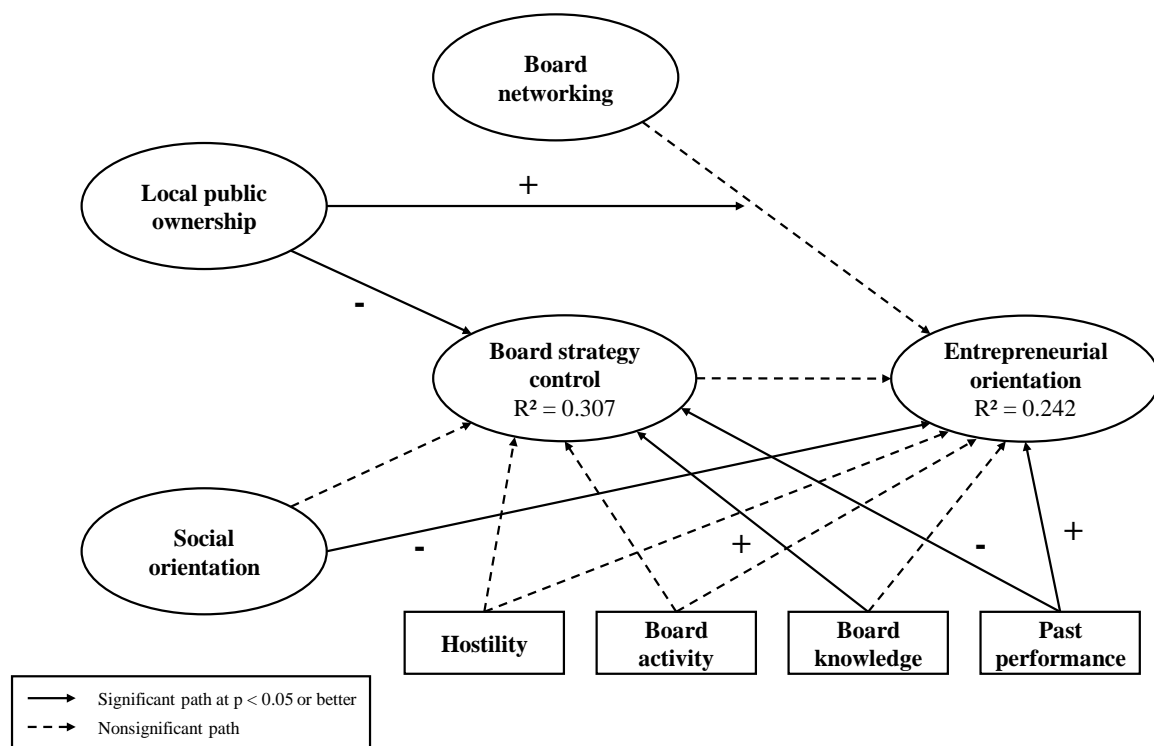
\* p < 0.05

\*\* p < 0.01

The data reveal significant correlations between board characteristics and board behavior, replicating the findings of previous private-sector studies (e.g., Gabrielsson & Winlund, 2000; Minichilli et al., 2009). Despite suggestions in the literature, we do not find a significant relationship between board networking and hostility (Huse, 2007) or between ownership structure and EO (Hinz & Ingerfurth, 2013). However, we find a significant positive correlation between past performance and EO, a situation that research has been more skeptical

about in the public sphere (Liddle & McElwee, 2019) than in the private sector (Rauch et al., 2009).

We show the results of our tested hypotheses in Figure 6, which illustrates that that the model is significant with relatively high in-sample explanatory power ( $R^2 = 0.307$  for board strategy control;  $R^2 = 0.242$  for EO) (Hair et al., 2019). The Stone-Geisser-Criterion ( $Q^2$ ) was calculated via a blindfolding procedure with an omission distance of 7.0 (Tenenhaus et al., 2005).  $Q^2$  is clearly greater than zero for both endogenous variables, supporting the interpretation of the model's predictive accuracy for these constructs (Hair et al., 2019).

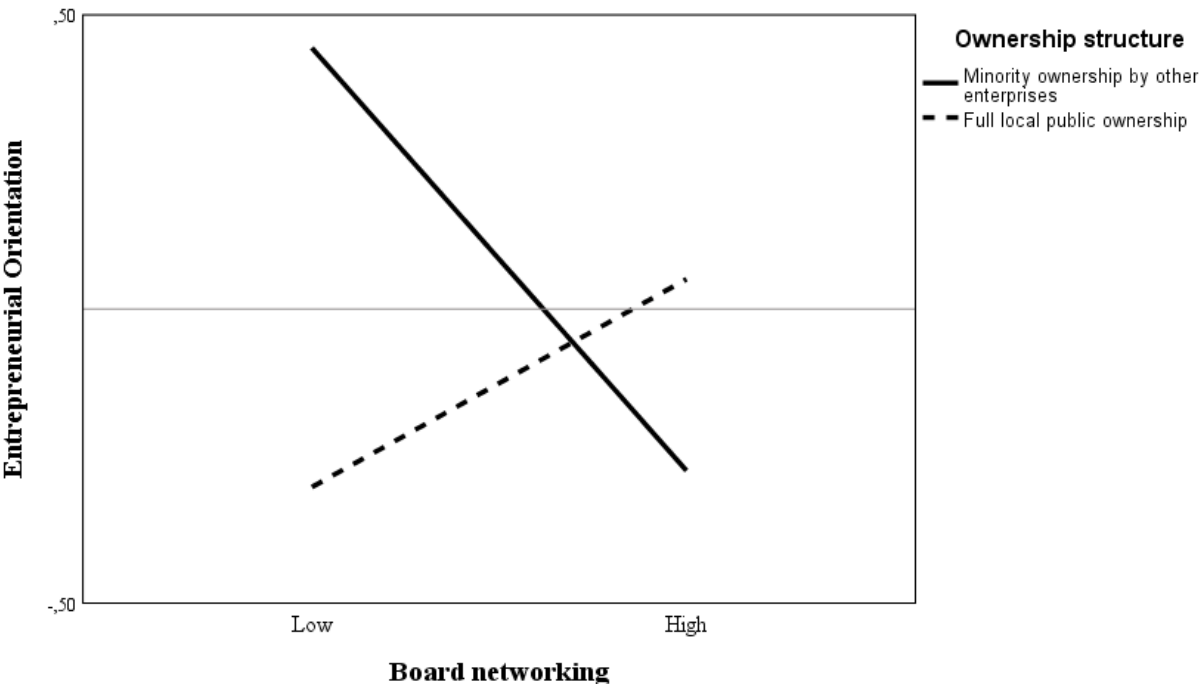


**Figure 6: Hypotheses results (one-tailed)**

The control variables hostility and board activity do not show a significant effect on board strategy control (hostility: path = 0.162,  $p = 0.11$ ,  $f^2 = 0.035$ ; board activity: path = 0.126,  $p = 0.09$ ,  $f^2 = 0.021$ ) or on EO (hostility: path = - 0.014,  $p = 0.45$ ,  $f^2 = 0.000$ ; board activity: path = 0.141,  $p = 0.08$ ,  $f^2 = 0.023$ ). Board knowledge has a small positive effect on board strategy control (path = 0.310,  $p < 0.01$ ,  $f^2 = 0.127$ ), but no significant effects on EO (path = - 0.151,  $p = 0.09$ ,  $f^2 = 0.022$ ). Past performance has a small negative effect on board

strategy control (path = - 0.165,  $p < 0.05$ ,  $f^2 = 0.038$ ) and a small positive effect on EO (path = 0.248,  $p < 0.01$ ,  $f^2 = 0.073$ ).

Turning to the proposed hypotheses, our results show that local public ownership has a small negative effect on board strategy control (path = - 0.247,  $p < 0.01$ ,  $f^2 = 0.085$ ), supporting Hypothesis 1. With regard to the relationship of board strategy control and EO, we do not find a significant effect on EO (path = 0.167,  $p = 0.07$ ,  $f^2 = 0.025$ ), therefore there is no support for Hypothesis 2 with an opposite but nonsignificant direction of the hypothesized effect. The model shows a small positive moderation effect of local public ownership on the relationship between board networking and EO (path = 0.247,  $p < 0.05$ ,  $f^2 = 0.077$ ), which supports Hypothesis 3a. Furthermore, the direction of the relationship seems to depend on the ownership structure (Figure 7).



**Figure 7: The moderating effect of local public ownership on the board networking–EO relationship**

On average, that is, without the interaction term, board networking has no significant effect on EO (path = - 0.122,  $p = 0.16$ ,  $f^2 = 0.014$ ). For enterprises wholly owned by their local municipalities and/or districts, the direction of the path of board networking and EO is positive, whereas for public enterprises with minority shareholders in the sample the direction changes to negative. Therefore, we also find support for Hypothesis 3b.

Regarding our two final hypotheses, our model indicates that the social orientation has no significant effect on board strategy control (path = - 0.092,  $p = 0.12$ ,  $f^2 = 0.012$ ), but a small negative effect on EO (path = - 0.226,  $p < 0.01$ ,  $f^2 = 0.063$ ). Consequently, we do not find support for Hypothesis 4 but do for Hypothesis 5.

In order to account for the multiple perspectives involved in the study's underlying relationship between the BoD and top management, the findings were discussed in a workshop in October 2019 with board members from potential minority shareholders, CEOs of the enterprises in question, and consultants regularly attending board meetings in this particular context. The aim was to ensure the face validity of the findings from a practical perspective.

## **4.5 Discussion**

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Public enterprises are in a striking dilemma in which they are expected to act entrepreneurially and innovate, while at the same time working under the potential constraints imposed by close monitoring and political/social objectives of local government (Greer et al., 2003). Shedding light on this dilemma, the current article addressed the overall research question: *To what extent do board behavior and social orientation predict public enterprises' EO in respect of different ownership structures?* While we find arguments for social orientation impairing EO similar to ideas in the prior public-sector research (Cuervo & Villalonga, 2000), we reveal ownership structure to be an important concept predicting board strategy control and the board networking–EO relationship. This is a finding that has considerable implications for theory and practice.

### **4.5.1 Implications for theory**

Our study contributes novel theoretical insights at the intersection of governance and entrepreneurship. With reference to the two behavioral dimensions (strategy control and networking), we rely on the conceptual foundation of SAT and RDT that might be capable theories “to address issues of board governance in entrepreneurship research” (Gabrielsson & Huse, 2017, p. 53) as their use makes it possible to consider board behavior inside and outside the boardroom.

*First*, although organizational research has found substantial support for RDT following Pfeffer & Salancik (1978) that indicates a positive effect on performance (Drees & Heugens, 2013), the detailed findings presented here reveal that BoD networking activity affects EO differently depending on ownership structure. This means that interorganizational arrangements like interfirm network ties and equity holdings that potentially reduce external resource dependency and consequently improve firm performance, as originally intended by RDT (Pfeffer & Salancik, 1978), might not have that power in the context studied here. We therefore advance the idea of a fine-grained theory of RDT (Casciaro & Piskorski, 2005) by opening resource delivery for potential diametral effects in order to provide a deeper understanding of interorganizational action. To date, comparable research has relied on input-output modeling (e.g., Drees & Heugens, 2013; Zona et al., 2018). We overcome this limitation and advance theory by closely examining the relationship between board behavior and EO as relevant mediators.

*Second*, our study also presents a new perspective on board strategy control and its missing link with EO in the public sector. While private-sector studies already indicate the BoD control task has a positive effect on entrepreneurial posture and innovativeness (Deman et al., 2018; Gabrielsson, 2007; Gabrielsson & Politis, 2009), the public-sector research indicates a negative effect of a BoD composed predominantly of politicians (e.g., Sidki & Boll, 2019; Sørensen, 2007) and refers to a narrow state control perspective (e.g., Lioukas et al., 1993; Smith, 2012). Although board members nominated by the local public owners seeming to be less involved in ratifying and monitoring the strategy of the enterprise is a concern—on the grounds that public-sector reforms seek to create a modern public-sector BoD largely aligned with classical models of corporate governance (Chambers & Cornforth, 2010)—the missing link between strategy control and EO might be intentional. The board of a public enterprise is installed to ensure its democratic legitimization. Should the politicians on the board of public enterprises push the enterprise toward a more entrepreneurial posture through the exercise of control mechanisms as suggested in previous private-sector studies? Prior research has already discussed potential conflicts between democratic values (such as social orientation) and entrepreneurship (Bellone & Goerl, 1992) and the topic continues to stimulate academic

discussion (Liddle & McElwee, 2019). Interestingly, this is also taken account of in SAT as it incorporates the stakeholders' general interest in the continuing existence of the enterprise (Hill & Jones, 1992). Therefore, a BoD might balance conservative and entrepreneurial orientations and counteract entrepreneurial intentions only up to the point where the continuing existence of the enterprise is not in doubt.

#### **4.5.2 Implications for practice**

With reference to a *management* perspective, entering into resource dependencies via minority shareholders like hub firms might represent an entrepreneurial decision of the public enterprise: Activities like the outsourcing of risky undertakings without clear and certain outcomes might be part of public enterprises' strategy to increase long-term value and ensure adequate profits (OECD, 2015b) given that excessive risk-taking without stressing the other EO dimensions of innovativeness and/or proactiveness at the same time might be detrimental to performance (Kollmann & Stöckmann, 2014; Lomberg et al., 2017).

With reference to a *policy* perspective, recent board codes and guidelines (e.g., for municipally owned enterprises in Germany [Association of German Cities, 2009] and global guidelines for state-owned enterprises [OECD, 2015b]) primarily adopt a monitoring perspective while stressing the importance of the qualification requirements for a BoD, focusing on board composition and size, and restating the idea of minimizing political interference. Importantly, and mirroring some identified gaps in academic literature (Boivie et al., 2016), the above guides pay little attention to multidimensional board behavior *beyond* common board practices and legal duties (such as networking activity), even though this multidimensional perspective might help to achieve the BoD's goal of acting in the best interest of their public enterprise. Furthermore, local municipal BoDs still seem to be less involved in strategy control than enterprises holding minority shares, despite the former's board activity having great societal and democratic relevance and citizens relying on the monitoring activity of the board because of those citizens' dispersed ownership (Desender et al., 2013).

### 4.5.3 Limitations and future research

Three limitations of our study illuminate promising avenues for further research that will help to extend our knowledge on entrepreneurship and board practices in public enterprises.

*First*, even though we avoid the limitations of input-output models that can undermine the behavioral approach (Dalton et al., 1998; Gabrielsson, 2007), we are aware of that the study measures single respondents' perceptions of BoD behavior and EO. However, the consideration of multiple respondents might result in even more bias (Bauweraerts & Colot, 2017; Minichilli et al., 2009). We recognize that BoDs meet relatively rarely and that could limit their ability to develop informed perceptions of the constructs in question (Podsakoff et al., 2012; Zattoni et al., 2015). Further research might address this limitation by relying on ethnographic techniques, which would make it possible to investigate live activities and behavior inside and outside the boardroom on a longitudinal basis and from an individual-level perspective (Hoppmann et al., 2019). Accordingly, and with special reference to the revealed interaction effect, it would be valuable to consider potential effects on minority shareholders to address the fact that the current research limited its investigation to one side of the relationship (Zona et al., 2018).

*Second*, while this study's approach takes top management's perception of board behavior into account, we are aware of that some of the measurement scales are relatively untried (Boivie et al., 2016). However, we rely on previously used constructs in our study and take more recent findings into account (e.g., Gabrielsson & Politis, 2009). Furthermore, we addressed concerns over the reliability of the social orientation scale by providing a context-specific and unambiguous example within the construct (Lee & Duffy, 2019; Sackett & Larson, 1990). Nevertheless, future research might support establishing valid measurement scales by following the specific steps of a scale development process (Clark & Watson, 1995).

*Third*, we admit that a single-industry study limits the generalizability of the findings. However, we follow the recent call of Miller (2011) and the EO-related findings of Lomberg et al. (2017) that research in a specific context and on a particular organization type may increase the validity of the research findings, because, for example, using samples that are *too* heterogenous might create a risk of promoting a weak understanding of the sample's boundaries (Miller, 2011) even though those boundaries are especially important in governance and

entrepreneurship research (Boivie et al., 2016; Lomberg et al., 2017). Following this line of argumentation, we address the outdated view of the public sector being a homogenous monolith (Liddle & McElwee, 2019) as recent research reveals remarkable differences between public-sector organizations regarding entrepreneurial behavior (Bysted & Hansen, 2015; Smith, 2012, 2014). Future research in different contexts could help to provide further insights, especially regarding RDT, in that examining the relationship between board networking and EO as moderators could provide deeper insights into a hypothesized mechanism (Baron & Kenny, 1986).

#### **4.6 Conclusion**

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This study challenges prior literature that suggests the *municipal owner* of a public enterprise is the source of the inertia hindering entrepreneurial activities. However, we reveal *minority shareholders* exerting a negative effect on public enterprises' EO when engaging in networking activities. Consequently, this study advances research at the intersection of entrepreneurship and governance and clearly helps to understand the effects of board behavior on EO in public enterprises.



## Appendix of Section 4

**Table A3: Overview of measurement scales (latent variables)**

Construct with respective items	Scale	Reference
<b>Independent variables</b>		
<b>Board networking:</b>		
The board provides ...	Five-point Likert	Minichilli et al. (2009)
- ... linkages to important external stakeholders (banks, financial institutions, customers, public authorities ...).		
- ... the firm with external legitimacy and reputation.		
<b>Social orientation:</b>		
- The company is subject to severe restrictions in the selection of markets and products. For example, the demand for certain services must be satisfied regardless of the costs incurred by the company. / The company is not restricted in the selection of markets and products. For example, (unprofitable) customers can be excluded from the range of products.	Five-point semantic differential (reverse coded)	Based on Lioukas et al. (1993)
<b>Dependent variables</b>		
<b>Board strategy control:</b>		
Regarding the <i>ratifying stage of decisions</i> , the board is involved in the areas of:	Five-point Likert	Gabrielsson & Winlund (2000) and Gabrielsson (2007)
- Marketing and customers		
- Product development and technology		
- The competence among employees		
Regarding the <i>monitoring stage of decisions</i> , the board is involved in the areas of:		
- Marketing and customers		
- Product development and technology		
- The competence among employees		
<b>Entrepreneurial orientation (innovativeness):</b>		
- <i>In general, the top managers of my firm favor ...</i> A strong emphasis on the marketing of tried and true products or services / A strong emphasis on R&D, technological leadership, and innovations.	Five-point semantic differential	Covin & Slevin (1989)
- <i>How many new lines of products or services has your firm marketed in the past 5 years?</i> No new lines of products or services. / Very many new lines of products or services.		
- Changes in product or service lines have been mostly of a minor nature. / Changes in product or service lines have usually been quite dramatic.		
<b>Entrepreneurial orientation (proactiveness):</b>		
- <i>In dealing with its competitors, my firm ...</i> Typically responds to actions which competitors initiate. / Typically initiates actions which competitors then respond to.	Five-point semantic differential	Covin & Slevin (1989) and Lumpkin & Dess (2001)
- <i>In dealing with its competitors, my firm ...</i> Is very seldom the first business to introduce new products/services, administrative techniques, operating technologies, etc. / Is very often the first business to introduce new products/services, administrative techniques, operating technologies, etc.		
- <i>In general, the top managers of my firm have ...</i> A strong tendency to "follow the leader" in introducing new products or ideas. / A strong tendency to be ahead of other competitors in introducing novel ideas or products.		
<b>Entrepreneurial orientation (risk-taking):</b>		
- <i>In general, the top managers of my firm have ...</i> A strong proclivity for low-risk projects (with normal and certain rates of return). / A strong proclivity for high-risk projects (with chances of very high returns).	Five-point semantic differential	Covin & Slevin (1989)
- <i>In general, the top managers of my firm believe that ...</i> Owing to the nature of the environment, it is best to explore it gradually via timid, incremental behavior. / Owing to the nature of the environment, bold, wide-ranging acts are necessary to achieve the firm's objectives.		
- <i>When confronted with decision-making situations involving uncertainty, my firm ...</i> Typically adopts a cautious, "wait-and-see" posture in order to minimize the probability of making costly decisions. / Typically adopts a bold, aggressive posture in order to maximize the probability of exploiting potential opportunities.		

**Table A3: Overview of measurement scales (latent variables) (continued)**

Construct with respective items	Scale	Reference
<b>Control variables</b>		
<b>Hostility:</b>		
<ul style="list-style-type: none"> <li>- The failure rate of firms in my industry is high.</li> <li>- My industry is very risky, such that one bad decision could easily threaten the viability of my business unit.</li> <li>- Competitive intensity is high in my industry.</li> <li>- Customer loyalty is low in my industry.</li> <li>- Severe price wars are characteristic of my industry.</li> <li>- Low profit margins are characteristic of my industry.</li> </ul>	Five-point Likert	Green et al. (2008)
<b>Board knowledge:</b>		
<ul style="list-style-type: none"> <li>The board has extensive knowledge on the ...</li> <li>- ... activities of the key business functions.</li> <li>- ... firm's critical technologies and key competences.</li> <li>- ... firm's products and services.</li> <li>- ... developments regarding the firm's markets and customer needs.</li> </ul>	Five-point Likert	Minichilli & Hansen (2007), adjusted by Machold et al. (2011)
<b>Past performance:</b>		
<ul style="list-style-type: none"> <li>- The overall performance of my enterprise in the last three years has been very good relative to that of other energy suppliers.</li> </ul>	Five-point Likert	Based on Caruana et al. (2002)

**Table A4: Information on construct reliability and AVE**

Construct	Cronbach's alpha	$\rho_A$	Composite reliability	AVE
<b>Independent variables</b>				
Board networking	0.77	0.84	0.89	0.81
Social orientation	-	-	-	-
<b>Dependent variables</b>				
Board strategy control	0.83	0.86	0.87	0.53
Entrepreneurial orientation	0.79	-	0.88	0.71
<b>Control variables</b>				
Hostility	0.74	0.64	0.81	0.52
Board knowledge	0.91	0.93	0.94	0.79
Past performance	-	-	-	-

## 5. Discussion and conclusion

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In the final three sections of this dissertation, I will summarize the results and highlight the contributions of the individual studies as well as the contributions of the dissertation to research and practice as a whole (*Section 5.1*). Based on the remarks in *Section 5.1*, I will outline some promising paths for future research (*Section 5.2*). In the last section, I will close this dissertation with some final and summarizing thoughts (*Section 5.3*).

### 5.1 Summary and discussion of results

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The introduction to this dissertation outlined the importance of the public sector and its enterprises as impactful but unrecognized entrepreneurial actors (Bruton et al., 2015; Mazzucato, 2018). The dissertation subsequently shed light on entrepreneurship in public enterprises to fulfill the primary goal of deepening our understanding of entrepreneurship in the public sector and support the development of high-performing public enterprises. To do so, it addressed the overarching research question:

*What are the peculiarities of the public sector and how do they impact public enterprises' EO?*

To achieve the primary goal and to answer the above research question, the articles in this thesis extended the understanding of entrepreneurship in this public-sector context in the following ways: The SLR (*Section 2*) provided a solid foundation for the two following studies by providing an overview and analysis of previous research on PE. The extensive data collection exercise revealed 40 articles addressing entrepreneurship in public enterprises, with a particular focus on EO. The small number of relevant articles compared to the broad search string in three databases (see *Figure 2*) underlines the limited amount of research on this specific phenomenon: Research specifically on public enterprises has been obfuscated by privatization processes being the dominant global trend since the 1980s and thus hogging the research limelight (Bernier, 2011). The number of publications per year now reflects an upward trend (see *Figure 3*) and underlines the increasing volume of attention paid to the field as the phenomenon of public enterprises has recently been reinvigorated (Bernier & Reeves, 2018). When analyzing the 40 articles, I revealed that EO studies in the public sector remain scarce, leading to literature generally being biased toward studies of the private sector (e.g., Smith,

2012), which might have prompted the inadequate level of attention to public peculiarities such as institutional questions on government ownership. Ramamurti (1986) made important contributions to the field with pioneering thoughts on the topic. Kearney et al. (2007) built on these thoughts and developed the first conceptual model of PE. Subsequently, Kearney et al. (2010) and Kearney et al. (2013) followed this model and both studies found that EO did not apply to their mixed sample of public-sector organizations. Importantly, Smith (2012, 2014) deviated from this (inappropriate) approach of interpreting the public sector as an entity (Liddle & McElwee, 2019) and Smith (2012) did find support for the hypothesis that public enterprises have a significantly higher level of EO than other public organizations. Both articles (Smith, 2012, 2014) contributed extensively to the foundation of this dissertation as they explicitly focus on public enterprises, underlining their importance as entrepreneurial actors albeit with essential unanswered questions. Smith (2014) in particular highlights the important but to date neglected role of the governing body in this specific public context. One overarching finding of the SLR is that the stimulators of and barriers to EO in the public sector as well as potential outcomes of EO remain unclear (Kearney et al., 2009; Smith, 2014).

Consequently, the qualitative Study 2 (*Section 3*) focused on barriers to PE and potential outcomes of PE being inhibited within two different business segments. This study adopted an explorative CCM approach (Laukkanen, 2012). I examined sales and the distribution grid of 12 German (majority-)municipally owned energy suppliers through 18 semi-structured interviews. The consideration of the two different business segments was motivated by recent calls to differentiate the public sector instead interpreting it as a monolith entity (Liddle & McElwee, 2019) and additionally to define clear sample boundaries (Lomberg et al., 2017; Miller, 2011). Following from this line of argumentation, the results of the current study indicate that the segment-specific barriers contribute to prior calls for fine-grained research on PE depending on the context of the segment (Bysted & Hansen, 2015; Smith, 2014). This fine-grained perspective means that substantially different approaches to managing and stimulating the underlying dimensions of an EO might be required to enhance each segment's performance. Furthermore, Study 2 built on the extensive theoretical framework associated with NPM and NPG, which consider the institutional questions of ownership, and provides a detailed

comparative analysis of the results with literature referring to the private and the public sector. The extensive comparative analysis revealed that the barriers associated with the external environment such as legal constraints (e.g., Bernier, 2014) and those barriers arising from within the organization such as employee behavior linked to a value system hampering entrepreneurial thinking corroborate aspects discussed in prior research (e.g., Morris & Trotter, 1990; Mühlemeier, 2019). However, and of utmost importance, the results also show that a public enterprise's supervisory board can hinder its progress, thus revealing a feature that could distinguish public from private enterprises. This finding built the foundation of the third study of this dissertation.

Consequently, the quantitative Study 3 (*Section 4*) focused on this specific phenomenon when examining the impact of board behavior on public enterprises' EO. My co-authors and I combined SAT and RDT that was recently suggested to offer a "powerful conceptual [foundation] that can be used to address issues of board governance in entrepreneurship research" (Gabrielsson & Huse, 2017, p. 53) but had been neglected in prior research. In particular, SAT challenges some assumptions of the traditionally applied agency theory, which is predominantly used in the private sector (Boivie et al., 2016). Agency theory assumes that the board challenges the top management to support innovation and increase the long-term valuation of the firm (Fama & Jensen, 1983; Gabrielsson, 2007); however, SAT states that diversification of products and/or markets might stimulate resistance by the BoD (Hill & Jones, 1992). Therefore, SAT can be applied to support prior views on the topic indicating that entrepreneurial ideas might be filtered by the public enterprise's supervisory board (Bernier, 2014). We collected primary data from 110 German majority-governmental owned energy suppliers via a questionnaire. The results indicate that social orientation represses EO and while we did find some support for the reduced involvement of local public owners in BSC, we do not find a negative effect of BSC on EO. This finding contributes to two discussions in the research arena. First, the part of the finding reporting reduced involvement supports predictions referring to a lack of incentives and capacity problems afflicting the boards of public enterprises (e.g., in NIE). *Second*, the negative effect of BSC on EO predicted in SAT was not supported and the effect was even slightly positive, albeit not significant. Therefore, my co-authors and I

challenged the widespread prejudice that a BoD dominated by politicians generally has negative effects on the organization in question (e.g., Bernier, 2014; Sidki & Boll, 2019; Sørensen, 2007). It is particularly important to recognize the role of minority shareholders like mixed enterprises and hub firms. The former is often described as performing better than a public enterprise (e.g., Brouthers et al., 2007; Inoue et al., 2013; Megginson & Netter, 2001; Wright et al., 2000), and the latter as nurturing innovativeness and performance among the organizations they are affiliated to (Kolloch & Reck, 2017). However, my co-authors and I revealed a negative effect of the board networking–EO relationship when such enterprises hold minority shares in the focal public enterprise (Figure 7). This finding contributes to a fine-grained conceptualization of RDT and therefore advances comparable research by overcoming the limitations of input-output modeling (e.g., Zona et al., 2018). Overall, this study constitutes a major step forward regarding board behavior and its impact on EO in public enterprises in respect of different ownership structures. It especially challenges prior suggestions that politicians serving on a BoD might represent a general barrier to entrepreneurial activities. On a general level, this study consequently advances research at the intersection of entrepreneurship and governance.

With respect to the primary purpose of this dissertation of extending the understanding of entrepreneurship in the public sector and supporting the development of high-performing public enterprises in respect of the peculiarities of the public sector, I contribute to the academic literature in several ways.

First and most importantly, this dissertation sheds light on the fundamental but woefully underrecognized questions regarding government ownership. The theoretical framework building on the assumptions of NIE and public choice suggests that public and private enterprises differ in their behavior and performance (e.g., Cuervo & Villalonga, 2000). Public enterprises are expected to be less entrepreneurial, less efficient, and to perform worse than their private counterparts (Hinz & Ingerfurth, 2013; Martin & Parker, 1997). An important finding of this dissertation is that different ownership structures do not directly predict changes in EO, which addresses the research gap recorded in Table 3 in the SLR. Differences in ownership structure, however, do impact the involvement of a BoD in strategy control; a finding

that supports notions that a lack of incentive and lack of monitoring capacity can afflict boards of directors operating in the public sector (Blankart, 1983; Cahan et al., 2005; Davies, 1971). Generally, it is more a matter of the social orientation and board networking behavior of minority shareholders (if present) that repress the EO of public enterprises. Importantly, the finding referring to minority shareholders therefore represents a potentially contrasting finding to the often taken-for-granted proposition of stronger performance being attributed to mixed enterprises and the positive impact of hub firms (e.g., Inoue et al., 2013; Kolloch & Reck, 2017).

Second, the samples in both empirical studies in Sections 3 and 4 solely comprise German majority-government-owned energy suppliers. This dissertation therefore answers the recent but often unrecognized calls for research on a specific type of organization in a specific context (Lomberg et al., 2017; Miller, 2011). This approach of solely including a specific type of organization might confine generalizability, but may help to increase the validity of the research findings as this approach clearly defines the sample's boundaries (Miller, 2011). Such an approach is especially useful in public-sector research for the following reasons: First, the field commonly defines the public sector as a monopolistic entity that is relatively independent of external influences, which is inadequate (Liddle & McElwee, 2019). Second, remarkable differences in the entrepreneurial activities of public-sector organizations have been revealed in prior work (Morris & Jones, 1999; Smith, 2012, 2014). The finding was corroborated by the qualitative study in this dissertation revealing remarkable differences between two different business segments in German public enterprises. In general, this finding contributes to prior calls for fine-grained research on PE attuned to the context of the segment concerned (Bysted & Hansen, 2015; Smith, 2014). The differences in barriers and outcomes revealed mean that substantially different approaches to managing and stimulating the underlying entrepreneurial dimensions might be required to enhance each segment's performance.

The third, and most generally applicable contribution, is that the studies in this dissertation strengthen the perspective that EO is applicable and relevant in the public sector. The conflict of EO applicability was highlighted and discussed in the SLR (*Section 2*) (Kearney et al., 2010; Smith, 2012). This dissertation stresses the point that the public sector is not generally "incompatible with manifestations of entrepreneurialism" (Bernier, 2014, p. 258).

Overall, this dissertation sheds light on the peculiarities of the public sector by investigating the role of supervisory boards mainly comprising politicians. It constitutes a major step forward in illuminating board behavior in public enterprises and its effects on EO. My co-authors and I advance board-related theory as we found no support for the predictions of SAT but support for a fine-grained perspective on RDT.

In summary, this dissertation offered a systematic overview of the state of the art regarding entrepreneurship and EO in public enterprises (*Section 2*), shed light on unclear barriers to entrepreneurship and outcomes of entrepreneurship being inhibited (*Section 3*), and stressed the importance of the behavior of a public-sector BoD and its impact on a public enterprise's EO, given different ownership structures (*Section 4*). Consequently, this dissertation broadens the research stream of corporate entrepreneurship (e.g., Kuratko, 2017; Morris et al., 2011) and contributes to recent efforts to encourage a spillover of EO into the public sector (Covin & Wales, 2019; Martens et al., 2016). The dissertation therefore deepens the understanding of entrepreneurship in the public sector and supports the development of high-performing public enterprises.

In addition to the contributions to research mentioned above, several findings have important implications for practice. First, and with special reference to the third study (*Section 4*), we found local public ownership to predict a lower level of involvement in BSC. This finding seems especially important and demands further clarification. Board members representing the public owner (and therefore the citizens as the ultimate owners) have great societal and democratic relevance because citizens rely on their monitoring activity as the ownership of those citizens is too dispersed to monitor the enterprise accurately (Desender et al., 2013). Given that weaker controls might be explained by a lack of incentives and by monitoring capacity problems afflicting the BoD representing the local public owner (Boivie et al., 2016; Cahan et al., 2005; Hillman & Dalziel, 2003), e.g. because of excessive demands, it might be productive to increase collective action on the part of local citizens by increasing their participation in public enterprise's activity. For example, this could be done by extensive information provision of the citizens by the top management or direct power of co-decision of citizens on the enterprise's activities. Such an initiative could arm citizens with stronger



property rights and reduce the cost of monitoring public officials and thus lead to strengthening the incentive for a local public BoD to properly monitor the actions of the enterprise. Another way to increase the involvement in control activities of local boards of directors might be to reduce the potential impact of capacity problems by encouraging knowledge enhancement among such boards and allocating them enough time to complete their tasks properly (Boivie et al., 2016). Second, the repressing effect of board networking activities undertaken by minority shareholders on a public enterprise's EO might be an outcome of an entrepreneurial decision taken by the public enterprise. It might be valuable to outsource risky undertakings without clear and certain outcomes as this might be part of the public enterprise's strategy to ensure adequate profits (OECD, 2015b). At this point it should be noted that excessive risk-taking without simultaneously emphasizing the other EO dimensions of innovativeness and/or proactiveness might be detrimental to performance (Kollmann & Stöckmann, 2014; Lomberg et al., 2017) and consequently run counter to the firm's strategy. Furthermore, the repressing effect occasioned by minority shareholders undertaking board networking activities might help decision-makers in public enterprises to predict potential effects of changes in ownership structures on EO.

## ***5.2 Avenues for future research***

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Albeit each of the three included studies has its limitations that illuminate paths for future research, additional avenues may emerge from the content of this dissertation as a whole.

First, the treatment of the phenomenon of entrepreneurship in the public sector may generate new insights based on the importation of the concept of institutional logics, as already suggested by Miller (2011) in the context of the field of entrepreneurship in general. Institutional logics are defined as “the socially constructed, historical pattern of material practices, assumptions, values, beliefs, and rules by which individuals produce and reproduce their material subsistence, organize time and space, and provide meaning to their social reality” (Thornton & Ocasio, 1999, p. 804; see also Jackall, 1988 and Friedland & Alford, 1991). Interestingly, Miller (2011, p. 882) also pointed out that “corporate governance and the nature of ownership may...influence EO”, which prompts the important research question of how the

potentially different logics of politicians serving on the board and those of the top management of public enterprises might impact enterprises' EO (Mühlemeier, 2019). While almost neglected in PE research (with a few exceptions such as Gooneratne & Hoque, 2016 and Vining & Weimer, 2016), a promising but rare research example to build on is offered by Cho & Hambrick (2006) who focused on the attention of the top management team (TMT) being affected by the issues surrounding airline deregulation. The study found that deregulation induced the TMT to shift from a government logic to a market logic with a more entrepreneurial perspective. That shift was a consequence of the composition of the TMT: The advent of a higher proportion of managers with experience in marketing, sales, and research and development positively affected the entrepreneurial attentional perspective of the firm (Cho & Hambrick, 2006).

While this paper reveals several new insights regarding the effect of deregulation, a promising avenue for future research would be to capture institutional logics in the boardroom, and therefore to go *beyond* the investigation of the TMT. Such research could directly build on the findings of the qualitative study in this dissertation (*Section 3*) and Smith (2014, p. 719) who state that “[the board of] directors are politicians, and the interviewees stressed that because of the diverse political composition, discussion that they have taken part of in board meetings can be more political than business-oriented” and Olsen et al. (2017, p. 393) who state that “municipal corporate boards have become meeting-places for different institutional logics.” Research designs capable of capturing institutional logics would be most valuable because, in contrast to EO, such institutional logics are not directly measurable via questionnaires (Thornton & Ocasio, 1999). It is important to note that “there is very limited discussion about how [institutional logics] can be identified, described, and measured” (Reay & Jones, 2016, p. 442). Qualitative studies of the activity in the boardroom might produce a more accurate picture if they were to utilize a combination of documents, interviews, and observations (Hoppmann et al., 2019). Such studies would extend prior work which has often tried to measure institutional logics via (automated) text analysis capturing the terms used in corporate documents on the grounds that “the cognitive categories through which individuals attend to the world are embedded in the words they use” (Cho & Hambrick, 2006, p. 459) (in general, see also Whorf,

1956 and Thornton & Ocasio, 1999 for more information on the topic of measurement and the linguistic background).

Second, another promising research avenue is offered by comparative studies. This conclusion is based on recent fundamental questions posed regarding CE in the public sector such as "...might it be that concepts and theories from the corporate entrepreneurship are so context specific and limited in perceived usefulness because public sector organizations are so different that they require an entirely different theoretical and methodological approach?" (Liddle & McElwee, 2019, p. 1317). Future studies could build on prior attempts, such as that of Kearney et al. (2013) using a sample of 192 private enterprises from the United States/Slovenia and 134 public organizations from Ireland. Unfortunately, these attempts were incomplete as they did not incorporate EO into their model and inadequately defined the sample's boundaries when considering the public sector as an entity. Research in a similar comparative setting could make an important contribution to answering recent calls to broaden the concepts of CE and EO (e.g., Covin & Wales, 2019; Kuratko, 2017; Liddle & McElwee, 2019).

Although this dissertation has shown that EO positively correlates with past performance in respect of German majority-government-owned energy suppliers, there remains scope for far more investigation into those mechanisms that have already been examined in the private-sector context. For example, this dissertation tested the predictions of SAT regarding potentially contrary effects of BSC on EO compared to the effects reported in the private sector but found no support for such effects from its data. It would be valuable to compare models of *public and private enterprises* working in the same market environment, such as public and private enterprises in the German energy market. While such a line of research might end up comparing public and private firms dichotomously (as criticized by Bruton et al. (2015) with respect to prior studies), such a constellation would ensure a focus on specific types of organizations (public and private enterprises in the German energy market) (Bysted & Hansen, 2015; Smith, 2014) which is often not recognized (e.g., Kearney et al., 2010; Kearney et al., 2013; Kearney & Morris, 2015).

It is not only the classic public/private sector comparisons that would seem valuable for future research; it might also be interesting to compare the impact of the governmental owner on EO in public enterprises in *democratic and non-democratic countries* according to the established categorization of democracy indexes (see, e.g., Munck & Verkuilen, 2002; Acemoglu et al., 2019; Roser, 2020). Non-democratic situations might involve higher levels of political freeriding leading to sub-optimal performance of the country's enterprises (Cornett et al., 2010; Shleifer & Vishny, 1997) as the effects of corruption in politics seem also to affect post-privatization market structures (Acemoglu & Robinson, 2013; Bjorvatn & Søreide, 2005).

Third, the current COVID-19 pandemic has led to a global economic and (even more importantly) social crisis. These crises are global and have suddenly impaired economies (Kuckertz et al., 2020). One effect has been to highlight how important are high-performing public enterprises and their services to meet a general public interest (Bernier, 2014; Gaspar et al., 2020). Current research addresses the importance of those services particularly in the form of public enterprise's contribution to fostering low-income entrepreneurship in developing and advanced economies (Morris et al., 2020) as well as accelerating private-sector growth in general (Klein et al., 2010; Mazzucato, 2018). It remains the case that the measurement of performance of public enterprises with special reference to public value is still a major gap in academic literature (Faulkner & Kaufman, 2018; Klein et al., 2010; Voorn et al., 2020). Although this dissertation has addressed the potential outcomes of PE within two different business segments in public enterprises in a qualitative manner, general research has tested only a very small number of quantitative measures to date (Faulkner & Kaufman, 2018). Of those quantitative measures, “[none was] developed in a manner that could be consistently applied across all government contexts. Instead, all measures were specific to the contexts for which they were developed and covered only some dimensions of public value” (Faulkner & Kaufman, 2018, p. 80). Future research could therefore focus on the formulation of reliable measurement scales of public value that are devised according to the specific steps of such a development process (Clark & Watson, 1995; DeVellis, 2003). It would be valuable for future research to include the perspectives on public value of different stakeholders (e.g., public administration and local citizens). That approach would contribute to the required holistic view

on the topic of public value and would also make it possible to test the relationship between EO and public value to enhance the knowledge on EO in the public sphere.

In sum, all the above potential avenues for future research would contribute to the under-researched topic of entrepreneurship in the public sector (Liddle & McElwee, 2019; Martens et al., 2016) and embed the idea of entrepreneurship in territory beyond that of classic private-sector corporates to support the development of high-performing public enterprises.

### **5.3 Conclusion**

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In conclusion, this dissertation has shed light on corporate entrepreneurship in the public sector. It highlights the currently underrated relevance of government as an essential entrepreneurial actor and has illuminated the shadowy status of public enterprises in the public-sector entrepreneurialism research context. Therefore, this dissertation refers to the special setting of public enterprises working in liberalized market environments and the behavior of their BoD. However, I am aware that this dissertation only takes a first step toward generating a holistic picture of public enterprises and its EO. As part of a general overview on the topic, I have acknowledged the work's limitations and the still under-researched but important topics that represent promising avenues for future research. Overall, I am confident that this dissertation helps to sharpen the picture of public enterprises in entrepreneurship research and thus supports the development of a high-performing public sector with powerful enterprises.

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