



**Entrepreneurship in different institutional contexts:
A testimony to why context matters**

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Abstract

Entrepreneurship scholars are increasingly interested in understanding the inherent heterogeneity of entrepreneurship and the conditions under which it occurs. One promising direction to study the multifaceted nature of entrepreneurship is the *entrepreneurship in context debate* which places entrepreneurship within its contextual boundaries to study how, when, and why entrepreneurship takes place. However, mainstream entrepreneurship research mostly pertains to Western contexts, studying high-growth and technology-oriented ventures in Europe and the United States. In fact, institutional contexts beyond the borders of the Western world largely remain underrepresented, leaving scholars with an incomplete understanding of how different institutional contexts shape entrepreneurship and vice versa. This dissertation contributes to the emerging *entrepreneurship in context debate* by providing a more nuanced understanding of the contextual elements that affect entrepreneurship in different institutional contexts as well as by shedding light on how entrepreneurship unfolds in the context of institutional uncertainty. It examines the contextual boundaries of the Knowledge Spillover Theory of Entrepreneurship on the country level, identifying entrepreneurial absorptive capacity and infrastructure as contextual boundaries that determine the conditions under which the theory holds and the extent to which it unfolds. Further, it explores how the Strategic Reference Point Theory unfolds in the context of institutional uncertainty, revealing limitations to its applicability and proposing specific components that need to be incorporated into the theory for it to be applicable in contexts of institutional uncertainty.

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List of Abbreviations

BCERC	Babson College Entrepreneurship Research Conference
KSTE	Knowledge Spillover Theory of Entrepreneurship
RENT	Research in Entrepreneurship and Small Business
R&D	Research and Development
SRPT	Strategic Reference Point Theory

1 Introduction

About three decades ago, entrepreneurship emerged from the broader management literature as a distinct field of research. Hence, in comparison to other bodies of scholarship, such as strategic management or organizational behavior, entrepreneurship is a rather new field of research (Carlsson et al., 2013). For much of its young history, the entrepreneurship field had to defend its legitimacy, justifying how entrepreneurship as a subject of analysis differs from other empirical phenomena studied in the management literature (e.g., Bruyat & Julien, 2001; Shane & Venkataraman, 2000; Venkataraman, 1997). With the first conceptual framework of entrepreneurship, Shane and Venkataraman (2000) developed one of the seminal pieces of the entrepreneurship field that provided the theoretical foundation for subsequent entrepreneurship scholarship and that still shapes how we understand entrepreneurship today – as the “*discovery and exploitation of profitable opportunities*” (Shane & Venkataraman, 2000, p. 217).

In subsequent years, entrepreneurship as a field of research gained momentum (Carlsson et al., 2013; Chandra, 2018), providing a distinct space for the development of invaluable and ground-breaking entrepreneurship theory. For much of its development, the entrepreneurship field was focused on Western contexts (Welter, Baker & Wirsching, 2019). Entrepreneurship scholars largely developed, tested, and refined entrepreneurship theory based on ventures with “*elite*” characteristics, such as growth-oriented, technology-focused, and venture capital-backed (George et al., 2023, p. 1), from the United States or Europe, investigating entrepreneurship from a rather narrow perspective (Welter et al., 2019). This tight focus on ventures with elite characteristics has established the “Silicon Valley Model” of entrepreneurship as the prevailing subject of analysis in the entrepreneurship literature today (Audretsch, 2021; Audretsch, Lehmann & Schenkenhofer, 2021).

However, entrepreneurship in its very nature is a multifaceted phenomenon that is much more diverse than the Silicon Valley Model of entrepreneurship suggests (Herrmann, 2019). Many different types of entrepreneurs, e.g., opportunity-motivated versus necessity-motivated, formal versus informal, or innovation-oriented versus self-employed, exist both within and beyond the Western world that may or may not classify as the typical Silicon Valley Model entrepreneur (Welter et al., 2017). Likewise, the dominant focus on studying entrepreneurship in Western contexts and developing theory based on observations and data from Western countries limits theory relevance for contexts beyond the Western world. Hence, the impact of existing entrepreneurship research and entrepreneurship theory largely pertains to the Western world, disregarding a considerable proportion of the world population (United Nations, 2022).

One fruitful avenue that advances the scholarly understanding of the complex nature of entrepreneurship both within and beyond the Western world is the “*entrepreneurship in context debate*” (Welter et al., 2019, p.320). This debate recognizes the heterogeneity of contexts and their differential impact on entrepreneurship and encourages scholars to embrace and study entrepreneurship from a contextualized perspective (Audretsch et al., 2022a; Low & MacMillan, 1988; Welter & Baker, 2021). It is based on the premise that the prevalent view on entrepreneurship does not account for the inherent heterogeneity of entrepreneurship and the multiplicity of contexts in which entrepreneurship occurs. Frederike Welter, Ted Baker, David Audretsch, and William Gartner accurately summarize the debate in their 2017 editorial with the following quote: “*Looking at the ‘other’ is looking at entrepreneurship. There is no one type of entrepreneurship. No one best way. No ideal context. No ideal type of entrepreneur. Differences matter, and, if we actually believe this, then, we need to be looking for where, when, and why those differences matter most*” (Welter et al., 2017, p. 318).

While this quote appeals to entrepreneurship scholars to broaden their perspectives on entrepreneurship and the role of context, it also implicitly hints at the challenges this endeavor might pertain. In fact, it points towards the multiplicity of context and the endless research opportunities it offers which raises the question of what context means for entrepreneurship research. As Welter et al. (2019, p. 327) rightfully note: “*everything can be contextualized, everything can become context for something else*”. Hence, contextualization also bears the risks of endlessness and we need a frame that provides us with boundaries for studying entrepreneurship in context. Here, the “*When and Where*” dimensions as proposed by Whetten (1989, p. 492) help us to define these boundaries and understand what context entails for entrepreneurship (Welter, 2011). While the “*When*” dimension pertains to historical influences that affect entrepreneurship and context over time, the “*Where*” dimension points to the different contexts in which entrepreneurship takes place (Welter, 2011). Examples of the “*Where*” dimension include the study of social environments (e.g., social ties), spatial characteristics (e.g., entrepreneurship in communities), or formal (e.g., laws and regulations) and informal institutional influences (e.g., culture and religion) (e.g., Fritsch, Sorgner & Wyrwich, 2019; Meoli et al., 2020; Vladasel et al., 2021).

Following these calls for contextualization of entrepreneurship and entrepreneurship theory, an increasing number of entrepreneurship scholars have incorporated context into their studies in its various forms (e.g., Audretsch & Belitski, 2017; Chambers & Munemo, 2019; Lehmann, Schenkenhofer & Wirsching, 2019). One of these research streams centers on the “*Where*” dimension as proposed by Whetten (1989). Scholars contributing to this particular research stream study the influence of different institutional contexts on entrepreneurship (e.g., Audretsch & Fiedler, 2023; Audretsch, 2023; Bosma et al., 2018; Urbano, Aparicio & Audretsch, 2019), drawing on institutional theory as introduced by North (1990).

Institutional theory in entrepreneurship considers the social, political, or economic environments in which entrepreneurs operate that determine the ‘rules of the game’ (Bylund & McCaffrey, 2017; North, 1990). Specifically, institutional theory distinguishes between formal and informal institutions (North, 1990). Formal institutions account for government structures, legal regulations, policies, and political influences that may encourage or restrain entrepreneurship within countries, regions, or cities (Bjørnskov & Foss, 2016). Informal institutions are regarded as soft and subtle contextual factors including culture, religion, values, and norms of a society that equally set the boundaries within which entrepreneurship takes place (Boudreaux, Nikolaev & Klein 2019). Similar to formal institutions, informal institutions can be discouraging or supportive of entrepreneurship (Webb, Khoury & Hitt, 2020). Incorporating both formal and informal institutions into their studies, scholars are increasingly interested in understanding the contextual factors that explain the differences in entrepreneurial activity across and within different countries (e.g., Aparicio, Urbano & Audretsch, 2021; Aparicio, Urbano & Audretsch, 2016; Audretsch et al., 2022b).

For instance, Chowdhury, Audretsch, and Belitski (2019) find a highly nuanced relationship between institutions and the rate and quality of entrepreneurship in both developed and developing countries. Interestingly, they discover that not all institutions are of equal importance, but that the effect of specific institutions differs depending on the level of economic development of a country (Chowdhury et al., 2019). Similarly, Boudreaux et al. (2019) investigate the relationship between cognitive traits and opportunity entrepreneurship across different countries and find that the strength of this relationship strongly depends on the institutional context.

Mair and Marti (2009) investigate entrepreneurship in rural Bangladesh and illustrate how local entrepreneurs address the institutional voids they face. Likewise, Sydow et al., (2022) explore how entrepreneurs in Sub-Saharan Africa work around weak formal

institutions to achieve their goals. They find that entrepreneurs in developing countries respond to these weak formal institutions by focusing on both commercial and social goals simultaneously, by approaching business relationships strategically, and by becoming micro-institutional agents (Battilana, Leca & Boxenbaum, 2009) that contribute to institutional change (Sydow et al., 2022). Reflecting these findings against research on Silicon Valley Model entrepreneurs who operate in Western contexts that are characterized by strong institutions (Braunerhjelm & Henrekson, 2013) again highlights the need to recognize the heterogeneity of entrepreneurship and how context influences entrepreneurship.

In essence, over the past years, entrepreneurship scholars started to incorporate other institutional contexts into their studies and have already generated invaluable knowledge of how context shapes entrepreneurship and vice versa (Autio et al., 2014). However, despite these recent efforts, institutional contexts beyond the Western world remain underrepresented or as Chandra (2018, p. 20) puts it remain “*marginalized*” in entrepreneurship research, leaving us with an incomplete understanding of how entrepreneurship emerges and unfolds in these contexts (George et al., 2023).

1.1. Research objectives

Building on the “*entrepreneurship in context debate*” this dissertation explicitly recognizes the value of contextualizing entrepreneurship and entrepreneurship theory and sets out to explore both in multiple contexts. The research objective of this dissertation is threefold. First, it aims to provide a more nuanced understanding of the contextual elements that affect entrepreneurship in different institutional contexts (manuscript one and manuscript two). Second, it aims to shed light on how entrepreneurship unfolds in a context that to date is presumably under-represented in entrepreneurship research – the context of institutional uncertainty (manuscript three). Third, using two established theories that were implicitly

developed in Western contexts, this dissertation further aims to explore how their prevailing assumptions unfold beyond the contexts in which they were developed. Specifically, this dissertation investigates the contextual boundaries of the Knowledge Spillover Theory of Entrepreneurship (KSTE) (Audretsch, 1995) on the country level (manuscript one and manuscript two) as well as explores the applicability of the Strategic Reference Point Theory (SRPT) (Fiegenbaum, Hart & Schendel, 1996) in the context of institutional uncertainty (manuscript three). In essence, this dissertation aims to answer the following research questions:

1. How do institutional context factors influence the emergence of entrepreneurship on the country level?
2. How does entrepreneurship unfold in the distinct context of institutional uncertainty?
3. How does the Knowledge Spillover Theory of Entrepreneurship manifest on the country level?
4. How does the Strategic Reference Point Theory manifest in the context of institutional uncertainty?

To address these research objectives and research questions, this cumulative dissertation examines entrepreneurship across different institutional contexts from different angles. It consists of three manuscripts, as detailed below. Manuscript one “*The role of entrepreneurial absorptive capacity for knowledge spillover entrepreneurship*” focuses on the emergence of knowledge spillover entrepreneurship across different institutional contexts. It shows that knowledge spillover entrepreneurship is not only dependent on the availability of knowledge but also on the level of entrepreneurial absorptive capacity within a country. Thereby, it contextualizes knowledge spillover entrepreneurship and highlights entrepreneurial absorptive capacity as a contextual boundary condition of the KSTE. The

second manuscript “*Revisiting the knowledge spillover paradox: The impact of infrastructure*” sheds light on the role of different types of physical and digital infrastructure in knowledge spillover entrepreneurship. Using a sample of 57 countries, it identifies specific types of infrastructure that promote knowledge spillover entrepreneurship.

Manuscript three “*The role of reference points for entrepreneurs' strategic decision-making in contexts of institutional uncertainty*” investigates how entrepreneurial activity unfolds in a particular context of extremes - the context of institutional. Specifically, it explores how entrepreneurs set their strategic goals despite being subject to severe institutional uncertainty. Based on interview data with 48 entrepreneurs from Sub-Saharan Africa, the study reveals that the use of reference points that are frequently employed in Western contexts proves to be rather challenging. Instead, entrepreneurs make use of informal ‘soft’ reference points to set their strategic goals. Figure 1 visualizes the relationship between the three individual manuscripts.

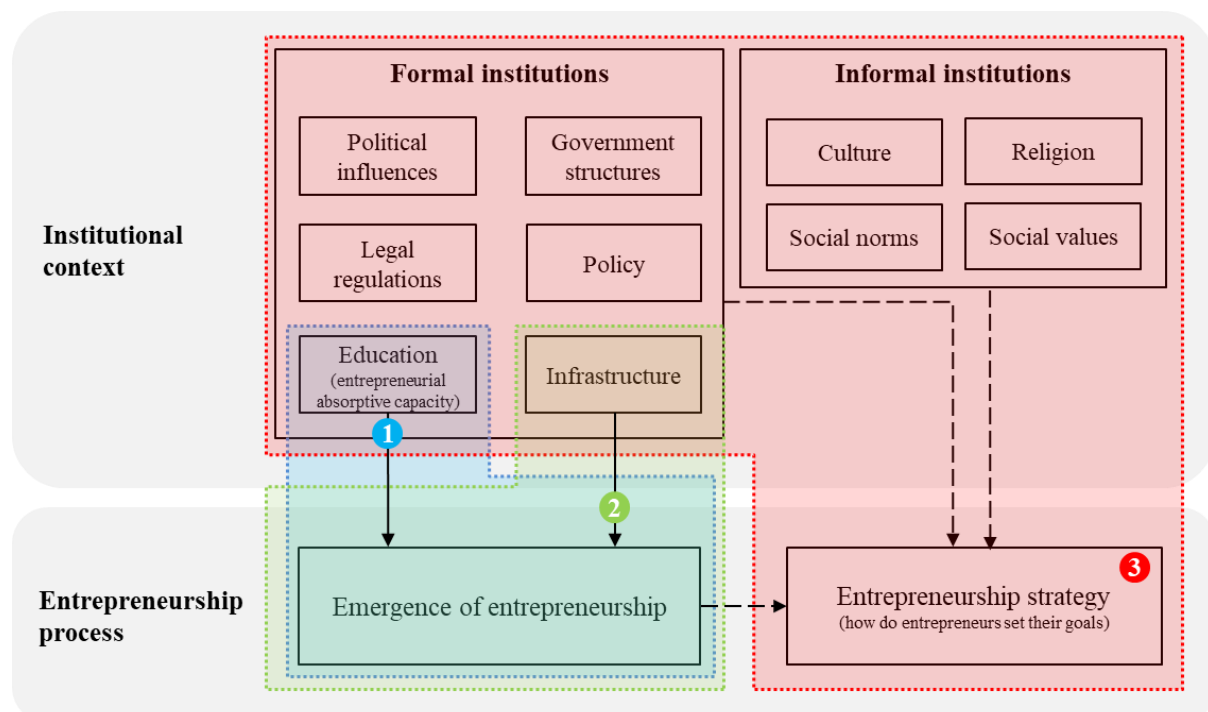


Figure 1 Interrelationships between the three manuscripts

1.2. Dissertation outline

This dissertation is structured as follows. First, it introduces the theories that provide the theoretical foundation for the three manuscripts and presents the scholarly conversations to which the manuscripts contribute. Second, it summarizes the scholarly contribution of this dissertation. Chapter two provides an overview of the three manuscripts and presents the publication status of each manuscript. Chapter three consists of the individual manuscripts as they were submitted to academic journals. This dissertation concludes by presenting and synthesizing the contribution of the individual manuscripts, and by discussing the managerial implications, limitations, and future research opportunities.

1.3. Theoretical background

The following section introduces the Knowledge Spillover Theory of Entrepreneurship (Audretsch, 1995) and the Strategic Reference Point Theory (Fiegenbaum et al., 1996) as the underlying theories which the manuscripts of this dissertation are based upon. It further provides an overview of the specific literature streams pertaining to the two theories.

1.3.1. The knowledge spillover theory of entrepreneurship

1.3.1.1. Knowledge, entrepreneurship, and economic growth

One prominent entrepreneurship theory that has been developed over the past decades and that has received increasing scholarly attention is the Knowledge Spillover Theory of Entrepreneurship (KSTE) (e.g., Audretsch & Belitski, 2021; Audretsch & Keilbach, 2007; Plummer & Acs, 2014). Rooted in endogenous growth theory (Romer, 1994), the KSTE explains how regional knowledge generation translates into entrepreneurial activity and economic growth (Acs et al., 2009; Acs & Sanders, 2013; Audretsch, 1995). In particular, it

suggests that incumbent organizations continuously generate new knowledge through research and development (R&D) activities but are sometimes unwilling or unable to appropriate it (Ghio et al., 2015). While incumbent organizations may ascribe low economic value to generated knowledge (e.g. due to knowledge not being aligned with their core product or processes) and decide against commercialization, other economic agents may recognize its economic potential, ascribe a higher value to it than the incumbent, and decide to develop it into a new venture (Acs et al., 2009). Hence, new knowledge as generated through R&D activities does not necessarily dissolve within incumbent organization but instead may spill over to economic agents who subsequently decide to commercialize it.

To date, entrepreneurship scholars have studied the KSTE extensively and have generated important insights into the commercialization of knowledge by economic agents – an outcome that I refer to as knowledge spillover entrepreneurship hereafter. In fact, a plethora of studies empirically confirms the positive relationship between knowledge, knowledge spillover entrepreneurship, and economic growth, investigating the KSTE on the city level (e.g., Iftikhar, Ahmad & Audretsch, 2020; Tavassoli, Obschonka & Audretsch, 2021), the regional level (e.g., Audretsch, Bönnte & Keilbach, 2008; Audretsch & Keilbach, 2008) and the country level (e.g., Acs et al., 2012; Braunerhjelm et al., 2010). Scholars attribute this positive relationship to the innovative nature of the knowledge that underlies knowledge spillover entrepreneurship which is often associated with radical or even disruptive innovation (Audretsch & Belitski, 2021) and which has the potential to significantly contribute to countries' economic growth. Due to its potential impact on economic growth, knowledge spillover entrepreneurship presents a particularly promising innovation policy vehicle to stimulate economic activity.

1.3.1.2. Contextualizing the knowledge spillover theory of entrepreneurship

One central debate in the KSTE literature focuses on the extent to which knowledge translates into entrepreneurial activity and economic growth. While the endogenous growth theory assumes knowledge to spillover automatically (Romer, 1990), KSTE scholars argue that knowledge spillovers to entrepreneurship may be constrained by what they refer to as “*the knowledge filter*” (e.g., Acs et al., 2004; Audretsch & Belitski, 2013; Braunerhjelm et al., 2010). The knowledge filter accounts for the systematic barriers that impede the translation of knowledge from incumbent organizations into knowledge spillover entrepreneurship and economic growth. Especially institutional characteristics including bureaucracy, legal regulations, and culture, among others, represent potential barriers to entrepreneurship (Audretsch & Belitski, 2021; Stenholm, Acs & Wuebker, 2013) and determine the “*thickness*” of the knowledge filter (Audretsch & Belitski, 2013, p. 820).

Recent research identifies the human capital endowment of a context as one of the mechanisms that may penetrate the knowledge filter or as Qian and Jung (2017, p. 99) argue “*solve the knowledge filter puzzle*”. In particular, Qian and Acs (2013) develop the entrepreneurial absorptive capacity theory of knowledge spillover entrepreneurship. The theory suggests that “*the ability of an entrepreneur to understand new knowledge, recognize its value, and subsequently commercialize it by creating a firm*” (Qian & Acs, 2013, p. 191) plays an essential role in the emergence of knowledge spillover entrepreneurship.

Complementing earlier studies on entrepreneurial absorptive capacity, Qian and Jung (2017) distinguish between the regional endowment of cognitive and technical capacity as two different types of entrepreneurial absorptive capacity and show that both types are effective contextual mechanisms for reducing the knowledge filter and fostering knowledge spillovers to entrepreneurship.

Building on this stream of literature, manuscript one of this dissertation, “*The role of entrepreneurial absorptive capacity for knowledge spillover entrepreneurship*” quantitatively investigates the impact of entrepreneurial absorptive capacity on the relationship between knowledge and knowledge spillover entrepreneurship on the country level. Specifically, it investigates in what way entrepreneurial absorptive capacity as an institutional context factor reduces the “*thickness*” of the knowledge filter (Audretsch & Belitski, 2013, p. 820).

Next to entrepreneurial absorptive capacity, KSTE scholars have identified further mechanisms that may reduce the knowledge filter and foster knowledge spillover entrepreneurship (e.g., Audretsch & Belitski, 2013; Audretsch, Belitski & Korosteleva, 2021). In fact, existing research reveals other contextual characteristics play a role in reducing the knowledge filter (Ghio et al., 2015). For instance, Kim, Kim, and Yang (2012) analyze how the regional innovation infrastructure affects entrepreneurial activity. The authors identify specific contextual factors to be supportive of penetrating the knowledge filter and fostering entrepreneurship, including synergistic university and government R&D, lower tax rates, and habitual factors, among others (Kim et al., 2012). Likewise, Huggins & Thompson (2015) argue that knowledge spillover entrepreneurship partially depends on spatial dynamics, specifically the configuration of regional knowledge networks that enable knowledge diffusion among economic agents. In essence, the context in which the KSTE is studied strongly impacts how, if, and to what extent knowledge spillover entrepreneurship unfolds and contributes to economic growth.

With manuscript two, “*Revisiting the knowledge spillover paradox: The impact of infrastructure*”, I contribute to the scholarly understanding of contextual characteristics as a means to reduce the knowledge filter and foster knowledge spillover entrepreneurship on the country level. The macro-level study quantitatively investigates how different types of

physical and digital infrastructure impact the emergence of knowledge spillovers to entrepreneurship.

1.3.2. The strategic reference point theory

1.3.2.1. Strategic reference points in entrepreneurship

Another important topic that has gained increasing scholarly interest is the role of reference points in entrepreneurship (e.g., André, Cho & Laine, 2018; Bouncken et al., 2020; Siebold, 2021). Reference points also referred to as organizational goals or aspirations, are defined as benchmarks against which organization evaluate their performance (André et al., 2018; Shinkle, 2012). One prominent theory that describes the nature of reference points is the Strategic Reference Point Theory (SRPT) (Fiegenbaum et al., 1996). Building on prospect theory (Kahneman & Tversky, 1979), the SRPT suggests that the discrepancy between organizations' aspirations and actual performance determines their subsequent strategic behavior (Fiegenbaum et al., 1996). According to the SRPT, organizations behave risk-averse when they perform above their reference points and risk-taking when they perform below their reference points (Fiegenbaum et al., 1996).

Next to describing these dynamics, Fiegenbaum et al. (1996) developed the strategic reference point matrix which distinguishes between three different reference point dimensions that firms use to assess their performance. These dimensions include internal capabilities, external capabilities, and time (Fiegenbaum et al., 1996). While internal capabilities include strategic inputs, such as cost reduction or sales, external capabilities refer to the influence of external stakeholders, such as competitor performance, industry benchmarks, or customer needs. The time dimension pertains to the organization's historical or anticipated future performance (Fiegenbaum et al., 1996).

As reference points are of strategic importance for organizations and their future performance, it is highly valuable to better understand how they are selected and used (Nason, Mazzelli & Carney, 2019; Siebold, 2021). Prior work has already generated important insights into the role of reference points for strategic decision-making (e.g., Barbosa et al., 2019; Wennberg et al., 2016). Specifically, prior work finds that organizations use a variety of reference points to measure their performance and guide strategic behavior (Nason, Baq & Gras, 2017; Kreisner et al., 2020). These reference points include but are not limited to historical performance, industry benchmarks, and competitor performance (e.g., Shinkle, 2012; Kotlar et al., 2014), whereby recent research suggests that organizations ascribe particular importance to external benchmarks (Posen et al., 2018; Siebold, 2021). Likewise, other studies identify reference points as relevant for firm growth and survival (Wennberg et al., 2016).

1.3.2.2. Contextualizing the strategic reference point theory

Albeit being relevant and highly valuable for the entrepreneurship field, the implicit focus of prior reference point studies on Western contexts leaves us with an incomplete understanding of how the SRPT manifests in institutional contexts that differ from the Western world. In fact, previous research indicates that reference points are highly dependent on context (Wennberg et al., 2016). Specifically, Gooding, Goel, and Wiseman (1996) and other scholars (e.g., Posen et al., 2018; Sharapov & Ross, 2023) argue that the institutional context in which organizations operate strongly affects the use of reference points. The authors identify economic conditions and industry performance as institutional context factors that shape how reference points are employed by organizations. This suggests that it is important to broaden our perspective and to better understand the role of reference points for entrepreneurship in institutional contexts beyond the Western world. One particular context

of interest is the context of institutional uncertainty which refers to contexts that are characterized by a misalignment of different institutions, resulting from weak formal institutions (Bylund & McCaffrey, 2017). These contexts present entrepreneurs with a highly volatile and unpredictable business environment to navigate (Barasa et al., 2017). In particular, the lack of formal institutional support exposes entrepreneurs that operate in these contexts to uncertain market conditions (Sydow et al., 2020) and may require these entrepreneurs to use different reference points than entrepreneurs in Western contexts.

Contributing to this stream of literature, manuscript three, “*The role of reference points for entrepreneurs' strategic decision-making in contexts of institutional uncertainty*”, explores how the SRPT manifests in the context of institutional uncertainty. It relies on interviews to investigate how entrepreneurs in Sub-Saharan Africa use reference points for strategic decision-making.

1.4. Contribution of the dissertation

This dissertation makes several important theoretical contributions to the entrepreneurship literature that advance the scholarly understanding of the role of the institutional context for entrepreneurship and entrepreneurship theory. By exploring how the KSTE and the SRPT unfold beyond the contexts in which they were developed, this dissertation also provides interesting empirical contributions. The contributions are presented below.

1.4.1. Theoretical contribution

First, this dissertation contributes theoretically to the emerging literature on the KSTE by highlighting the contextual boundary condition under which the theory holds on the country-level (manuscript one). Specifically, it identifies entrepreneurial absorptive capacity as a decisive contextual element for the emergence of knowledge spillover entrepreneurship. The

results reveal that a high level of entrepreneurial absorptive capacity is a boundary condition for the KSTE to hold on the country level. In essence, this study identifies entrepreneurial absorptive capacity as an essential institutional context factor that needs to be acknowledged in both future studies but also by policy makers as it determines the extent to which knowledge spillover entrepreneurship occurs. Specifically, institutional contexts that are rich in entrepreneurial absorptive capacity reduce the “thickness” of the knowledge filter (Audretsch & Belitski, 2013, p. 820) and reap the benefits of knowledge spillover entrepreneurship, while those contexts that lack entrepreneurial absorptive capacity are characterized by an abundance of knowledge spillover entrepreneurship.

Second, this dissertation further contributes to the scholarly conversation on institutional context factors as a means to reduce the knowledge filter and foster knowledge spillover entrepreneurship (manuscript two). The findings of manuscript two show that knowledge spillovers to entrepreneurship are amplified by the development of certain types of digital and physical infrastructure. In particular, the findings reveal that the quality of the railroad infrastructure, the quality of electricity supply, and access to fixed broadband internet foster knowledge spillover entrepreneurship. In conclusion, the findings suggest that specific types of digital and physical infrastructure need to be recognized and treated as essential contextual elements that impact the extent to which knowledge translates into knowledge spillover entrepreneurship and ultimately economic growth.

Third, this dissertation contributes to the strategic reference point literature and sheds light on how an institutional context of extremes – the context of institutional uncertainty – affects how entrepreneurs use reference points to measure their performance (manuscript three). It contributes to the scholarly understanding of the institutional constraints that entrepreneurs in these contexts encounter and the strategic responses of entrepreneurs to manage these constraints. Overall, this dissertation provides valuable insights into how

different institutional context factors affect the emergence of entrepreneurship as well as how entrepreneurship unfolds, highlighting the need for future studies to contextualize entrepreneurship and proving that context does matter.

1.4.2. Empirical contribution

Lastly, this dissertation has interesting empirical contributions. By introducing the KSTE and the SRPT to new institutional contexts, it explores whether the prevailing assumptions of these theories also hold beyond the institutional contexts in which they were developed. Specifically, the KSTE is tested using a sample of 58 countries (manuscript one) and 67 countries (manuscript two) which both include a large proportion of countries beyond the Western world. Interestingly, manuscript one suggests that the KSTE does not necessarily hold on the country level but that a certain institutional context factor (entrepreneurial absorptive capacity) is required for it to hold. Likewise, manuscript two shows that other institutional context factors (physical and digital infrastructure) determine the extent to which the KSTE manifests. Overall, these findings point to the fact that the spillover logic of the KSTE and the extent to which it unfolds partially depend on institutional context factors.

With manuscript three, this dissertation introduces the SRPT which was implicitly focused on the use of reference points in Western contexts, to the context of institutional uncertainty. It finds that some of the reference points that constitute the SRPT are also used by entrepreneurs in contexts of institutional uncertainty while the use of other reference points proves to be rather challenging. Hence, manuscript three suggests that the SRPT cannot be applied one-to-one to contexts of institutional uncertainty but that the theory needs to be reworked and extended by additional reference points that are specific to contexts of institutional uncertainty.

2 Research manuscript overview

2.1. Manuscript information

This cumulative dissertation comprises three manuscripts that investigate the topics illustrated above. Table 1 presents the three manuscripts and provides an overview of the different topics, methodologies, and samples used.

Table 1 Manuscript overview

	Manuscript 1	Manuscript 2	Manuscript 3
Title	The role of entrepreneurial absorptive capacity for knowledge spillover entrepreneurship	Resolving the knowledge spillover paradox: The impact of infrastructure	The role of reference points for entrepreneurs' strategic decision-making in contexts of institutional uncertainty
Research question	What is the role of entrepreneurial absorptive capacity for knowledge spillover entrepreneurship?	Which infrastructural factors influence the knowledge spillover mechanism?	How do entrepreneurs in contexts of institutional uncertainty use reference points for strategic decision-making?
Methodology	Quantitative (Ordinary Least Squares Regression)	Quantitative (Ordinary Least Squares Regression)	Qualitative (Interviews)
Sample	58 countries	67 countries	48 entrepreneurs
Theory	The Knowledge Spillover Theory of Entrepreneurship (Audretsch, 1995)	The Knowledge Spillover Theory of Entrepreneurship (Audretsch, 1995)	The Strategic Reference Point Theory (Fiegenbaum et al., 1996)

This dissertation sets out to provide a more nuanced understanding of the contextual elements that affect entrepreneurial activity in different institutional contexts as well as how entrepreneurial activity unfolds. Manuscript one and manuscript two take a country-level perspective and investigate how specific institutional context factors, entrepreneurial absorptive capacity, and infrastructure, impact the emergence of entrepreneurial activity. Manuscript three zooms into a particular context of extremes - the context of institutional uncertainty - and examines how entrepreneurial activity unfolds, specifically, how entrepreneurs set their strategic goals.

As illustrated in Table 1, this dissertation is based on empirical data and consists of two quantitative studies and one qualitative study. Combining both quantitative and qualitative methods in this dissertation allows for the contextualization of entrepreneurship and entrepreneurship theory from different perspectives. While the quantitative research design enabled me to introduce the Knowledge Spillover Theory of Entrepreneurship to the country-level context and test its applicability and its boundary conditions, the qualitative research design provides the basis to inductively explore how entrepreneurship as a phenomenon unfolds in the context of institutional uncertainty.

Manuscripts one and two of this dissertation are based on deductive quantitative analyses. In quantitative analyses, scholars deduct hypotheses about the relationship between variables from existing theories and subsequently test the hypotheses with empirical data (Kennedy & Thornberg, 2018). A variety of quantitative analyses are frequently used in macro-level entrepreneurship research (e.g., Anokhin & Wincent, 2012; Boudreaux et al., 2019; Mrożewski & Kratzer, 2017). Accordingly, deductive quantitative analyses represent an appropriate research method for examining the impact of institutional context factors on the knowledge spillover mechanism. Manuscript one and manuscript two of this dissertation

both appropriate quantitative analyses and take a macro-level perspective on entrepreneurship to analytically compare variations of institutional context factors across different countries.

Manuscript three is based on interviews with 48 entrepreneurs and follows a systematic inductive approach as proposed by Gioia, Corley, and Hamilton (2013) to investigate how entrepreneurs use reference in contexts of institutional uncertainty. The systematic inductive approach is frequently used to develop grounded theory in research areas that are characterized by limited theory development (Gioia et al., 2013). As it lays special emphasis on the contexts in which phenomena occur (Strauss & Corbin, 1998), it represents an appropriate and highly promising approach to studying entrepreneurship in contexts of institutional uncertainty. Each interview was analyzed in line with the coding techniques proposed by Strauss and Corbin (1998) and Gioia et al. (2013) using the software MAXQDA. First, the open coding technique generated first-order concepts which were subsequently combined under second-order themes (Strauss & Corbin, 1998; Gioia et al., 2013). Applying axial coding, these second-order themes were distilled into aggregate dimensions (Strauss & Corbin, 1998; Gioia et al., 2013). Throughout this process, the emerging concepts, themes, and dimensions were iteratively reflected against existing literature to relate them to prior theory (Gioia et al., 2013). Based on this data analysis, we developed a grounded model that illustrates how entrepreneurs in contexts of institutional uncertainty use reference points for strategic decision-making.

2.2. Publication status

The three manuscripts that are part of this dissertation were submitted to academic journals. Table 2 provides an overview of the publication status of each manuscript including the journal it was submitted to. Manuscript one was submitted to the journal *Small Business Economics: An Entrepreneurship Journal* on the 16th of December 2021 and subsequently

published after one revision round on the 5th of June 2022. Prior to being published, the manuscript was presented at the Research in Entrepreneurship and Small Business (RENT) Conference 2021 in Turku, Finland, and the Babson College Entrepreneurship Research Conference (BCERC) 2022 in Waco, Texas. Manuscript two was submitted to the journal *Small Business Economics: An Entrepreneurship Journal* on the 20th of January 2023, received a revise and resubmit on the 25th of April 2023, and was published on the 25th of October 2023. Manuscript three was submitted to the journal *Journal of Business Venturing* on the 17th of April 2023 and passed the desk reject. Prior to its submission, manuscript three was also presented at the BCERC 2022 in Waco, Texas where it was selected as one of the top 40 papers which entails publication of an abridged manuscript version in the 2022 edition of BCERC *Frontiers of Entrepreneurship Research Proceedings*.

Table 2 Publication status of manuscripts

No.	Manuscript title	Authors	Journal	Status	Points
1	The role of entrepreneurial absorptive capacity for knowledge spillover entrepreneurship	Ronja Kirschning Matthias Mrożewski	Small Business Economics	Published	1.25
2	Revisiting the knowledge spillover paradox: The impact of infrastructure	Ronja Kirschning Matthias Mrożewski	Small Business Economics	Published	1.25
3	The role of reference points for entrepreneurs' strategic decision-making in contexts of institutional uncertainty	Ronja Kirschning Sönke Mestwerdt René Mauer Matthias Mrożewski	Journal of Business Venturing	Beyond desk reject	1.5
Sum					4

3 Manuscripts

3.1. Manuscript one

**The role of entrepreneurial absorptive capacity for
knowledge spillover entrepreneurship**

Authors	Ronja Kirschning & Matthias Mrożewski
Journal	Small Business Economics (B)
Status	Published
Citation	Kirschning, R., & Mrożewski, M. (2023). The role of entrepreneurial absorptive capacity for knowledge spillover entrepreneurship. <i>Small Business Economics</i> , 60(1), 105-120.

3.2. Manuscript two

**Revisiting the knowledge spillover paradox:
the impact of infrastructure**

Authors	Ronja Kirschning & Matthias Mrożewski
Journal	Small Business Economics (B)
Status	Published
Citation	Kirschning, R., & Mrożewski, M. (2023). Revisiting the knowledge spillover paradox: the impact of infrastructure. <i>Small Business Economics</i> , 1-20.

3.3. Manuscript three

**The role of reference points for entrepreneurs' strategic decision-making
in contexts of institutional uncertainty**

Authors	Ronja Kirschning, Sönke Mestwerdt, René Mauer, Matthias Mrożewski
Journal	Journal of Business Venturing (A)
Status	Beyond desk reject

4 Conclusion

4.1. Theoretical contributions

This dissertation contributes to the emerging scholarly debate on the role of context in entrepreneurship (Welter et al., 2019). To date, entrepreneurship theory has been predominantly developed and studied in Western contexts, establishing the “Silicon Valley Model” of entrepreneurship as the prevailing subject of analysis in the entrepreneurship literature (Herrmann, 2019). This focus on Western contexts comes as no surprise. Entrepreneurship as a field that is still in its infancy offers ample research opportunities and it naturally makes sense to study the phenomenon of interest in a context for which data is both available and accessible.

However, the true nature of entrepreneurship is more complex than the literature suggests (Chandra, 2018). The “*entrepreneurship in context debate*” (Welter et al., 2019, p. 320) embraces the diversity of entrepreneurship and context and provides a promising direction to advance the scholarly understanding of the multifaceted nature of entrepreneurship by incorporating the role of context into entrepreneurship research. Likewise, the current call for papers by the *Journal of Management Studies* on “*Recalibrating Entrepreneurship Research: A Call to Decolonize and Embrace the Pluralism of Entrepreneurial Activity*” is another testimony to the increasing interest of scholars to acknowledge the diversity of entrepreneurship and context and move away from solely focusing on ventures with “elite” characteristics (George et al., 2023). George et al. (2023, p. 3) explicitly welcome “*contributions that reveal, question and combat latent Western assumptions in entrepreneurship research*”, pointing scholars in the direction of exploring entrepreneurship in contexts beyond the Western world.

One particular research stream in this debate explores how different institutional contexts affect entrepreneurship (e.g., Audretsch et al., 2022b; Chowdhury et al., 2019),

acknowledging the inherent heterogeneity of institutional contexts and the differential effects these contexts have on entrepreneurship. This dissertation contributes to this stream of literature by providing a more nuanced understanding of the contextual elements that affect entrepreneurship in different institutional contexts (manuscript one and manuscript two) and by shedding light on how entrepreneurship unfolds in a context that to date is presumably under-researched - the context of institutional uncertainty (manuscript three). The specific theoretical contributions of the manuscripts that constitute this dissertation are detailed below.

4.1.1. Contextualizing the knowledge spillover theory of entrepreneurship

Manuscript one “*The role of entrepreneurial absorptive capacity for knowledge spillover entrepreneurship*” and manuscript two “*Revisiting the knowledge spillover paradox: The impact of infrastructure*” investigate the KSTE across countries, analysing specific institutional context factors that potentially encourage or constrain the emergence of knowledge spillover entrepreneurship. Thereby, the two manuscripts contribute to answering research question one of this dissertation: *How do institutional context factors influence the emergence of entrepreneurship?* The findings of both studies are of significant interest to the scholarly understanding of the role of context in the KSTE.

The findings of manuscript one reveal that the knowledge spillover mechanism is dependent on the level of entrepreneurial absorptive capacity within a country. Interestingly, the findings show that the relationship between knowledge and knowledge spillover entrepreneurship is not uniformly positive on the country level, but that the level of entrepreneurial absorptive capacity within a country determines the direction of the relationship. While the relationship is positive in countries with high levels of entrepreneurial absorptive capacity, the relationship is negative in countries with low levels of

entrepreneurial absorptive capacity. This signifies that for knowledge spillover entrepreneurship to emerge, economic agents need to be able to understand the value of knowledge and need the ability to commercialize it as signified by high levels of entrepreneurial absorptive capacity (Qian & Acs, 2013; Qian & Jung, 2017). These insights resonate with research by Qian, Acs & Stough (2013) who argue that knowledge generation is not sufficient for increasing knowledge spillover entrepreneurship.

The findings further suggest that in contexts with low levels of entrepreneurial absorptive capacity, economic agents lack the capabilities to exploit knowledge spillover opportunities and are pushed into employment instead of engaging in entrepreneurship. In essence, manuscript one indicates that a high level of entrepreneurial absorptive capacity is a boundary condition for the KSTE to hold at the country level. Thereby, it highlights the importance of incorporating entrepreneurial absorptive capacity into entrepreneurship studies as one institutional context factor that plays a role in the emergence of entrepreneurship on the country level.

Complementing the findings of manuscript one, manuscript two shows that specific types of physical and digital infrastructure determine the extent to which knowledge translates into entrepreneurship on the country level. It reveals that the quality of the railroad infrastructure, the quality of electricity supply, and access to fixed broadband internet foster knowledge spillover entrepreneurship, while other types of infrastructure including the quality of roads, the quality of air transportation, and mobile phone subscriptions, are insignificant for the emergence of knowledge spillover entrepreneurship. These findings suggest that those types of physical infrastructure that encourage physical interactions among economic agents allow for the diffusion of knowledge between these agents. Likewise, the types of digital infrastructure that enable economic agents to virtually interact with each other and facilitate access to data through websites, social media, or blogs (Autio et al., 2018;

Goswami, Mitchell & Bhagavatula, 2018; Thompson, Purdy & Ventresca, 2018) enable knowledge sharing among economic agents and, thereby stimulate knowledge spillover entrepreneurship. In conclusion, manuscript two identifies specific types of digital and physical infrastructure as institutional context factors that impact the extent to which knowledge translates into knowledge spillover entrepreneurship on the country level.

4.1.2. Contextualizing the strategic reference point theory

Manuscript three “*The role of reference points for entrepreneurs' strategic decision-making in contexts of institutional uncertainty*” shows how the SRPT unfolds in the context of institutional uncertainty, by exploring how entrepreneurs in this context use reference points to measure their performance. Specifically, it answers research question two of this dissertation: *How does entrepreneurship unfold in the distinct context of institutional uncertainty?*. The findings of this interview-based study illustrate that entrepreneurs in contexts of institutional uncertainty are severely constrained in their use of some of the reference points as proposed by the SRPT (Fiegenbaum et al., 1996; Shinkle, 2012) that are frequently used in Western contexts. While entrepreneurs strongly rely on the use of internal capabilities, such as economic resources or team capacity, to set their strategic goals, the use of external reference points beyond customer feedback proves to be highly challenging. The dominant focus on internal reference points may be ascribed to the difficulties of getting access to external data that is available and of sufficient quality. In fact, entrepreneurs in these contexts perceive access to reliable competitor data, industry benchmarks, and governmental data as highly challenging. These findings are of significant interest to the scholarly conversation on how entrepreneurs use reference points for strategic decision-making as they expose parts of the SRPT to only pertain to Western contexts.

Manuscript three further sheds light on how entrepreneurs in contexts of institutional uncertainty cope with the difficulties they face in applying some of the reference points that are traditionally used in Western contexts. The findings reveal that entrepreneurs in contexts of institutional uncertainty rely on informal institutions or what we refer to as informal ‘soft’ reference points to set their strategic goals. Specifically, entrepreneurs use the local culture, distant reference groups from abroad, e.g., companies with similar business models from the United States, Europe, or Asia, their network, as well as their personal upbringing, and immediate social environment as reference points. These informal ‘soft’ reference points can be regarded as substitutes that provide entrepreneurs in the context of institutional uncertainty with input to set their strategic goals. This finding resonates with previous research that has already identified informal institutions as an instrument to work around the challenges imposed by institutional voids contexts (Sydow et al., 2022; Webb et al., 2022). In essence, by identifying the boundaries of the SRPT in contexts of institutional uncertainty and by shedding light on how entrepreneurs cope with the challenges that their context imposes, manuscript three extends the SRPT and highlights the need to recognize the role of context in entrepreneurship and entrepreneurship theory.

4.2. Synthesis of findings

Overall, the findings of the three manuscripts provide a deeper understanding of the role of context in entrepreneurship. Investigating two theories that were implicitly developed in Western contexts, this dissertation sheds light on how their prevailing assumptions unfold beyond the borders of the Western world.

Specifically, this dissertation examines the contextual boundaries of the KSTE on the country level, asking *how does the knowledge spillover theory of entrepreneurship manifest on the country level?*. The findings indicate that the KSTE does not necessarily hold when

investigated on the country level. In fact, certain contextual boundaries, entrepreneurial absorptive capacity, and different types of digital and physical infrastructure define whether the KSTE holds on the country level or determines the extent to which knowledge translates into knowledge spillover entrepreneurship. This indicates that the sole availability of knowledge is not enough for knowledge spillover entrepreneurship to emerge but rather that its emergence is contingent on the level of entrepreneurial absorptive capacity and certain types of digital and physical infrastructure. These insights are highly interesting and relevant for the “*entrepreneurship in context debate*” (Welter et al., 2019, p.320) as they show that the KSTE is only applicable to macro-level entrepreneurship research under certain contextual conditions. By highlighting the contextual boundaries of the KSTE, this dissertation highlights the need for contextualizing established entrepreneurship theories and appeals to scholars to test other theories in contexts beyond the ones in which they were developed.

Next to examining the contextual boundaries of the KSTE, this dissertation explores the SRPT in the context of institutional uncertainty, asking *how does the strategic reference point theory manifest in the context of institutional uncertainty?* By introducing the SRPT to the context of institutional uncertainty, this dissertation tests the theory’s applicability in a context that to date is largely under-researched in mainstream entrepreneurship research (Chandra, 2018). The findings of the study show that there are indeed boundaries to the applicability of the SRPT in contexts of institutional uncertainty, indicating that the theory needs to be extended to fit this kind of context. At the same time, this dissertation identifies the specific reference point components that need to be part of the SRPT for it to be applicable in contexts of institutional uncertainty.

In essence, this dissertation responds to scholars’ calls in the entrepreneurship literature to question established assumptions of entrepreneurship theories and test these theories in contexts beyond the borders of the Western world (Chandra, 2018; George et al.,

2023). The results are highly relevant for the ongoing “*entrepreneurship in context debate*” (Welter et al., 2019), as they expose the contextual boundaries of theories that were implicitly developed in Western contexts. In fact, they are testimony to the need of scholars to move from the “one-size-fits-all” perspective to a pluralist view of entrepreneurship. Overall, these findings again represent an excellent example of the need for entrepreneurship scholars to acknowledge the multiplicity of context and the differential effects contexts have on the emergence of entrepreneurship as well as on how entrepreneurship unfolds (George et al., 2023; Welter et al., 2017).

4.3. Practical implications

Next to contributing to different scholarly conversations as highlighted above, this dissertation has several important practical implications for both policymakers and for entrepreneurs which are presented below.

4.3.1. Implications for policymakers

While policymakers already recognize the potential entrepreneurship has to boost the economy and contribute to economic growth, the question of how to encourage entrepreneurship effectively remains difficult to answer. The findings of this dissertation shed light on some of the measures that policymakers can use to encourage entrepreneurship within their countries. First, the findings suggest that policymakers should strengthen specific formal institutions in their country. Specifically, they are advised to invest in education institutions with a focus on science, math, and reading to increase the quality of the education they provide to students, boosting academic excellence. By elevating the quality of education institutions, policymakers can increase the level of entrepreneurial absorptive capacity within

their country, enabling economic agents to understand the value of knowledge and to commercialize it into an entrepreneurial venture.

This dissertation further identifies the quality of specific types of physical and digital infrastructure as effective instruments to encourage entrepreneurship. Policymakers can invest in the railroad infrastructure to enhance the mobility of people and the diffusion of knowledge through increased interactions. In particular, policymakers can approach the investment in the railroad infrastructure from two perspectives. On the one hand, they can invest in the expansion of the railroad network to remote areas, providing railroad access to a larger amount of passengers. Thereby, a more diverse group of people interacts and exchanges knowledge during train rides which in turn increases the potential for the emergence of knowledge spillover entrepreneurship. On the other hand, policymakers can enhance the attractiveness of trains and the potential for knowledge diffusion by creating spaces on trains that allow for increased interaction among passengers by reducing barriers that might inhibit interaction. These spaces can be designed using proven concepts that have successfully enabled knowledge-sharing in different domains, such as co-working spaces (Bouncken et al., 2023). For instance, Bouncken et al. (2019) identify informal encounters in shared spaces, such as cafés, to stimulate knowledge exchange between individuals. Policymakers can draw on the findings from these associated bodies of literature that provide guidance on designing spaces that enable knowledge exchange.

Next to elevating the quality of the railroad infrastructure, policymakers can foster knowledge spillover entrepreneurship by investing in the fixed broadband infrastructure, providing access to a larger amount of people, and enhancing the quality of electricity supply through the expansion of power grids. These two types of digital infrastructure provide economic agents with access to the internet, enabling economic agents to interact with each other and share knowledge through various digital channels. Providing economic agents with

an infrastructure that allows instant sharing of knowledge may also manifest in an increasing amount of economic agents engaging in knowledge spillover entrepreneurship. In essence, these findings suggest that the physical and digital infrastructure should not only be treated as a distinct policy vehicle to improve transportation or accelerate digitalization but should instead be part of the innovation policy of countries.

4.3.2. Implications for entrepreneurs

This dissertation also provides important insights for entrepreneurs that operate in contexts of institutional uncertainty. By investigating which reference points find applicability in these contexts, this dissertation provides prospective entrepreneurs with information on how their peers set the strategic goals of their venture. While this dissertation does not evaluate the effectiveness of the specific reference points that are being used, it supplies an overview of the reference points that are predominantly used, providing prospective entrepreneurs with a range of reference points they can potentially employ. Likewise, it raises awareness for the use of reference points for strategic decision-making in general, signifying to prospective entrepreneurs that reference points can potentially be valuable input when developing their strategic goals.

4.4. Limitations and future research opportunities

Although this dissertation makes several important theoretical and practical contributions, it is not without inherent limitations. These limitations largely stem from the respective research designs of the three manuscripts and, albeit being limitations, also represent promising avenues for future research.

While the macro-level focus of manuscript one and manuscript two enables us to examine the impact of different institutional context factors – entrepreneurial absorptive

capacity and infrastructure – on the emergence of entrepreneurship across countries, this cross-sectional research design does not provide definitive evidence for a causal relationship. We have taken several measures to address these causality issues including time lags of different lengths¹ and, therefore, are confident that our findings provide valid insights into the knowledge spillover mechanism on the country level. Nevertheless, future research is advised to investigate the influence of different institutional context factors on the emergence of entrepreneurship using panel estimation techniques to provide definite evidence for the causal relationship.

Another limitation related to the research design of manuscript one and manuscript two is the employed unit of analysis – the country level. According to the literature, knowledge spillover entrepreneurship is a regional phenomenon that predominantly emerges in knowledge-intensive hubs around the world e.g. larger cities that represent focal points of academic education or R&D heavy industries (e.g., Audretsch & Keilbach, 2008; Audretsch & Lehmann, 2005; Qian, 2018). While these regional differences are not accounted for by our country-level research design, they are well worth investigating in future studies. Especially the interplay between regional-level and city-level contextual factors may impact the emergence of knowledge spillover entrepreneurship and, therefore, present very interesting units of analysis to examine in future research studies.

In contrast to the country-level focus of manuscript one and manuscript two, the third manuscript employs a research design that is centered on individual entrepreneurs that operate in the context of institutional uncertainty. This choice of a specific context may affect the generalizability of our findings (Gioia, 2021) and, therefore, represents a potential limitation of this study. In fact, the interviews were conducted with largely educated entrepreneurs from Nairobi, one of the major entrepreneurship hubs in Sub-Saharan Africa

¹ For more information on the measures taken to address the causality issues that are inherent to our research design, please refer to the respective sections in manuscript one and manuscript two.

(Värlander et al., 2020). The background of these entrepreneurs and this entrepreneurship-supportive ecosystem may not be representative of other dominant forms of entrepreneurship in contexts of institutional uncertainty, such as informal entrepreneurship, and the places in which they occur, such as rural Kenya. Hence, it would be highly interesting and valuable for future research to investigate how different types of entrepreneurs use reference points in other geographic regions that differ to an even greater extent from the Silicon Valley Model of Entrepreneurship.

Lastly, manuscript three provides highly interesting and valuable insights into the use of reference points by entrepreneurs in contexts of institutional uncertainty but it does not evaluate the effectiveness of the reference points that are predominantly used in this context. While the use of some of these reference points has been established in Western contexts for a longer period and has been accepted as valuable input for setting strategic goals (Shinkle, 2012), the effectiveness of those reference points that are specific to the context of institutional uncertainty still needs to be studied. Sharapov and Ross (2023) provide a starting point for this endeavor, hinting that distant reference points may be more effective than close reference points in uncertain contexts. Hence, future research may build on this and investigate the effectiveness of the use of other informal ‘soft’ reference points, culture, network, personal upbringing, and social environment, as identified in manuscript three for setting strategic goals.

5 BIBLIOGRAPHY

- Acs, Z. J., Audretsch, D. B., Braunerhjelm, P., & Carlsson, B. (2004). The missing link: The knowledge filter and entrepreneurship in endogenous growth. *Available at SSRN 667944*.
- Acs, Z. J., Audretsch, D. B., Braunerhjelm, P., & Carlsson, B. (2012). Growth and entrepreneurship. *Small Business Economics*, 39, 289-300.
- Acs, Z. J., Braunerhjelm, P., Audretsch, D. B., & Carlsson, B. (2009). The knowledge spillover theory of entrepreneurship. *Small Business Economics*, 32(1), 15-30. DOI: <https://doi.org/10.1007/s11187-008-9157-3>
- Acs, Z. J., & Sanders, M. W. (2013). Knowledge spillover entrepreneurship in an endogenous growth model. *Small Business Economics*, 41, 775-795.
- André, K., Cho, C. H., & Laine, M. (2018). Reference points for measuring social performance: Case study of a social business venture. *Journal of Business Venturing*, 33(5), 660-678.
- Anokhin, S. & Wincent, J. (2012). Start-up rates and innovation: A cross-country examination. *Journal of International Business Studies*, 43(1), 41-60. DOI: 10.1057/jibs.2011.47
- Aparicio, S., Urbano, D., & Audretsch, D. (2016). Institutional factors, opportunity entrepreneurship and economic growth: Panel data evidence. *Technological forecasting and social change*, 102, 45-61.
- Aparicio, S., Audretsch, D., & Urbano, D. (2021). Why is export-oriented entrepreneurship more prevalent in some countries than others? Contextual antecedents and economic consequences. *Journal of World Business*, 56(3), 101177.
- Audretsch, D. B. (1995). *Innovation and industry revolution*. MIT press.
- Audretsch, D. B. (2021). Have we oversold the Silicon Valley model of entrepreneurship?. *Small Business Economics*, 56, 849-856.
- Audretsch, D. B. (2023). Institutions and entrepreneurship. *Eurasian Business Review*, 1-11.
- Audretsch, D. B., & Belitski, M. (2013). The missing pillar: The creativity theory of knowledge spillover entrepreneurship. *Small Business Economics*, 41, 819-836.
- Audretsch, D. B., & Belitski, M. (2017). Entrepreneurial ecosystems in cities: establishing the framework conditions. *The Journal of Technology Transfer*, 42, 1030-1051.
- Audretsch, D. B., & Belitski, M. (2021). Frank Knight, uncertainty and knowledge spillover entrepreneurship. *Journal of Institutional Economics*, 17(6), 1005-1031.
- Audretsch, D. B., Belitski, M., Caiazza, R., Günther, C., & Menter, M. (2022a). From latent to emergent entrepreneurship: The importance of context. *Technological Forecasting and Social Change*, 175, 121356.

- Audretsch, D. B., Belitski, M., Caiazza, R., & Desai, S. (2022b). The role of institutions in latent and emergent entrepreneurship. *Technological Forecasting and Social Change*, *174*, 121263.
- Audretsch, D. B., Belitski, M., & Korosteleva, J. (2021). Cultural diversity and knowledge in explaining entrepreneurship in European cities. *Small Business Economics*, *56*, 593-611.
- Audretsch, D. B., Bönte, W., & Keilbach, M. (2008). Entrepreneurship capital and its impact on knowledge diffusion and economic performance. *Journal of business venturing*, *23*(6), 687-698.
- Audretsch, D. B., & Fiedler, A. (2023). Does the entrepreneurial state crowd out entrepreneurship?. *Small Business Economics*, *60*(2), 573-589.
- Audretsch, D. B., & Keilbach, M. (2007). The theory of knowledge spillover entrepreneurship. *Journal of Management studies*, *44*(7), 1242-1254.
- Audretsch, D. B., & Keilbach, M. (2008). Resolving the knowledge paradox: knowledge-spillover entrepreneurship and economic growth. *Research Policy*, *37*(10), 1697-1705.
- Audretsch, D. B., & Lehmann, E. E. (2005). Does the knowledge spillover theory of entrepreneurship hold for regions?. *Research policy*, *34*(8), 1191-1202.
- Audretsch, D. B., Lehmann, E. E., & Schenkenhofer, J. (2021). A context-choice model of niche entrepreneurship. *Entrepreneurship Theory and Practice*, *45*(5), 1276-1303.
- Autio, E., Kenney, M., Mustar, P., Siegel, D., & Wright, M. (2014). Entrepreneurial innovation: The importance of context. *Research policy*, *43*(7), 1097-1108.
- Autio, E., Nambisan, S., Thomas, L. D., & Wright, M. (2018). Digital affordances, spatial affordances, and the genesis of entrepreneurial ecosystems. *Strategic Entrepreneurship Journal*, *12*(1), 72-95.
- Barasa, L., Knoben, J., Vermeulen, P., Kimuyu, P., & Kinyanjui, B. (2017). Institutions, resources and innovation in East Africa: A firm level approach. *Research Policy*, *46*(1), 280-291.
- Barbosa, S. D., Fayolle, A., & Smith, B. R. (2019). Biased and overconfident, unbiased but going for it: How framing and anchoring affect the decision to start a new venture. *Journal of Business Venturing*, *34*(3), 528-557.
- Battilana, J., Leca, B., & Boxenbaum, E. (2009). How actors change institutions: towards a theory of institutional entrepreneurship. *The academy of management annals*, *3*(1), 65-107.
- Bjørnskov, C., & Foss, N. J. (2016). Institutions, entrepreneurship, and economic growth: what do we know and what do we still need to know?. *Academy of Management Perspectives*, *30*(3), 292-315.

- Bosma, N., Content, J., Sanders, M., & Stam, E. (2018). Institutions, entrepreneurship, and economic growth in Europe. *Small Business Economics*, *51*, 483-499.
- Boudreaux, C. J., Nikolaev, B. N., & Klein, P. (2019). Socio-cognitive traits and entrepreneurship: The moderating role of economic institutions. *Journal of Business Venturing*, *34*(1), 178-196.
- Bouncken, R. B., Aslam, M. M., Gantert, T. M., & Kallmuenzer, A. (2023). New work design for knowledge creation and sustainability: An empirical study of coworking-spaces. *Journal of Business Research*, *154*, 113337.
- Bouncken, R.B., Kraus, S., & Martínez-Pérez, J.F. (2020). Entrepreneurship of an institutional field: the emergence of coworking spaces for digital business models. *International Entrepreneurship and Management Journal*, *16*, 1465-1481.
- Braunerhjelm, P., Acs, Z. J., Audretsch, D. B., & Carlsson, B. (2010). The missing link: knowledge diffusion and entrepreneurship in endogenous growth. *Small Business Economics*, *34*, 105-125.
- Bruyat, C., & Julien, P. A. (2001). Defining the field of research in entrepreneurship. *Journal of business venturing*, *16*(2), 165-180.
- Bylund, P. L., & McCaffrey, M. (2017). A theory of entrepreneurship and institutional uncertainty. *Journal of Business Venturing*, *32*(5), 461-475.
- Carlsson, B., Braunerhjelm, P., McKelvey, M., Olofsson, C., Persson, L., & Ylinenpää, H. (2013). The evolving domain of entrepreneurship research. *Small business economics*, *41*, 913-930.
- Chambers, D., & Munemo, J. (2019). Regulations, institutional quality and entrepreneurship. *Journal of Regulatory Economics*, *55*, 46-66.
- Chandra, Y. (2018). Mapping the evolution of entrepreneurship as a field of research (1990–2013): A scientometric analysis. *PloS one*, *13*(1), e0190228.
- Chowdhury, F., Audretsch, D.B., & Belitski, M. (2019). Institutions and entrepreneurship quality. *Entrepreneurship Theory and Practice*, *43*(1), 51-81.
- Fiegenbaum, A., Hart, S., & Schendel, D. (1996). Strategic reference point theory. *Strategic Management Journal*, *17*(3), 219-235.
- Fritsch, M., Sorgner, A., & Wyrwich, M. (2019). Self-employment and well-being across institutional contexts. *Journal of Business Venturing*, *34*(6), 105946.
- George, G., Haugh, H., Muñoz, P., Nason, R., & Welter, F. Recalibrating Entrepreneurship Research: A Call to Decolonize and Embrace the Pluralism of Entrepreneurial Activity.
- Ghio, N., Guerini, M., Lehmann, E.E. & Rossi-Lamastra, C. (2015). The emergence of the knowledge spillover theory of entrepreneurship. *Small Business Economics*, *44*(1), 1-18. DOI: 10.1007/s11187-014-9588-y

- Gioia, D. (2021). A systematic methodology for doing qualitative research. *The Journal of Applied Behavioral Science*, 57(1), 20-29.
- Gioia, D.A., Corley, K.G., & Hamilton, A.L. (2013). Seeking qualitative rigor in inductive research: Notes on the Gioia methodology. *Organizational Research Methods*, 16(1), 15-31.
- Gooding, R.Z., Goel, S., & Wiseman, R.M. (1996). Fixed versus variable reference points in the risk-return relationship. *Journal of Economic Behavior & Organization*, 29(2), 331-350.
- Goswami, K., Mitchell, J. R., & Bhagavatula, S. (2018). Accelerator expertise: Understanding the intermediary role of accelerators in the development of the Bangalore entrepreneurial ecosystem. *Strategic Entrepreneurship Journal*, 12(1), 117-150.
- Herrmann, A. M. (2019). A plea for varieties of entrepreneurship. *Small Business Economics*, 52, 331-343.
- Huggins, R., & Thompson, P. (2015). Entrepreneurship, innovation and regional growth: a network theory. *Small business economics*, 45, 103-128.
- Iftikhar, M. N., Ahmad, M., & Audretsch, D. B. (2020). The knowledge spillover theory of entrepreneurship: the developing country context. *International Entrepreneurship and Management Journal*, 16, 1327-1346.
- Kahneman, T., & Tversky, A. (1979). *Prospect theory: An analysis of decisions under risk*, 263-291.
- Kennedy, B. L., & Thornberg, R. (2018). Deduction, induction, and abduction. *The SAGE handbook of qualitative data collection*, 49-64.
- Kim, Y., Kim, W., & Yang, T. (2012). The effect of the triple helix system and habitat on regional entrepreneurship: Empirical evidence from the US. *Research policy*, 41(1), 154-166.
- Kotlar, J., De Massis, A., Fang, H., & Frattini, F. (2014). Strategic reference points in family firms. *Small Business Economics*, 43, 597-619.
- Lehmann, E. E., Schenkenhofer, J., & Wirsching, K. (2019). Hidden champions and unicorns: A question of the context of human capital investment. *Small Business Economics*, 52, 359-374.
- Low, M. B., & MacMillan, I. C. (1988). Entrepreneurship: Past research and future challenges. *Journal of management*, 14(2), 139-161.
- Mair, J., & Marti, I. (2009). Entrepreneurship in and around institutional voids: A case study from Bangladesh. *Journal of business venturing*, 24(5), 419-435.
- Meoli, A., Fini, R., Sobrero, M., & Wiklund, J. (2020). How entrepreneurial intentions influence entrepreneurial career choices: The moderating influence of social context. *Journal of Business Venturing*, 35(3), 105982.

- Mrożewski, M., & Kratzer, J. (2017). Entrepreneurship and country-level innovation: Investigating the role of entrepreneurial opportunities. *The Journal of Technology Transfer*, 42(5), 1125-1142. DOI: 10.1007/s10961-016-9479-2
- Nason, R.S., Bacq, S., & Gras, D. (2018). A behavioral theory of social performance: Social identity and stakeholder expectations. *Academy of Management Review*, 43(2), 259-283.
- Nason, R.S., Mazzelli, A., Carney, M. (2019). The ties that unbind: Socialization and business-owning family reference point shift. *Academy of Management Review*, 44(4), 846-870.
- North, D.C. (1990). A transaction cost theory of politics. *Journal of Theoretical Politics*, 2(4), 355-367.
- Plummer, L. A., & Acs, Z. J. (2014). Localized competition in the knowledge spillover theory of entrepreneurship. *Journal of Business Venturing*, 29(1), 121-136.
- Posen, H.E., Keil, T., Kim, S., & Meissner, F.D. (2018). Renewing research on problemistic search—A review and research agenda. *Academy of Management Annals*, 12(1), 208-251.
- Qian, H. (2018). Knowledge-based regional economic development: A synthetic review of knowledge spillovers, entrepreneurship, and entrepreneurial ecosystems. *Economic Development Quarterly*, 32(2), 163-176.
- Qian, H., & Acs, Z. J. (2013). An absorptive capacity theory of knowledge spillover entrepreneurship. *Small Business Economics*, 40, 185-197.
- Qian, H., Acs, Z. J., & Stough, R. R. (2013). Regional systems of entrepreneurship: the nexus of human capital, knowledge and new firm formation. *Journal of economic geography*, 13(4), 559-587.
- Qian, H., & Jung, H. (2017). Solving the knowledge filter puzzle: Absorptive capacity, entrepreneurship and regional development. *Small Business Economics*, 48, 99-114.
- Romer, P. M. (1990). Endogenous technological change. *Journal of political Economy*, 98(5, Part 2), S71-S102.
- Romer, P. M. (1994). The origins of endogenous growth. *Journal of Economic perspectives*, 8(1), 3-22.
- Shane, S., & Venkataraman, S. (2000). The promise of entrepreneurship as a field of research. *Academy of management review*, 25(1), 217-226.
- Sharapov, D., & Ross, J.-M. (2023). Whom should a leader imitate? Using rivalry-based imitation to manage strategic risk in changing environments. *Strategic Management Journal*, 44, 311-342.
- Shinkle, G. A. (2012). Organizational aspirations, reference points, and goals: Building on the past and aiming for the future. *Journal of management*, 38(1), 415-455.

- Siebold, N. (2021). Reference points for business model innovation in social purpose organizations: A stakeholder perspective. *Journal of Business Research*, 125, 710-719.
- Stenholm, P., Acs, Z. J., & Wuebker, R. (2013). Exploring country-level institutional arrangements on the rate and type of entrepreneurial activity. *Journal of business venturing*, 28(1), 176-193.
- Strauss, A., & Corbin, J. (1998). Basics of qualitative research techniques.
- Sydow, A., Cannatelli, B. L., Giudici, A., & Molteni, M. (2022). Entrepreneurial workaround practices in severe institutional voids: Evidence from Kenya. *Entrepreneurship Theory and Practice*, 46(2), 331-367.
- Tavassoli, S., Obschonka, M., & Audretsch, D. B. (2021). Entrepreneurship in cities. *Research Policy*, 50(7), 104255.
- Thompson, T. A., Purdy, J. M., & Ventresca, M. J. (2018). How entrepreneurial ecosystems take form: Evidence from social impact initiatives in Seattle. *Strategic Entrepreneurship Journal*, 12(1), 96-116.
- United Nations, (2022). World Economic Situation and Prospects 2022. United Nations. <https://desapublications.un.org/file/728/download> (Accessed on 14.06.2023).
- Urbano, D., Aparicio, S., & Audretsch, D. (2019). Twenty-five years of research on institutions, entrepreneurship, and economic growth: what has been learned?. *Small Business Economics*, 53, 21-49.
- Värlander, S.W., Sölvell, I., & Klyver, K. (2020). Entrepreneurship as a vocational choice in contested entrepreneurship communities: The role of entrepreneurs' justification strategies. *Journal of Business Venturing*, 35(3), 106006.
- Venkatarman, S. (1997). The distinctive domain of entrepreneurship research: An editor's perspective. *Advances in entrepreneurship, firm emergence, and growth*, 3, 119-138.
- Vladasel, T., Lindquist, M. J., Sol, J., & Van Praag, M. (2021). On the origins of entrepreneurship: Evidence from sibling correlations. *Journal of business venturing*, 36(5), 106017.
- Webb, J. W., Khoury, T. A., & Hitt, M. A. (2020). The influence of formal and informal institutional voids on entrepreneurship. *Entrepreneurship Theory and Practice*, 44(3), 504-526.
- Welter, F. (2011). Contextualizing entrepreneurship—conceptual challenges and ways forward. *Entrepreneurship theory and Practice*, 35(1), 165-184.
- Welter, F., & Baker, T. (2021). Moving contexts onto new roads: Clues from other disciplines. *Entrepreneurship Theory and Practice*, 45(5), 1154-1175.

- Welter, F., Baker, T., Audretsch, D. B., & Gartner, W. B. (2017). Everyday entrepreneurship—a call for entrepreneurship research to embrace entrepreneurial diversity. *Entrepreneurship Theory and Practice*, *41*(3), 311-321.
- Welter, F., Baker, T., & Wirsching, K. (2019). Three waves and counting: The rising tide of contextualization in entrepreneurship research. *Small business economics*, *52*, 319-330.
- Wennberg, K., Delmar, F., & McKelvie, A. (2016). Variable risk preferences in new firm growth and survival. *Journal of Business Venturing*, *31*(4), 408-427.
- Whetten, D. A. (1989). What constitutes a theoretical contribution?. *Academy of management review*, *14*(4), 490-495.