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THE APPLICATION OF THE GLOBAL ENTREPRENEURSHIP MONITOR MODEL AND ITS ROLE IN SHAPING ENTREPRENURSHIP POLICYMAKING:
CASE STUDY OF BULGARIA

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Summary

This thesis addresses the central research question of how could the GEM data collection benefit the entrepreneurship policymaking in Bulgaria. The motivation arises from the widespread usage and analysis application of the GEM data by scholars, authorities and national policymakers, and the ongoing debate on how far measurement indicators of entrepreneurship influence government strategies for economic development, and in particular, entrepreneurship policymaking. The research employs a qualitative methodology centred on a case study of the GEM Bulgaria, supported by interviews with key GEM national representatives and stakeholders. The Bulgarian case is significant due to the country's EU accession almost two decades ago, coincided with a revival of entrepreneurial initiatives and values. Bulgaria offers a favorable environment for entrepreneurship, with one of the lowest corporate tax rates in the EU, combined with skilled labor, streamlined business setup, and vibrant startup hubs in Sofia. Bulgaria joined the GEM global consortium in 2015 year, as part of efforts to align with a new globally appreciated measurement model, and to strengthen evidence base for entrepreneurship policy, although the continuity of data collection was eventually interrupted. The analysis considers the GEM Adult Population Survey (APS) and National Expert Survey (NES) as instruments that were applied in Bulgaria for a very first time to generate systematic database and insights into entrepreneurial activity and environment. The main findings indicate that, while GEM Bulgaria initially provided a valuable knowledge on entrepreneurship, quite diverse from the national statistical data collection, its limited continuity reduced its potential to serve as a consistent input into policymaking. Interviews and document analysis suggest that although the GEM's data are recognised by policymakers, the extent of their direct influence on entrepreneurship policy design remains constrained in Bulgaria, compared to other countries where GEM operates more steadily.

The study concludes that the GEM global model has potential to serve as a bridge between data collection and entrepreneurship policymaking, but in the Bulgarian context this interaction has been only partially established due to institutional, political, and organisational challenges.

Key words:
Global Entrepreneurship Monitor (GEM); Measurement of entrepreneurship; Entrepreneurial ecosystem; Entrepreneurial policies; GEM Bulgaria

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Sinecerely,
Jeni Oreshkova

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CHAPTER I. INTRODUCTION

The introductory chapter of this thesis outlines the problem area and formulates the problem statement, including the main research question and sub-questions, the research aim and objectives, the overall thesis structure, the scope and anticipated limitations of the study, and the rationale for the case study selection. The purpose is to present a discussion of the academic relevance and societal justification of the investigated topic, grounded in both theoretical and empirical considerations. The methodological approach adopted in this chapter is primarily based on a review of relevant literature within the selected field, supplemented by insights derived from an internship experience with the Global Entrepreneurship Monitor (GEM).

1.1. Problem Statement

The question of how a given methodology can effectively measure entrepreneurial dynamics and assess entrepreneurial ecosystems globally is not a new one. It has long been part of academic discourse concerning the nature of entrepreneurship and the definition of who qualifies as an entrepreneur (Shane, 2003; Audretsch et al., 2015). Entrepreneurship is widely recognized as a key driver of economic growth and social development (Wennekers & Thurik, 1999; Acs & Szerb, 2007). Consequently, the state ability to create systematic and comprehensive records about the entrepreneurial activity at national or regional level is an essential tool. It has been emphasized almost two decades ago that there is an increasing demand for business demography data from a diverse group of users at both the European and OECD levels. Within Europe, the focus has been on obtaining consistent and comparable data across the European Union (EU). The primary users at this level are economic policymakers within the member states and European institutions. The European Commission (EC) has reaffirmed its commitment to a policy that

supports entrepreneurship activity as a key driver for enhancing competitiveness, stimulating economic growth, and creating employment opportunities (Eurostat-OECD, 2008). A related question then arises – to what extent is it rational to rely on such records and data collection when designing or adjusting governmental policies aimed at stimulating entrepreneurial mindset and skills within a society (Minniti, 2008; Bosma, 2013). The entrepreneurship literature acknowledges that over the past two decades the clear understanding of entrepreneurial dynamics has become a central component of national and regional economic development strategies (Acs et al., 2018; Audretsch et al., 2006; Wennekers and Thurik, 1999).

Policymakers, scholars, practitioners increasingly depend on robust, comparative, and longitudinal data to guide interventions in fostering entrepreneurial activity. Among the most widely recognized efforts to generate such data is the Global Entrepreneurship Monitor (GEM), a research initiative between two universities, established in 1999 year with the aim of systematically capturing entrepreneurial activity and dynamics, aspirations and attitudes across countries (Bosma et al., 2020). By deploying two main instruments, the Adult Population Survey (APS) and the National Expert Survey (NES), the GEM conceptual framework provides empirical insights into the multifaceted nature of the entrepreneurship, such as individual-level entrepreneurial attitudes and behaviors, as well as national-level framework conditions that influence entrepreneurial activity. The GEM concept of measuring entrepreneurship and informing stakeholders has been adopted in over 150 economies globally since its inception. These data allow for comparative assessments and evidence-based national policy design among both – emerging and advanced economies.

The GEM's influence extends beyond academic inquiry and it plays a pivotal role in informing national and regional entrepreneurship policies. Literature on the subject field increasingly points to the value of longitudinal data collection in

enabling governments to identify trends, benchmark performance, and evaluate the impact of interventions to policy (Acs et al., 2018; Bosma, 2013). However, important questions remain about the extent to which the systematic production of entrepreneurship data translates into tangible changes in the policy direction or content.

Despite the availability of longitudinal and cross-country GEM data, an enduring challenge persists in the field of entrepreneurship policy: the translation of data-driven insights into concrete policy action. While GEM findings are frequently cited in policy documents and entrepreneurship development strategies, the actual mechanisms through which systematic data production informs and shapes policy remain, more or less, underexplored (Acs et al., 2018; Bosma, 2013). The present research attempts to addresses this space by examining the interaction between structured entrepreneurial data collection through the GEM methodology and its potential role in the evolution of national entrepreneurship policies or initiatives, with a particular focus on Bulgaria as a case study. The thesis refers to experience of other GEM countries.

Bulgaria joined the GEM global consortium in 2015, participating in several data collection cycles and contributing a few years of APS and NES data to the global dataset. This circumstance enabled the identification of key national trends in entrepreneurial activity and ecosystem conditions and coincided with a period of increased interest in entrepreneurship policy following the country's accession to the EU in 2007. Nevertheless, in recent years, Bulgaria has not maintained an active presence in the GEM global network, thus raising questions about the continuity of data production and its implications for more evidence-based policy development. As a former GEM participating country, it is challenging to make an attempt to inquire into what factors influenced negatively the GEM Bulgaria's continued participation and what lessons could be learned.

1.2. Research Aim and Objectives

The problem formulation stage involved refining the broad issue of data scarcity for policy evaluation into specific research objectives on GEM's policy impact. While the role of the GEM in global entrepreneurship research is well established, there is a lack of country-level studies that systematically examine the influence of the GEM's data on national policy formation (GEM, 2018). This thesis aims to address this gap by exploring how GEM Bulgaria's findings have been utilized, if so, in shaping entrepreneurship-related initiatives and policies, and how could benefit that process. The research targets to shed light on potential relevance of reapplying the GEM initiative in Bulgaria. This thesis attempts to investigate if and how the systematic aggregation and dissemination of entrepreneurship data through the GEM framework in other countries have influenced the orientation of national entrepreneurship policy. The selected GEM cases are Croatia and Spain.

The envisaged research objectives are:

- To review relevant literature on the relationship between entrepreneurship measurement, economic development and policymaking, with a focus on GEM reports and publications by affiliated GEM researchers;
- To examine the GEM conceptual framework and methodology, including its data collection instruments and indicators relevant to policy evaluation;
- To analyze how GEM Bulgaria's findings have been integrated, if so, into national and regional entrepreneurship strategies or initiatives;
- To identify barriers led to discontinuance of GEM Bulgaria and potential opportunities for enhancing policy relevance of GEM data in Bulgaria;
- To investigate good practices of policy uptake in other GEM countries that may offer valuable insights and, if relevant, to compare Bulgaria's GEM-related policy use with that of these countries.

1.3. Research Questions

Against this backdrop, the central problem and main research question this thesis investigates is how could the Global Entrepreneurship Monitor (GEM) model and data collection benefit the entrepreneurship policymaking in Bulgaria.

Along with this main research question, to capture the different dimensions of the research problem the thesis formulates the following related sub-questions:

1. *How does the general GEM model measure the entrepreneurial dynamics and how was it implemented in Bulgaria?*

2. *What are the main obstacles for the continued implementation of the GEM model in Bulgaria?*

3. *How is the GEM model and data collection used in other countries as input to entrepreneurship policymaking?*

1.4. Thesis Design

This thesis is structured with the objective to provide a comprehensive analysis of the role of the GEM Bulgaria in the entrepreneurship policymaking through the lens of case study analysis on the GEM model application. The thesis is organized as it follows below:

- A summary that states the research question, the underlying motivation, the applied methodological approach, and the main findings.

- Chapter I provides an introduction that outlines the problem field, research aim and objectives, the main research question and related sub-questions, the thesis design, scope and limitations within it, as well as the rationale for the case study selection.
- Chapter II sets out the methodological design and data sources, detailing the overall approach, methods of data collection and analysis, the rationale and limitations of the study, and the ethical considerations.
- Chapter III presents relevant literature and examines key frameworks for entrepreneurship measurement, the integration of GEM data within these frameworks, its use in academic research, the main debates and critiques surrounding the GEM model, and the ways in which GEM data informs entrepreneurship policy.
- Chapter IV relates to empirics and explores the origins and mission of the GEM model, its conceptual framework and methodological approach, its policy implications, and compares case study applications of national GEM models.
- Chapter V shifts to the national context of the problem field and examines the state approach of entrepreneurship measurement through the National Statistical Institute (NSI) in Bulgaria; and in addition, offers analysis and discussion on the implementation of the GEM model in the country; finally presents findings from the interview-based analysis of the Bulgarian case, comparative reflections and contextual insights on the in-depth interviews.
- Finally, the thesis draws conclusions in relation to the research questions and offers recommendations for future research.

1.5. Scope and Limitations

The study focuses on the relationship between the measurement of entrepreneurial activity, specifically through the GEM model, and the development of national entrepreneurship policies, focusing on how GEM data informs policymaking. The geographical scope is centered on Bulgaria, a post-transition economy within the EU, with references to selected EU member states and up-to-date GEM countries, such as Spain and Croatia to provide broader contextual insights. The study covers policy developments from approximately 2012 to 2025, in regard to Croatia and Spain. Particular attention to Bulgaria's GEM participation is up to its most recent national report in 2019 year. Alongside relevant EU-level data and documents are taken into scrutiny until 2025 year. The thematic scope includes the integration of GEM indicators into entrepreneurial policy frameworks and the extent to which these could influence policy design and implementation, while excluding micro-level behavioral studies. In the Bulgarian context, particular emphasis is placed on the GEM's contribution in shaping entrepreneurship educational policies and initiatives as a key policy impact area, excluding detailed analysis of the related entrepreneurship educational programs. Methodologically, the thesis employs a mixed qualitative approach consisting of a systematic literature review, document analysis of the recent GEM reports and national policy documents, comparative assessment across selected GEM countries and EU member states at the same time, and primary qualitative data collected through semi-structured interviews conducted with GEM representatives from Bulgaria, while firsthand quantitative data collection is not undertaken.

While this thesis work aims to achieve a comprehensive completion of the study objectives, several limitations within this scope should be acknowledged. First, the suspension of the GEM operations in Bulgaria after the publication of the 2019 national report restricts the availability of up-to-date and country-specific GEM

survey data. Entrepreneurship specific indicators in Bulgaria, such as total early-stage entrepreneurial activity, opportunity- vs. necessity-driven entrepreneurship, fear of failure, etc., were not systematically collected and were aligned with the GEM's style concept only in more recent years. This limitation reduces the ability to track complete and consistent entrepreneurial dynamics and policy impacts. Second, discrepancies in data coverage and reporting standards pose challenges for direct comparability in the cross-country analysis, particularly where the national GEM reports differ in structure, language of publication or depth. Third, the study relies on primary and secondary data sources and qualitative methods, which may reflect subjective interpretations, as well as to be influenced by the availability and accessibility of records or by concerns about providing personal opinions or assessments that could be interpreted as representing official position. Fourth, although the National Statistical Institute of Bulgaria (NSA) has a long-standing institutional roots, statistical data on entrepreneurship is incomplete in terms of indicators similar to those applied in the GEM's methodology, thereby limiting the comparability and consistency of such data. Entrepreneurship related business demography indicators have been systematically integrated into the harmonised European Statistical System (ESS) particularly since the time of Bulgaria's EU accession in 2007, thus affecting the international benchmarking capacity and the historical depth of the analysis (Eurostat-OECD, 2008). Finally, the absence of primary quantitative data collection, such as large-scale surveys, means that the potential findings of the thesis work are interpretive rather than statistically generalizable, though they remain valuable for understanding policy trends and institutional dynamics.

1.6. Case Study

Bulgaria presents a compelling case to investigate as the country experienced a renewed interest in entrepreneurship as a driver of economic modernization and

regional development after its accession to the European Union (EU) in 2007 year. Entrepreneurship remains a relatively recent phenomenon in the country under the conditions of a free-market economy and EU membership. The preliminary research on the measurement of entrepreneurship in Bulgaria indicates a shortage of comparable data tracking of the entrepreneurial dynamics for the past decades. The problem is compounded by a notable need to enhance the production of entrepreneurship statistical data at the government level, despite the NSI that is maintaining business statistics.

According to the European Commission's report for Bulgaria, small and medium-sized business (SMEs) faced many difficulties in 2020. The country scores below the EU average in the implementation of the Small Business Act, an overarching framework about EU's policy on SMEs. Moreover, Bulgaria was behind in most of the categories, particularly in entrepreneurship and skills and innovation, where it has one of the weakest scores in the EU. It is also recognized that measures to promote SMEs development achieved limited effectiveness (EC, 2020, p.48). Although Bulgaria is considered as a post-transition economy in literature on entrepreneurship, innovation, and institutional development studies, and functions as a high-income market economy within the EU today, the country continues to face institutional and policy challenges in aligning entrepreneurship ecosystems with those of more advanced EU states (World Bank, 2024). Additionally, the thesis presents policy evidences from other GEM countries. In pursuit of the thesis objectives, the experiences of GEM in Croatia and Spain have been identified as particularly instructive within the broader context of GEM participating countries. These cases provide comparative insights into how GEM data can be used constructively to support national entrepreneurship policy, and offer examples of governmental good practices that may hold relevance for other countries seeking to strengthen evidence-based policy development.

CHAPTER II. RESEARCH METHODOLOGY

This chapter outlines the methodological design of the thesis and explains how the research questions are addressed in order to achieve the stated objectives. The methodology provides a systematic approach that documents both the sources of evidence and the procedures adopted for their collection and analysis. In doing so, it aims to clarify the logic of inquiry and to ensure transparency in how the study was conducted. The central aim of the methodology part is to answer three guiding questions: *What data is collected? How is the data collected, and why? How is it analysed?* By responding to these questions, the chapter illustrates how the study integrates multiple forms of evidence collection such as: documentary sources, statistical databases, observations from an internship at GEM Bulgaria, attendance in person and virtual participation in GEM national and global events, and experts interviews within a qualitative case study framework.

2.1. Methodological Design. Methods and Analysis of Data Collection

Research in the social sciences is commonly designed as qualitative, quantitative, or mixed-methods, each of which entails distinct methodological implications. These approaches shape the choice of methods, understood as the behaviours, techniques, and practical procedures applied to collect evidence from a variety of relevant sources. In turn, such methodological decisions determine how data are gathered and subsequently analysed in order to address the research questions in a systematic and coherent manner (Creswell, 2014; Bryman, 2016). The following summary table outlines the research aim, objectives, questions, and corresponding methods, providing an overview of their alignment within the the overall focus and the thesis design. Such mapping is intended to contribute to methodological coherence and transparency, increasing the likelihood that the selected approaches are appropriate for addressing the research problem.

Research Methods Mapping

Research Aim	Research Objectives	Research Questions/Areas	Proposed Methods
To address the lack of country-level studies that examine the influence of the GEM's data on national policy formation by investigation of how the GEM model and findings have been utilized and could benefit the shaping and implementation of entrepreneurship-related initiatives and policies in Bulgaria.	To review scholarly and GEM literature on the relationship between entrepreneurship measurement and policymaking.	What does the literature reveal about the link between entrepreneurship measurement and policymaking?	Systematic literature review; thematic approach and analysis
	To examine the GEM global framework and methodology, including its data collection instruments.	How does the general GEM model measure the entrepreneurial dynamics and how was it implemented in Bulgaria?	Document review and analysis of the GEM methodology; review of national and global reports; interview data and analysis
	To analyze how GEM Bulgaria's findings have been integrated, if so, into national entrepreneurship strategies or initiatives.	How could the GEM model and data collection benefit the entrepreneurship policymaking in Bulgaria?	Content and thematic analysis of interviews with GEM representatives; review of policy documents and initiatives
	To identify barriers and potential opportunities for enhancing the policy relevance of GEM data in Bulgaria.	What are the main obstacles for the continued implementation of the GEM model in Bulgaria?	Semi-structured interviews; document review and analysis
	To investigate good practices in terms of policy uptake from other GEM countries that may offer valuable insights.	How is the GEM model and data collection used in other countries as input to entrepreneurship policymaking?	Document analysis; Investigation of good practices in selected GEM countries; comparative review
Future research	To compare Bulgaria's GEM-related policy use with that of selected GEM countries.	How does Bulgaria's policy use of GEM data compare with that of other GEM countries?	Cross-country comparison using GEM reports, documents and secondary data

(Source: Self-designed)

This thesis aims a *qualitative research design with a single-country case study* of Bulgaria, employing multiple sources of evidence in a triangulated manner, in order to generate better understanding of the relationship between GEM data and entrepreneurship policymaking. The qualitative orientation is particularly suitable in view of the exploratory nature of the research questions and the complexity of tracing policy influence. At the same time, the qualitative inquiry is recognised as methodologically challenging due to potential subjectivity in data interpretation and the difficulties of establishing causal inferences (Maxwell, 2013; Yin, 2014). To mitigate these risks, the study combines primary and secondary data, based on documents review and analysis, statistical data, personal observations and expert interviews, in a transparent manner.

First, a systematic review of GEM Bulgaria national reports, covering the period from 2015 to the final year of GEM national participation, is undertaken to extract thematic insights, enabling the identification of patterns and changes over time in the entrepreneurial landscape and the policy discourse and recommendations. Second, a complementary review of relevant policy documents, including national development programmes, innovation strategies, and SME policy frameworks stay, is carried out to detect explicit and implicit references to GEM findings, thereby tracing potential pathways of influence on policy formulation. Further, to broaden the analysis, the thesis also draws on a review of academic literature concerning the impact of GEM global data on entrepreneurship policy and its role in academic research likewise. Moreover, examples of good practice in linking GEM data to policymaking development are investigated in other GEM countries, thus offering a comparative dimension for future rethinking of GEM Bulgaria revival. Third, in order to capture the perceptions and interpretations of key stakeholders, semi-structured interviews are conducted with representatives of the GEM Bulgaria, directly involved in the production and dissemination of GEM data in the country. These interviews provide contextualised insights into whether

or how GEM evidences have been perceived, mobilized, valued, or disregarded and constrained in Bulgarian policy debates. In addition, data from the Bulgarian National Statistical Institute (NSI) and other institutional databases are examined to detect if and in what ways GEM Bulgaria findings might be complemented or referenced by national statistical sources.

Since the interview method constitutes a central component of the primary data collection strategy for this research, it is probably worth mentioning a few details. The interviews are conducted across different time periods and locations, thereby adopting a *longitudinal approach*. This design enables the comparison of expert attitudes and arguments over time, particularly among respondents affiliated with the same initiative. The *selection of interviewees is purposive*, employing a non-probability sampling strategy based on their recognised expertise, familiarity with the national dynamics, and direct observations of the entrepreneurial ecosystem and political environment in Bulgaria. Online interview approach is chosen for feasibility and access.

The duration of a single interview was longer than an hour, giving an opportunity to discuss the subject and related issues in details. The *interview questions were carefully designed* to create a comfortable environment for the participants, thus encouraging open and evolving discussion. A *core set of questions* was posed to all interviewees, thereby enabling the identification of common patterns as well as the comparison of divergent views. In addition, a *set of tailored questions* was developed in accordance with each participant's expertise, academic background, and professional experience, with the aim of eliciting detailed insights into their perceptions, assessments, and opinions on a range of related issues.

Qualitative data analysis entails systematic identification of themes and recurring patterns in participants' responses (Braun and Clarke, 2006). In the context of interviews and observations, methods such as content and narrative analysis are frequently employed to organise and interpret qualitative material (Bryman, 2016; Kvale and Brinkmann, 2009). While the present analysis focuses on the Bulgarian case, eventual comparative analysis offers a valuable avenue for future research, particularly in contrasting the GEM Bulgaria experience and its potential revival with that of other benchmark countries participating in the GEM project.

This triangulated and multi-source methodology approach aims to strengthen the validity of potential findings, as well as to contribute for a nuanced understanding of the interface between entrepreneurship measurement and policymaking. It also reduces the limitations inherent in any single method and allows for convergence of the findings (Yin, 2014). By combining evidences from GEM reports, policy documents, academic literature, national statistics bases, interviews, and personal insights, collected during an internship experience at GEM Bulgaria, the thesis work seeks to maintain coherence and analytical rigour, thereby ensuring clarity and relevance for the reader. The overall thesis research design is grounded in the principles of qualitative case study inquiry, which emphasises contextualisation, and integration of multiple evidence streams to illuminate the complex evidence-policy interactions (Yin, 2014). It also situates GEM within broader institutional and political environment that mediates the use of evidence in public policy.

2.2. Rationale and Limitations

The rationale for the thesis research design has been embedded throughout the methodology chapter. The selection of a qualitative case study, the longitudinal focus on the GEM Bulgaria, the triangulation of data sources, and the purposive interview sampling of key informants have each been justified in relation to the

research objectives. Although the GEM Bulgaria is not currently active within the global network, the case remains analytically valuable, both for understanding any past utilization of GEM data in policy, if such, and for assessing the potential role of such data in policymaking. The case study of Bulgaria is also justified by both, given the country's shifting political and institutional environment in the latest years, and practical considerations, such as the researcher's internship affiliation with the GEM Bulgaria. Taken together, these considerations aim to ensure that the study's methodological approach is coherent, feasible within time constraints, and appropriate for capturing any relationship between the GEM data, related to a complex case study, and entrepreneurship policymaking.

A limitation of this study lies in the current inactivity of the GEM Bulgaria, which restricts the availability of recent NES expert recommendations for policymakers. At the same time, this circumstance makes the case analytically significant, as it illustrates how international frameworks interact with fragile policy environments and it further provides an opportunity to consider the factors that constrained the sustainability of GEM in Bulgaria. Nevertheless, *the thesis focuses on the period when GEM Bulgaria was active*, in order to explore the potential implications of its findings for entrepreneurship policy. Importantly, the analysis may also serve as a reference point should Bulgaria re-engage with GEM in the future, offering insights into how past experiences can inform more sustainable participation. Second limitation concerns feasibility of conducting a quantitative bibliometric analysis of GEM-related publications. Such an approach is constrained by the fact that the majority of studies on the GEM data and its policy implications originate from academic sources, while publications from governmental bodies are scarce. This poses a substantial obstacle, particularly in the Bulgarian context, where the GEM model was applied only for a limited number of years. During this period, the interest of governmental stakeholders in GEM analyses and recommendations remained comparatively low in contrast to other participating countries.

These challenges are compounded by Bulgaria's recent political instability and the lack of continuity across successive governments in terms of entrepreneurship policies. Thus, a further contextual limitation stems from an unprecedented series of seven parliamentary elections in Bulgaria between 2021 and 2024, which has hindered the regularity in policymaking and complicated the systematic uptake of evidence-based initiatives such as GEM (European Council on Foreign Relations, 2024). As highlighted in the GEM Global Report 2023/2024, political stability and consistent government engagement are critical determinants for ensuring that entrepreneurship policy and government frameworks are effectively informed by empirical evidence (GEM, 2024).

2.3. Ethical Considerations

Finally, practical and ethical considerations shape the design of the thesis study. The interviews for the purpose of this paper are conducted in alignment with the norms and guidelines of Aalborg University. Informed consent, confidentiality, and transparency are observed in accordance with established academic standards. The participants in the interviews provided their consent for recording of the conversation and publishing their names. The written transcripts of the recorded interviews are executed according to the rules of the thesis writing curriculum. The full list of questions, together with the interview transcripts, are provided in Appendix 2 of the thesis to ensure transparency and to facilitate verification. The corresponding recording is available upon a request.

There was longitudinal communication via email and telephone with an expert from the Ministry of Education and Science in Bulgaria. The initial intention was to conduct an interview. However, the expert ultimately declined participation, citing concerns about their position as a state employee and the appropriateness

of sharing personal views, particularly on issues related to policy implications. The expert requested anonymity. This experience highlights the sensitivity of discussing policy matters in Bulgaria and may be interpreted as a reflection of the broader atmosphere of political uncertainty and institutional instability, which can influence the behaviour of public officials.

CHAPTER III. LITERATURE REVIEW

Although the debate on whether entrepreneurship is primarily "born" or "made" continues to attract significant scholarly and public attention (Nicolaou et al., 2008; Martin et al., 2013), the present thesis does not aim to explore this issue in depth. It is acknowledged, however, that the reality is likely to lie somewhere in between: genetic predispositions may influence the entrepreneurial inclination (Nicolaou and Shane, 2010), while education, training, and institutional support often play a critical role in shaping entrepreneurial skills and behavior (Nabi et al., 2017). From a policymaking perspective, this suggests that no single approach is universally sufficient, but rather, a combination of measures is required, tailored to the specific demographic and contextual characteristics of a given population. Policies may need to simultaneously address the development of entrepreneurial capabilities where they can be cultivated, while also recognizing and supporting individuals whose entrepreneurial tendencies are more strongly predisposed.

The design of this chapter of the thesis aims to present, examine, and synthesize existing frameworks, distinct from the GEM, that are used or have been used for measuring entrepreneurial dynamics and ecosystems. The objective is to point out other mostly applied frameworks and methods, and not to carry out comparative analyses between initiatives, concepts and models, as well as to distinguish the fact that some of these frameworks use GEM data. The thesis explores the use of GEM data and analysis in academic research and by policymakers. The GEM data is not just descriptive statistics on entrepreneurship from an academic perspective. It serves as a *theoretical and empirical foundation* for analyzing how institutional contexts may shape entrepreneurial dynamics. Policymakers can then use these insights for diagnosis, benchmarking, and evaluation of entrepreneurship policy. The literature overview relies on relevant scientific articles, institutional websites, published reports, and other official documentation.

3.1. Frameworks for Entrepreneurship Measurement

In the past two to three decades the measurement of entrepreneurial activity and ecosystem performance has been addressed by a variety of actors and institutions that have developed diverse global frameworks and indicators. These differ from the GEM methodology, though some share similar objectives of enhancing cross-national comparability and guiding policymaking processes. The most prominent stakeholders, identified within this chapter objectives, are the OECD, which has introduced its Entrepreneurial Ecosystem Diagnostics, a new framework, building up on past work, the more recent Entrepreneurial Ecosystems Benchmarking Tool (OECD, 2023), and the Entrepreneurship Indicators Programme (EP) (Ahmad and Hoffman, 2008). The Global Entrepreneurship and Development Institute (GEDI) has created the Global Entrepreneurship Index (GEI), later extended regionally, mostly in the EU, through the Regional Entrepreneurship and Development Index (REDI), which combines individual capabilities and institutional quality in a composite measure of entrepreneurship (Acs et al., 2014; Szerb et al., 2013). At European level, Eurostat provides harmonised business demography indicators that support cross-national analysis of entrepreneurial dynamics across the EU member states (Eurostat, 2024). Most recently, Hess (2025) has proposed a novel measurement model at the sub-national (NUTS-3) level that integrates archival and self-reported data to assess EU entrepreneurial ecosystems at a finer spatial resolution. Academic efforts have further contributed significantly: Hameed et al. (2023) recently introduced an Inclusive Entrepreneurial Ecosystem Index, while Audretsch and Link (2012) developed a simulation-based ecosystem framework grounded in basic “primitives” like talent and managerial capabilities. The World Bank maintains the Entrepreneurship Database based on administrative business registry data and Doing Business data collection project (World Bank, 2023). The World Economic Forum (WEF) focuses on entrepreneurship-relevant dimensions such as business dynamism, startup culture and innovation capability in its Global

Competitiveness Reports (WEF, 2020). In parallel, the Kauffman Foundation has produced national-level entrepreneurship metrics for the United States, including early-stage startup indicators (Kauffman Foundation, 2019). Collectively, these efforts reflect the increasing convergence and interaction between international organisations, data producers, and academic researchers, resulting in a more comprehensive, multi-scalar understanding of entrepreneurship and its contextual enablers. Below is a structured overview of such frameworks.

- OECD's Entrepreneurial Ecosystem Diagnostics

The OECD's 2025 report introduces a novel framework and dataset designed to assess entrepreneurial ecosystems across all 38 OECD countries. Rather than offering a single ranking, it evaluates ecosystems across three dimensions: inputs, outputs, and variation. Input elements include institutions, culture, networks, infrastructure, markets, finance, knowledge, talent, leadership, and intermediate services. Outputs focus on entrepreneurial performance like startup rates and survival outcomes, while variation reflects inclusivity and regional distribution patterns. The report explicitly builds on long-standing data efforts, including the OECD–Eurostat Entrepreneurship Indicators Programme, but repackages these into a newly structured framework. It serves as a pilot edition, with refinement expected in future versions (OECD, 2025).

- OECD's Entrepreneurial Ecosystem Benchmarking Tool

The OECD has developed a benchmarking tool designed to assess the strengths and weaknesses of the national entrepreneurial ecosystems. It uses internationally comparable indicators to evaluate core domains such as access to finance, talent, markets, entrepreneurial culture, and is structured to inform policymaking across OECD and non-OECD countries (OECD, 2023).

- OECD's Entrepreneurship Indicators Programme

The OECD launched the EIP in 2006, which became a joint EU–OECD initiative, namely with Eurostat in 2007 to provide internationally comparable measures of entrepreneurial activity. The first digest of indicators was released in 2008–2009, and the first flagship publication *Entrepreneurship at a Glance* appeared in 2011 and the series were issued annually until 2017. The project provided a structured set of harmonised indicators that capture main dimensions of entrepreneurship such as business creation, growth, innovation outputs, and business demography. Although the stand-alone reports have ceased, the indicators and methodology continue to be maintained and updated via the OECD's central online statistical database and related publications. This framework provides data for cross-country comparisons and is one of the most longstanding entrepreneurial metrics outside the GEM concept and model (Ahmad and Hoffman, 2008; OECD/Eurostat, 2009; OECD, 2011; OECD, 2017).

- Global Entrepreneurship and Development Index (GEDI), often referred as (GEI), and Regional Entrepreneurship and Development Index (REDI)

The GEI, also initiated as GEINDEX[1], developed by the Global Entrepreneurship and Development Institute, is a composite index that evaluates entrepreneurial performance by combining individual attitudes, abilities, and aspirations with the quality of institutional conditions – quality of governance, market development, etc. The index provides a systematic, global-level measurement of the role that entrepreneurship plays in national economic development, allows cross-country comparisons and tracks entrepreneurship as an individual activity and an institutionally embedded process (Acs and Szerb, 2009; Acs and Szerb, 2010; Acs

[1] The 2009 Jena working paper introduced the Global Entrepreneurship Index (GEINDEX), while the 2010 Foundations and Trends® in Entrepreneurship article presented the expanded and peer-reviewed Global Entrepreneurship and Development Index (GEDI).

et al., 2014). The GEI concluded with its 2019 edition, after which the focus shifted to the newly introduced Digital Entrepreneurship Ecosystem Index (DEEI) (Acs et al., 2019). The REDI extended the GEI concept to the regional level, particularly within the EU scope, and in alignment with its Cohesion Policy objectives, offering detailed measurement of entrepreneurial development at sub-national scales. The literature indicates that the REDI data was published as a final report in 2014, and has not been updated since and no subsequent editions released (Ortega-Argilés et al., 2014).

- Eurostat and European Commission – Entrepreneurship Statistics

Eurostat, under the European Commission, provides harmonised entrepreneurship statistics across EU member states. These include business demography indicators such as enterprise births, deaths, survival rates, and high-growth enterprises. These statistics are classified as central to the EU entrepreneurship policymaking and regional development strategies (Eurostat, 2024).

- Sub-Regional Ecosystem Measurement at NUTS-3 Level

Hess (2025) proposes a novel approach to measuring entrepreneurial ecosystems at the NUTS-3 level, using a mix of self-reported and archival data. This model enables granular comparisons of ecosystem conditions across small regions or districts, particularly in the European context, and addresses the shortcomings of national-level generalisations.

- Inclusive Entrepreneurial Ecosystem Index

This emerging framework, developed by Hameed et al. (2023), evaluates how inclusive given entrepreneurial ecosystems are across countries. It focuses on four primary dimensions, in particular inclusive governance and resources, inclusive policies, inclusive culture, and inclusive markets. The index integrates data from

various global databases and is aimed at promoting equity and accessibility in entrepreneurship ecosystems.

- Audretsch’s Primitives-Based Ecosystem Framework

Audretsch and colleagues propose a simulation-based ecosystem framework built around "primitives" such as talent, managerial capabilities, and infrastructure. It measures outcomes like entrepreneurship rate and firm size while modelling how ecosystem components interact over time. The model has been used to simulate and compare entrepreneurial dynamics across non-identical national contexts (Audretsch and Link, 2012; World Bank, 2023).

- World Bank Entrepreneurship Database

The World Bank's *Entrepreneurship Database*, first published in 2011, provides cross-country data on new business based on official registrations. This dataset enables analysis of entrepreneurship activity over time, especially in developing economies. The project systematically compiled data on formally registered firms for the period 2006 to 2022, with a primary focus on three core variables: the annual number of newly registered firms, the total stock of active firms, and the number of firm closures. The database is part of the World Bank's *Doing Business* project and is widely used in empirical research and policy. The project provided economic data collection spanning the period from 2003 to 2021. These data were disseminated through a variety of formats designed to support the analytical needs of researchers, policymakers, journalists, and others. (World Bank, 2023).

- World Economic Forum (WEF) – Global Competitiveness Reports

The measurement includes entrepreneurship-related indicators within the Global Competitiveness Reports (GCR). It cover factors such as innovation capability, business dynamism, and startup culture. The GCR was first published in 1979. The Global Competitiveness Index (GCI) itself, which is the core ranking measure

used in the GCR, was introduced in 2004, replacing earlier measures. Though the model is not exclusively focused on entrepreneurship, WEF data contributes to understanding of how entrepreneurship interacts with national competitiveness (WEF, 2020).

- Kauffman Foundation Indicators of Entrepreneurship

The Kauffman Foundation in the United States used national-level indicators on entrepreneurship like the archival Kauffman Index of Startup Activity and the Kauffman Early-Stage Entrepreneurship Index. Since 1996, the Kauffman Index has released annual reports, and after its relaunch in 2015 and 2016, the Kauffman Index of Entrepreneurship introduced three new types of reports: state, national, and metropolitan or city trends. The research shifted its emphasis from inputs to outcomes, highlighting the tangible results of entrepreneurial activity such as new business formation and growth rates. In order to deliver more actionable and relevant information, the Kauffman Foundation replaced the Kauffman Index of Entrepreneurship with the Kauffman Indicators of Entrepreneurship, developed with significant input from policymakers, researchers, and other stakeholders to ensure clearer, timely, and contextually grounded measures and reports. These research tools are among the most requested and notably influential in U.S. policy debates, and in academic research focused on data of entrepreneurial dynamics (Kauffman Foundation, 2019).

The following table provides a general summary of these global frameworks and initiatives relevant to entrepreneurship measurement and economic development. It outlines key implementing organization and year of initiation[2], methods of data collection, type and thematic focus, key features, global applicability, and source.

[2] The year of initiation, the year of first official publication, and the first year of data collection differ across some of the frameworks included in the table. The World Bank's Entrepreneurship

Frameworks for Entrepreneurship Measurement

Framework / Initiative	Implementing Organization	Year of Initiation	Methodology	Type / Focus	Key Features	Global Application?	Source / Link
OECD Entrepreneurial Ecosystem Diagnostics	Organization for Economic Co-operation and Development (OECD)	2025 (Pilot Edition)	Composite indicator framework combining quantitative data from OECD, Eurostat, World Bank	Ecosystem performance and inclusiveness	Structured around three dimensions (inputs, outputs, variation); policy-oriented	Applied across all OECD member states (38 countries), potential extension to non-OECD economies	https://www.oecd.org
OECD Ecosystem Benchmark Tool	Organization for Economic Co-operation and Development (OECD)	2023	Expert workshops, comparative indicator analysis, stakeholder consultation	Indicator-based benchmark	National ecosystem strengths / weaknesses	Yes (in development)	https://www.oecd.org
OECD Entrepreneurship Indicators Programme	Organization for Economic Co-operation and Development (OECD), Eurostat	2007	Official statistics, firm demography, innovation indicators	Framework indicators	Firm-level, innovation, business metrics	Yes	https://www.oecd.org
GEI / REDI	Global Entrepreneurship and Development Institute (GEDI)	2008 (GEI), 2013 (REDI)	Composite index using survey data and institutional variables	Mixed indicator composites	Performance, aspirations, capabilities	Yes	https://thegedi.org

Database, for example, was first formalized with its indicator *New Business Density* in 2008, while the broader Entrepreneurship Database project was launched in 2011, incorporating back-data from 2006. This situation is also frequently observed among other implementing institutions.

Eurostat Entrepreneurship Statistics	Eurostat (Statistical Office of the European Union)	2000s	Administrative data from national statistical institutes	Harmonized business demography	Births, deaths, survival rates of enterprises in EU	Yes (EU-focused)	https://ec.europa.eu
NUTS-3 Local Ecosystem Measurement	Independent academic researchers (Hess)	2025 (forthcoming)	Mixed-methods: archival + self-reported data	Mixed data, granular geography	District-level comparison	Yes (EU-focused)	https://link.springer.com
Inclusive Entrepreneurial Ecosystem Index	Independent academic researchers (Hameed et al.)	2023	Index construction using secondary global datasets	Inclusion-focused composite index	Governance, policies, culture, markets	Yes (emerging)	https://link.springer.com
Audretsch Primitives Framework	Independent academic researchers (Audretsch and Link)	2012	Simulation models and theoretical analysis	Output + simulation-based	Business rate, firm size	Yes (academic / macro)	https://link.springer.com
World Bank Entrepreneurship Database	World Bank Group	2003 2011	Official registry data collected via Doing Business project	Administrative/business registry data	New business registrations; formal entrepreneurship	Yes (esp. developing countries)	https://www.worldbank.org
WEF Global Competitiveness Report	World Economic Forum (WEF)	GCR in 1979 (with GCI in 2004)	Executive Opinion Survey + statistical indicators	Composite macroeconomic index	Business dynamism, startup culture, innovation capacity	Yes	https://www.weforum.org
Kauffman Indicators of Entrepreneurship	Ewing Marion Kauffman Foundation	1996 (indexes) 2017 (indicator branding)	Survey-based indicators and administrative data	National-level entrepreneurship metrics	U.S.-focused startup activity, early-stage entrepreneurship index	No (national: USA only)	https://indicators.kauffman.org

(Source: Self-designed summary table)

3.2. The Use of GEM Data in Entrepreneurship Measurement Frameworks

The GEM network has become not only one of the world's most prominent source of primary data on entrepreneurial attitudes, activities and aspirations, but also a critical input for some other internationally recognised measurement frameworks. This section of the literature review aims to examine if among the eleven depicted frameworks, the GEM data has played a particularly influential role, not only as a standalone survey but also as a data source for other indices and methodologies. The review of these widely recognized organizations and their global initiatives reveals that only a subset explicitly incorporate GEM's APS or NES indicators. There are no clear evidence, or the thesis research did not find such, that the other frameworks apply systematically GEM data in their approach. Assumingly, they either do not use the GEM as a source in their reports and analysis, or there are no public information they do so. Among the range of global and regional initiatives reviewed in this chapter, four stand out for their explicit integration of GEM data into their analytical designs. These are the Global Entrepreneurship Index (GEI), the Regional Entrepreneurship and Development Index (REDI), both supplied by the GEDI, the OECD–Eurostat Entrepreneurship Indicators Programme (EIP), and the recently introduced OECD Entrepreneurial Ecosystem Diagnostics.

The Global Entrepreneurship Index (GEI), initiated by Acs and Szerb in 2008 and published annually until the final report from 2019, provides a composite measure of national entrepreneurial ecosystems. Its conceptual design combines micro-level data from the GEM's APS with macro-institutional variables drawn from various sources such as the World Bank and the World Economic Forum. The GEM indicators in terms of individual variables are central to the GEI framework (Szerb et al., 2020, pp.18, 29), particularly in capturing entrepreneurial attitudes (e.g. opportunity perception, fear of failure), activities (e.g. startup rates), and aspirations (e.g. innovation orientation), which are then matched with institutional

context to generate the index scores (Acs and Szerb, 2010; Acs, Szerb and Autio, 2014).

Building on this foundation, the Regional Entrepreneurship and Development Index (REDI) was developed under the auspices of the European Commission to apply the GEI methodology at the regional (NUTS-2/3) level. Its final report, published in 2014, employed the GEM APS indicators alongside Eurostat and EC data to assess the quality and performance of entrepreneurship ecosystems across EU regions. By integrating GEM survey evidence on individuals' perceptions and capabilities, aggregated at regional level, REDI enabled a more nuanced regional diagnosis of entrepreneurial dynamics within Europe. The index is structured into three sub-indices, comprising fourteen pillars and twenty-eight variables, thereby enhancing a multidimensional assessment (Ortega-Argilés et al., 2014, p.6). The GEI and its regional variant, the REDI, are among the most direct adopters of the GEM data. This reliance has been noted as a strength, in terms of international comparability, and as a limitation when the GEM coverage is inconsistent across economies (Acs et al., 2014).

A third case of the GEM data use is the mutual OECD–Eurostat Entrepreneurship Indicators Programme (EIP), launched in 2007. While the primary focus has been on administrative and registry-based statistics, the OECD flagship publication *Entrepreneurship at a Glance* supplements these data records with selected GEM indicators to address the dimension of entrepreneurial culture. Variables such as entrepreneurship assessed as a desirable career choice, perceived entrepreneurial capabilities, and social status of entrepreneurs are sourced directly from GEM's APS, thereby enriching the programme's structural and performance indicators with attitudinal measures (Ahmad and Hoffman, 2008; OECD, 2011; OECD, 2017).

Most recently, the OECD Entrepreneurial Ecosystem Diagnostics framework (2025) has institutionalised GEM's role even further by explicitly integrating its indicators into the OECD's multidimensional approach to ecosystem assessment. Within this framework, GEM's APS variables are embedded in the *Culture* (e.g. career choice, status) and *Talent* (e.g. perceived capabilities) elements, alongside OECD-Eurostat and other international data sources. This marks a significant recognition of GEM's long-standing value in capturing the softer dimensions of entrepreneurial mindset that remain outside the reach of traditional registry-based statistics (Crotti et al., 2025; OECD, 2025).

In summary, the GEM model continues to underpin some of the most influential cross-country entrepreneurship measurement frameworks. Taken together, these four frameworks illustrate the critical complementarities between the GEM's survey-based evidence and institutionally generated datasets. Their adoption of the GEM inputs underscores GEM's unique contribution to the global evidence base on entrepreneurship, particularly in domains of attitudes and aspirations that cannot be derived from administrative registers alone.

By contrast, other frameworks such as the World Bank Entrepreneurship Database (World Bank, 2023), the World Economic Forum's Global Competitiveness Report (WEF, 2020), the Kauffman Indicators of Entrepreneurship (Kauffman Foundation, 2019), and Eurostat's Business Demography Statistics (Eurostat, 2024) rely primarily on administrative records, executive surveys, or national statistical sources rather than GEM. Similarly, recent academic frameworks – including the Inclusive Entrepreneurial Ecosystem Index (Hameed et al., 2023) and the NUTS-3 local ecosystem diagnostics (Hess, 2025) – do not explicitly report GEM use. Conceptual contributions, such as Audretsch and Link's (2012) "primitives" framework, remain analytical rather than data-driven.

3.3. The GEM Data in Academic Research

The origins of the GEM can be traced to Paul D. Reynolds, who, inspired by an idea of Michael Hay in 1997, sought to develop a "World Enterprise Index" as an analogue to established benchmarks as the Swiss-based International Institute for Management Development's *World Competitiveness Yearbook* and the World Economic Forum's *Global Competitiveness Index*. Unlike these frameworks, which were focused on the performance of large, established firms, Reynolds envisioned an instrument that would highlight the role of entrepreneurial activity in shaping economy. His ambition was to create a complementary perspective to the Global Competitiveness Model by incorporating insights on the significance of new and small firms in business dynamics (Levie and Autio, 2008, p.237).

The GEM has not only established itself as a cornerstone in the measurement of entrepreneurial activity but has also exerted a considerable influence on academic scholarship and international policy frameworks. In the influential article *"The Global Entrepreneurship Monitor (GEM) and Its Impact on Entrepreneurship Research"*, Professor Niels Bosma (2013) systematically reviewed 89 academic publications in SSCI-listed journals since 2004 year that employed GEM data, highlighting the growing role of the GEM model as a resource for comparative entrepreneurship studies. According to Bosma, the GEM's value lies in its unique methodology, which captures both individual-level entrepreneurial behavior through the APS and the broader institutional context via the NES. This dual-level approach contributes to data quality and usability and allows for analyses that connect entrepreneurial attitudes and activities with framework conditions, thus offering insights not readily available in conventional datasets.

Importantly, Bosma (2013) emphasized that GEM data not only supports internal research within the GEM network but is increasingly applied by external scholars, thereby strengthening its credibility and academic relevance. The author noted that the GEM's third stated objective then – assessing the impact of policy on entrepreneurship – was becoming more feasible over time as the dataset expanded and accumulated longitudinal depth. As the GEM has evolved, it has become increasingly clear that simply pursuing higher levels of entrepreneurial activity is not necessarily an optimal policy objective for all countries. A more nuanced understanding suggests that the emphasis should instead be placed on identifying and supporting policy interventions that foster *appropriate levels and types* of entrepreneurship, aligned with the specific developmental stage and structural conditions of each national economy. In this regard, the GEM's third objective could be reformulated to highlight the importance of tailoring entrepreneurship policy to national contexts rather than promoting uniform increases in activity. Furthermore, the GEM's ongoing initiatives then to enhance the accessibility and transparency of its datasets for scholars beyond its immediate network are likely to stimulate new avenues of research, thereby strengthening the evidence base for both academic inquiry and policy design (Bosma, 2013, pp.162, 203). This makes the GEM particularly suitable for evaluating how entrepreneurship contributes to economic growth, employment generation, and social development. At the same time, Bosma also recognized methodological limitations, such as challenges in fully capturing the multidimensional nature of entrepreneurship across diverse economies (Bosma, 2013, pp.164, 181, 201).

As recognized in the previous section of this chapter, the influence of the GEM extends beyond academia into various international measurement frameworks. In this sense, the GEM model serves a dual role: advancing scholarly research while simultaneously enriching policy-oriented frameworks that guide governments in designing entrepreneurship support strategies. In this context, Bosma's (2013)

analysis thus underscores that GEM's impact is both academic and practical. On the one hand, it provides an empirical foundation for theoretical development and comparative analysis in academic entrepreneurship studies, and on the other hand, it supports policymakers and international organizations in crafting evidence-based approaches to foster national entrepreneurial ecosystems in a valid way. A decade later, the recognition of GEM as a multi-faceted instrument continues to affirm its role in bridging the gap between research and policy, although scholars have also emphasized some limitations.

3.4. Academic Debates and Critiques of the GEM

In recent years, entrepreneurship policy has increasingly been recognized as a distinct policy domain, prompting many countries to strengthen their efforts to measure entrepreneurial activity at the national level. At the international level, initiatives led by the World Bank, Eurostat, and organizations such as the GEM have likewise sought to develop datasets that enable cross-country comparability. Nevertheless, it remains the case that few, if any, of these initiatives capture the entrepreneurship phenomenon in its entirety, either conceptually or empirically. Importantly, none of these projects explicitly claim to provide a comprehensive measure, *since all acknowledge the inherently multi-dimensional character of entrepreneurship* and the limitations of measuring selected aspects. Furthermore, developments in the national-level measurement approaches rarely succeed fully in ensuring international comparability (Ahmad and Hoffman, 2008, p.7).

The establishment of the GEM in the late 1990s represented a pioneering initiative in entrepreneurship research but it also marked a significant effort in the empirical study of the entrepreneurship (Acs et al., 2019, Bosma, 2013). Its initial survey instrument, designed under the leadership of Paul D. Reynolds, was primarily intended to examine the early stages of new business creation within advanced

economies (Reynolds, 2005). With the subsequent inclusion of a broader set of developing countries, however, methodological challenges became increasingly apparent. Issues such as the comparability of database, particularly with respect to innovation-related indicators, emerged as notable concerns. The predominant focus was on the quantitative dimensions of entrepreneurial activity at the expense of qualitative factors and this also was seen as a problem (Acs et al., 2019).

According to Acs, a leading figure in the early development of the GEM network, while consistency in survey design is essential for longitudinal analysis, the GEM has demonstrated limited flexibility in revising its core questionnaire to reflect changing economic and technological realities. More than two decades after its inception, the TEA continue to serve as the flagship indicator of GEM reporting. However, in the intervening years, the global context of entrepreneurship has shifted dramatically, most visibly through the digital transformation of economies and the emergence of new entrepreneurial forms. Despite these developments, the GEM's methodological model has remained largely oriented towards capturing traditional forms of entrepreneurship, raising questions about its capacity to fully capture contemporary entrepreneurial phenomena (Acs et al., 2019, pp.vi–vii).

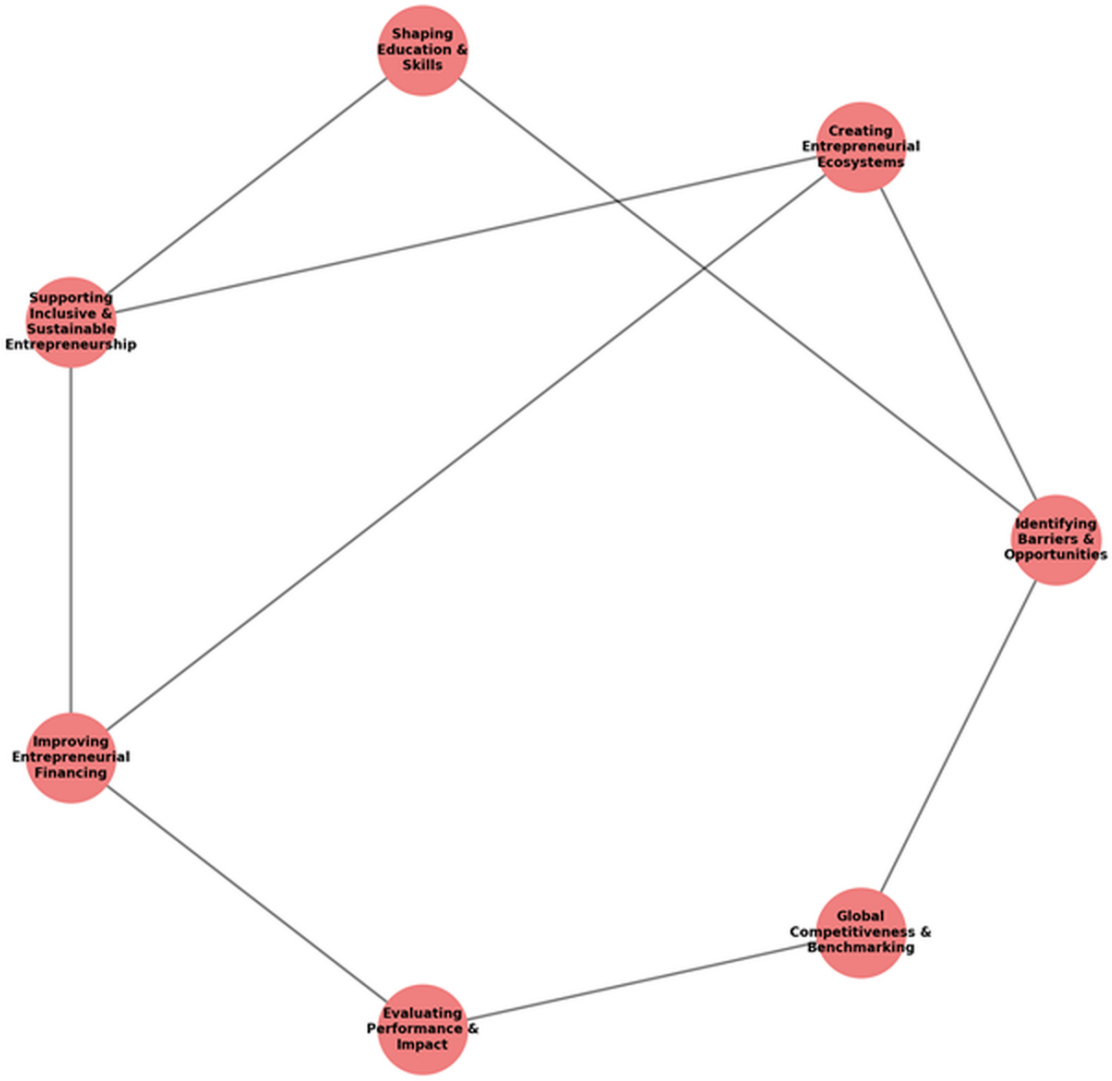
Critiques of the GEM model are both evident and necessary, as critical assessment is an integral part of the refinement of any analytical framework. Constructive criticism not only highlights methodological and conceptual limitations but also provides opportunities for continuous improvement. In this way, debate around the GEM's design and application can contribute to strengthening its analytical validity and, ultimately, enhance its capacity to inform governments and influence entrepreneurship policy in more effective ways.

3.5. The GEM Data Impact on Entrepreneurship Policy

As previously noted, questions and uncertainties regarding the impact of GEM data on entrepreneurship policymaking persist. In response to these critiques, the following section of this chapter seeks to examine potential positive relationships associated with this issue. Nevertheless, it has been widely acknowledged that the GEM offers valuable insights and demonstrate positive relationships in informing policymakers.

The diagram *GEM Data Impact on Entrepreneurship Policy* is presented below. The model illustrates the potential interactions among several key dimensions of entrepreneurship policy and practice. These framework dimensions – shaping education and skills, creating entrepreneurial ecosystems, identifying barriers and opportunities, supporting inclusive and sustainable entrepreneurship, improving entrepreneurial financing, evaluating performance and impact, and benchmarking competitiveness – are more interconnected rather than discrete (GEM, 2025). For example, enhancing education and skills in schools can strengthen entrepreneurial ecosystems by equipping individuals with capabilities to identify opportunities and to overcome barriers. Similarly, effective financing mechanisms are closely linked to the inclusivity and sustainability of entrepreneurship (Acs et al., 2019), while systematic evaluation of performance and benchmarking tools provide the evidence base needed for policy refinement (Bosma, 2013). Taken together, these interactions show the dynamic and multidimensional nature of entrepreneurship, in which progress in one area can inform and generate positive spillovers across others, thereby reinforcing the overall environment for entrepreneurial activity (GEM, 2025). The sources for such linkages are based on a literature review.

GEM Data Impact on Entrepreneurship Policy Diagram



(Source: Self-designed with Chat GPT)

Explanation of Interactions

- Identifying Barriers & Opportunities ↔ Creating Entrepreneurial Ecosystems:

Barriers like lack of finance or regulatory burdens inform about the design of entrepreneurial ecosystems that could address these problems through supportive infrastructure, networking, and targeted policies.

- Identifying Barriers & Opportunities ↔ Shaping Education & Skills:

Information about skill gaps helps guide reforms in education and training to develop a workforce better prepared for entrepreneurship.

- Creating Entrepreneurial Ecosystems ↔ Supporting Inclusive & Sustainable Entrepreneurship:

Incubators and startup hubs can embed inclusivity and sustainability goals into their operations.

- Creating Entrepreneurial Ecosystems ↔ Improving Entrepreneurial Financing:

Strong ecosystems depend on accessible financing, linking investment channels with supportive environments.

- Shaping Education & Skills ↔ Supporting Inclusive & Sustainable Entrepreneurship:

Education initiatives can be designed to reach underrepresented groups, fostering equitable opportunities.

- Supporting Inclusive & Sustainable Entrepreneurship ↔ Improving Entrepreneurial Financing:

Specialized financing solutions could be developed for women, youth, education, and environmentally-focused businesses.

- Improving Entrepreneurial Financing ↔ Evaluating Performance & Impact:

Funding programs are assessed for effectiveness using GEM's entrepreneurial performance indicators.

- Evaluating Performance & Impact ↔ Global Competitiveness & Benchmarking:

Ongoing performance tracking allows comparison with other nations and informs policy adjustments.

- Global Competitiveness & Benchmarking ↔ Identifying Barriers & Opportunities:

Benchmarking could reveal structural weaknesses, feeding back into the identification of barriers to growth.

The academic literature investigating linkages between various entrepreneurship measurement frameworks and the entrepreneurship policy implications has been steadily expanding. This growing field of research reflects increasing recognition that measurement tools are essential for informing evidence-based policymaking. By analyzing how globally applied frameworks conceptualize and operationalize entrepreneurship, scholars contribute not only to methodological refinement but also to a deeper and nuanced understanding of how measurement influences the design and evaluation of policy interventions (Bosma, 2013).

The GEM has had a significant impact on the development of entrepreneurship policy worldwide by generating large-scale, comparative datasets that capture the dynamics of entrepreneurial activity. Despite critical notes, GEM data provides detailed insights into the entrepreneurial landscape of countries, highlighting barriers, opportunities, and emerging trends that shape national entrepreneurial ecosystems and enables policymakers to design more effective, evidence-based strategies aimed at fostering entrepreneurship and economic growth (Reynolds et al., 2005; Levie and Autio, 2008; Bosma, Hill and Ionescu-Somers, 2020).

One of the key contributions of GEM to policy is the identification of barriers and opportunities for entrepreneurs. Its surveys shed light on obstacles such as access to finance, regulatory burdens, market dynamics, and the availability of skilled labour (Reynolds et al., 2005). These findings have encouraged governments to adopt targeted measures, for example, venture capital incentives, microfinance schemes, and the simplification of bureaucratic procedures, to improve the business climate (Acs and Szerb, 2010). By highlighting deficiencies in national entrepreneurial environments, GEM data provides the empirical foundation for reforms that lower barriers to entry and support enterprise growth (Minniti, 2010). The GEM model has also been influential in shaping the design of entrepreneurial ecosystems. By capturing the activity of entrepreneurs at various stages – nascent, early-stage, and established – GEM highlights structural weaknesses and resource gaps within the environment. These insights inform policies aimed at promoting infrastructure development, innovation hubs, and startup incubators that enhance access to resources, networks, and talent (OECD, 2020; Stam, 2015). For instance, deficiencies in digital and transport infrastructure, as highlighted in GEM surveys, have led policymakers in some countries to prioritize investments in connectivity and logistics to facilitate entrepreneurial activity (Bosma et al., 2020).

Education and skill promotion policies are another area where GEM has provided valuable guidance. Data on entrepreneurial skills and attitudes reveal where gaps exist in technical, managerial, and innovation capacities. Policymakers have used these data to justify integrating entrepreneurship education into school curricula, expanding training programmes, and encouraging lifelong learning (Acs and Szerb, 2010; European Commission, 2018). The GEM data on entrepreneurial attitudes has been employed to promote policies fostering an entrepreneurial mindset among youth, cultivating risk-taking, creativity, and resilience (Bosma et al., 2020).

Inclusivity in entrepreneurship has also become a prominent theme in GEM-based policymaking. Data on gender, age, and ethnic participation in entrepreneurship has underlined the underrepresentation of specific groups, prompting targeted interventions such as women-focused grants, mentorship schemes, and diversity-driven programmes (Kelley et al., 2017). Furthermore, the GEM's capacity to capture shifts in entrepreneurial motivations has provided evidence for supporting sustainable and green entrepreneurship, with governments increasingly directing resources toward eco-innovation and environmentally responsible ventures (OECD, 2020).

Financing entrepreneurship endeavours remains a central challenge, and GEM data has consistently highlighted the financing gaps faced by early-stage firms. As a result, policies such as seed funding, co-investment schemes with private investors, angel investor incentives, and crowdfunding regulations have been designed to increase access to capital (Reynolds et al., 2005; Minniti, 2010). These policies aim to strengthen the financing pipeline and ensure that promising ventures can scale.

Beyond policy design, GEM indicators, such as total early-stage entrepreneurial activity (TEA), innovation rates, and business survival rates, have been employed as benchmarks for policy evaluation. Policymakers use these indicators to monitor performance, make iterative improvements in entrepreneurship policies and track progress (Reynolds et al., 2005; Levie and Autio, 2008). GEM's benchmarking function is particularly important at international level, where it allows countries to compare their entrepreneurial performance with global peers and identify both competitive advantages and areas of weakness. This comparative perspective has been instrumental in aligning national policies with global best practices and enhancing competitiveness (Acs et al., 2018; Stam, 2015).

In conclusion, the GEM plays a role, comparatively to other models influential, in shaping entrepreneurship policy by providing a robust empirical basis for identifying barriers, fostering inclusive and sustainable ecosystems, designing education and financing initiatives, and benchmarking performance at national and international levels. By offering policymakers a systematic and comparable dataset, the GEM has become a consistent body of knowledge of evidence-based entrepreneurship policymaking across diverse economic contexts.

CHAPTER IV. THE GLOBAL ENTREPRENEURSHIP MONITOR MODEL FOR MEASUREMENT OF ENTREPRENEURIAL DYNAMICS

The design of this chapter of the thesis aims to provide the reader with information about the GEM project that was initiated in 1999 year and its objectives, the GEM conceptual framework, methodology and applied measures of entrepreneurship. Further, the focus is set on empirical analysis, examining policy implications for economic and social life, with particular attention to selected GEM countries, and compares the national GEM models of Croatia and Spain. The methodological approach in the current chapter relies on a review of secondary data mainly from the GEM's global annual reports from 2023/2024 "25 Years and Growing" and 2024/2025 "Entrepreneurship Reality Check". The chapter incorporates insights derived from live discussions held during the launches of GEM Global Reports.

4.1. The GEM Model: Initiative and Mission

The introduction chapter emphasized the importance and relevance of the issue of appropriate measuring of the entrepreneurial activity and ecosystem for the aim of adequate adjustments of governmental policies towards better achievement of desired outcomes and adaptation to changing conditions. This is often a complex process that might require a modification of existing legislation, guidelines or strategies, and thus this determines the question of how methods are applied to measure the entrepreneurship phenomenon as a vital one.

The GEM project started more than 25 years ago to address this issue as a research initiative and collaboration between two prestigious university authorities located in Europe and the United States, respectively between London Business School and Babson College. GEM began with only 10 participating economies in 1999,

precisely Canada, Denmark, Finland, France, Germany, Israel, Italy, Japan, UK, USA, and it involved 56 participating economies in 2024, thus growing up today to the world's most comprehensive and longest-running study of entrepreneurial dynamics (GEM Global Report, 2025, p.20). The GEM's activity is organized as a consortium and a network of National Teams.

The research is conducted every year within the GEM affiliated countries and since its founding around 120 economies from every corner of the globe have participated and contributed to the database. The GEM collects primary data from (1) individuals who endeavor for entrepreneurship; and (2) high quality experts in the participating economies. The multinational GEM research process involves consistent efforts and generates "substantial intellectual capital". The GEM model measures and evaluates the entrepreneurship within local, regional or national entrepreneurial environment, or a mixture of all, taking into account only the real act of starting or running a new business by the individuals. Therefore, the *entrepreneurship* is defined as the action of starting or running a new business, and the *entrepreneurial activity* is the percentage of adults participating actively in starting or running a new business (GEM Global Report, 2025, p.20).

At the heart of the GEM model is the distinction between three key phases of entrepreneurial activity: potential entrepreneurship (entrepreneurial attitudes), nascent and new business activity (early -stage entrepreneurship), and established business ownership (entrepreneurial outcomes). These stages are influenced by individual perceptions such as perceived opportunities, capabilities, intentions, and fear of failure, which together determine a population's propensity to engage in entrepreneurial behavior (Reynolds et al., 2005; Bosma and Kelley, 2019; GEM Global Report, 2025, p.207). This tendency subsequently shapes entrepreneurial outcomes and contributes to variations in economic development and growth.

The GEM mission and objectives are in service of many different stakeholders affiliated with entrepreneurship, and of societies around the globe in general, via exploring and analyzing entrepreneurial ecosystems beyond the official statistics produced by national bodies, e.g. registration of businesses. It has been recognized that governments and local authorities, public and private organizations, groups and individuals: *"…increasingly need hard, robust and credible data to make key decisions that stimulate sustainable forms of entrepreneurship and promote healthy entrepreneurial ecosystems worldwide"* (gemconsortium.org). The GEM research and contribution is valuable for policymakers and it is highly appreciated by numerous stakeholders as academics, university students, startups and business investors, international organizations, sponsors, etc. The statistics are summarized in the following section and present what the GEM has achieved by nowadays (gemconsortium.org).

Overview of GEM Key Features

Key Feature	Details
Years of Operation	25 years of work and data collection enabling longitudinal analysis globally
Interviews Conducted	Over 170,000 interviews with adults and experts annually
Global Coverage	Data collected from around 120 economies across 5 continents over 25 years
Research Collaboration	Partnership with over 370 research specialists
Academic and Research Institutions Involved	More than 150 academic and research institutions
Funding Support	Backed by over 150 funding institutions

(Source: Self-designed)

4.2. The GEM Framework and Methodology

The Global Entrepreneurship Monitor (GEM) provides one of the most widely used conceptual frameworks, within other frameworks mentioned in the literature review, for understanding the dynamics of entrepreneurship across the globe. Its foundation lies in a comprehensive model that views the entrepreneurial activity as an outcome of both individual-level capabilities and perceptions, and systemic framework conditions (Bosma and Kelley, 2019). The conceptual framework of the GEM project was launched in 1997 year by two academics, Michael Hay from London Business School, and Bill Bygrave from Babson College in the United States.

Since its inception, the GEM initiative has been conceptualized as a model to investigate the interdependency between the entrepreneurship phenomenon and the socio-economic development by virtue of data collection and analysis of the relationship between the act of a new business creation and the external conditions that impact on that decision and its execution. The choice to start a new business is determined by social, cultural, economic and political variables that influence the effect of the new establishment on number of new jobs and levels of value added, and in this way – the eventual outcome on socio-economic development. Simultaneously, the cumulative impact of multiple entrepreneurial initiatives may contribute to a shift in social values and norms, fostering more favorable attitudes toward entrepreneurship and encouraging future entrepreneurial activity (GEM Global Report, 2025, p.207). The GEM conceptual framework offers a multi-level understanding of entrepreneurship by linking individual motivations and systemic enablers. Its broad applicability has made it a key instrument for comparative entrepreneurship research and a reliable resource for informing evidence-based policy decisions (Bosma and Kelley, 2019).

The identified **Entrepreneurial Framework Conditions (EFCs)**, which either facilitate or constrain the levels of entrepreneurial activity in a certain economy, and in addition serve as the foundational elements for the experts' survey method, are the following according to the GEM 2025 Global Report (p.210):

Entrepreneurial Framework Conditions and Guiding Questions

EFCs	Guiding Question
A1. Entrepreneurial Finance	Are there sufficient funds for new startups?
A2. Ease of Access to Entrepreneurial Finance	And are those funds easy to access?
B1. Government Policy: Support and Relevance	Do they promote and support startups?
B2. Government Policy: Taxes and Bureaucracy	Or are new businesses burdened?
C. Government Entrepreneurial Programmes	Are quality support programmes available?
D1. Entrepreneurial Education at School	Do schools introduce entrepreneurship ideas?
D2. Entrepreneurial Education Post-School	Do colleges offer courses in starting a business?
E. Research and Development Transfers	Can research be translated into new businesses?
F. Commercial and Professional Infrastructure	Are these sufficient and affordable?

EFCs	Guiding Question
G1. Ease of Entry: Market Dynamics	Are markets free, open and growing?
G2. Ease of Entry: Burdens and Regulation	Do regulations encourage or restrict entry?
H. Physical Infrastructure	Is this sufficient and affordable?
I. Social and Cultural Norms	Does culture encourage and celebrate entrepreneurship?

(Source: Self-designed)

The conceptual framework is empirically applied through two survey instruments. The GEM is a world network composed of **National Teams** responsible for the execution of two types of surveys that form the core of the **GEM methodology**. The applied methodology is claimed to be superior in terms of the provision of a high-quality primary data that is obtained via harmonized research design for all participating economies. One of the distinct features of the methodology is the panel of indicators rather than indexes. The data is collected annually and based on the method of survey, scilicet via (1) the **Adult Population Survey (APS)** and (2) the **National Expert Survey (NES)**.

The APS captures individual-level behavior and mindset, while the NES analyzes the broader ecosystem context. The GEM's methodology seamlessly integrates *micro-level behavioral surveys with macro-level experts' assessments*. The two methods are *complementary* and together allow the GEM to track entrepreneurial activity and relate it to environmental conditions in a comprehensive manner. This blended APS–NES methodology is what has enabled GEM to consistently track entrepreneurial activity for over 25 years, shaping our understanding of the drivers and barriers in entrepreneurship globally.

In some countries the National Teams objectively direct the surveys towards more regional data collection, in order to promote better regional policies (Oreshkova, J., 2017, AAU Semester Project). A summary of the methods of APS and NES is presented in the following section, based on data from the GEM 2024/2025 Global Report.

Summary of APS and NES applied in the GEM methodology

Survey	Scope	Measures	Outputs
APS	≥ 2,000 individuals per economy; ~150k global responses	TEA, perceived opportunities/capabilities, fear, intentions, AI usage	Core entrepreneurial indicators, plus insights into emerging issues (e.g., AI)
NES	≥ 36 experts per economy	EFCs rated via Likert scale	NECI scores, ecosystem diagnostics, comparison across countries (e.g., UAE leader)

(Source: Self-designed)

The participating countries could access the data only after it has been analyzed by the GEM's data experts, who must first ensure the quality of the data collection and the consistency and uniformity of the statistical calculations.

4.2.1. The Adult Population Survey (APS)

The APS collects primary data, typically between April and June, through vetted survey vendors directly from individuals and this makes the GEM model unique. It is argued that its methodology is the only one obtaining data straight on a single-respondent level. The adults represent a random sample of at least 2000 people aged between 18 and 64 years. The survey accumulates data about the individuals' perception and attitude towards entrepreneurship. In each participating economy, the APS is conducted by a respective GEM National Team, most often composed of academics affiliated with leading universities, and in some cases, by other institutions possessing relevant expertise and a vested interest in entrepreneurship. These entities collaborate closely with the GEM consortium to ensure that survey questions are administered uniformly in all GEM countries, and thus facilitating valid cross-country comparisons, and longitudinal analyses regarding individual economies. This approach contributes to the methodological harmonization of the GEM global consortium. While maintaining a stable core questionnaire to track trends over time, the GEM introduces each year rotating modules reflecting current themes. New questions are incorporated into the APS as a part of an ongoing effort to capture and reflect emerging economic and social changes (GEM Global Report, 2025, p.208). In 2024 the APS explored also the artificial intelligence (AI) relevance to the entrepreneurs – how they use it and perceive its potential, while in 2023 the rotating module focused on environmental and social sustainability. The GEM survey is considered as rigorous, globally standardized instrument capturing diverse dimensions of entrepreneurial activity through stable core indicators and adaptive topical inserts, thereby remaining indispensable for both policymakers and scholars. The GEM's APS reveals who entrepreneurs are, what drives them, and what holds them back, offering a powerful lens on global entrepreneurship.

As mentioned previously, the GEM' data differs from the official statistics in each economy by capturing not only the registered new entities but by addressing the challenge of collecting comprehensive data by ensuring the anonymity of the APS respondents, thereby reflecting entrepreneurial activity within informal economy, an area often overlooked by official statistics. This is especially important aspect within developing economies, where many startups often do not register formally. This marks a key distinguishing feature of the GEM model in comparison to other methodologies for measurment of entrepreneurial activity (GEM Global Report, 2025, p.208). In 2024 year the GEM National Teams interviewed over 150 000 individuals across 51 economies, and this result represents more than 63% of the world's population, and thereby exceeding 77% of the global GDP (GEM 2025 Global Report, p.12).

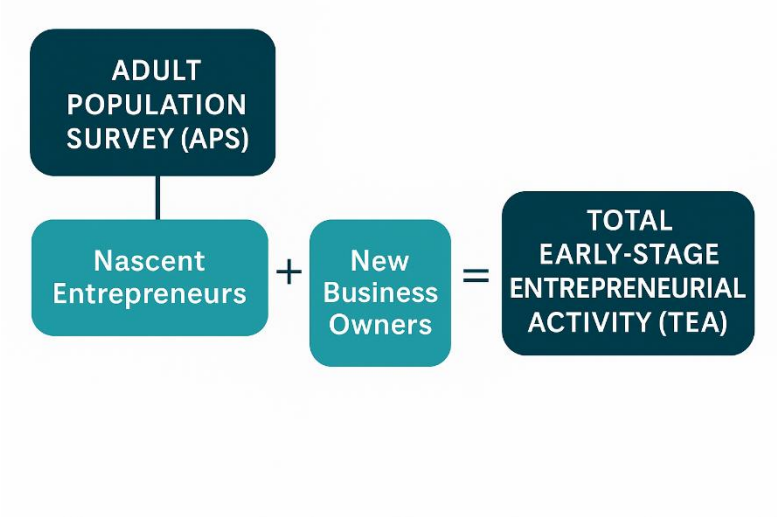
The APS is the only one method within the GEM's methodology that provides the data source to calculate one of the core individual-level indicators and to measure the prevalence of entrepreneurship within the participating economies. This key indicator is **Total early-stage Entrepreneurial Activity (TEA)** and it was firstly introduced in GEM's early 2000s surveys under Paul Reynolds. TEA includes nascent entrepreneurs and owner-managers of a new business under 3.5 years old. The APS defines the early-stage entrepreneurship via respondents who are:

- **Nascent entrepreneurs** – individuals actively trying to start a new business (e.g., working on a business plan, securing resources, but the business has not yet paid wages for more than 3 months);
- **New business owners** – those actively running a business that has been operating and paying salaries or wages (including to self) for longer than 3 months but less than 42 months (3.5 years).

Therefore, the TEA rate is defined as the percentage of adults, aged between 18 and 64, who are actively involved in starting or running a new business that has

not paid wages or salaries for 3.5 years equal to 42 months or more. Entrepreneurs who are new business owners but also fit into nascent entrepreneurship definition are not counted. (GEM 2025 Global Report, pp.208–210). TEA indicator does not measure established business ownership (EBO) – businesses older than 3.5 years. It does not include either informal work unless it meets the entrepreneurial criteria of intentional, profit-oriented activity to create or expand a business in which the individual has ownership or control and organize resources (Reynolds et al., 2005; GEM Methodology Manual).

In formula: TEA = Nascent Entrepreneurs (%) + New Business Owners (%), excluding those counted in both categories to avoid duplication.



(Source: Self-designed with Chat GPT)

It is important to clarify that the GEM model groups the participating economies into three stages of economic development when assessing TEA:

- Factor-driven (low income; necessity entrepreneurship dominates);
- Efficiency-driven (middle-income; mixture of necessity- and opportunity-driven entrepreneurship);
- Innovation-driven (high income; opportunity entrepreneurship dominates).

The APS provides a broad range of supplementary data to support the analysis, interpretation, and disaggregation of TEA. These include:

- Perceived opportunities and capabilities – the individuals' confidence in recognizing and pursuing entrepreneurial ventures;
- Fear of failure rate – the proportion of individuals who perceive startup opportunities but refrain from taking action due to fear;
- Intentions and motivations – distinguishing between innovation-driven (opportunity-driven) and necessity-driven entrepreneurial activity, as well as established business ownership;
- Innovativeness, international orientation, and job creation potential;
- Demographic characteristics – e.g. gender, age, and educational profiles of early-stage entrepreneurs.

TEA indicator, originally developed within the GEM framework, has been widely adopted to support the analyses of economic processes by institutions beyond the GEM network. First, reliable international organisations such as the Organisation for Economic Co-operation and Development (OECD) have integrated TEA into their frameworks for SME and entrepreneurship policy analysis, particularly in cross-country comparisons. Other global institutions, including the World Bank, the United Nations, and the World Economic Forum, also reference TEA data in evaluations of entrepreneurial ecosystems and enabling environments (Bosma and Sternberg, 2014; Reynolds et al., 2002). Second, national governments (Scotland) have adopted TEA for policy monitoring purposes and to assess entrepreneurial activity. Third, TEA is frequently used not only in academic research but also in regional comparative studies, e.g. comparative European Union's research often leverages TEA to compare efficiency-driven and innovation-driven economies (Rusu, 2016).

In terms of academic relevance, scholars use TEA to study relationships between entrepreneurship and broader macroeconomic indicators and outcomes such as GDP growth, employment, and innovation, as well as to distinguish between *necessity-driven TEA*, where individuals start businesses due to a lack of better employment options, and *opportunity-driven TEA*, where the entrepreneurial act is motivated by the pursuit of a perceived business opportunity (Acs et al., 2008). In research and policy contexts, TEA is a quantitative measure used to assess a concept. Therefore, TEA is *quantifiable* – expressed as a percentage of the adult population, *comparable* across time and countries, and *meaningful* for tracking entrepreneurial dynamics and informing policy. In conclusion, TEA indicator is the GEM's signature entrepreneurship metric, included annually since inception. TEA could not be measured without the APS data. They are intrinsically linked, making the APS an empirical foundation of one of GEM's most cited and policy-relevant indicators.

4.2.2. The National Expert Survey (NES)

Since its inception, the GEM suggests that the dynamics of entrepreneurship are closely linked to contextual factors that either support or constrain the creation of new businesses. The NES is the GEM's methodological instrument applied to examine these linkages, which are considered as essential levers for policymakers. As noted previously, the GEM's methodology identifies key conditions that are considered to have a significant impact on entrepreneurial activity, known as the Entrepreneurial Framework Conditions (EFCs). The framework is built on nine substantial conditions, some of them disaggregated, resulting in thirteen distinct components overall. The NES examines the quality of a country's entrepreneurial environment (EFCs), in which the individual stakeholders act. Unlike the APS, which captures the perceptions and activities of the individuals, the NES draws

on insights and opinions of selected national experts to evaluate the institutional features that affect the entrepreneurship (Bosma et al., 2021).

The NES was developed in response to the absence of nationally harmonized indicators capable of systematically measuring the specific EFCs. The survey yet remains the only tool that provides standardized and internationally comparable data, explicitly focused on the environmental factors. Although the NES shares methodological similarities with other expert-based surveys that rely on experts' judgements to assess national conditions, such as the World Economic Forum's *Global Competitiveness Index* and the World Bank's *Doing Business* report, its key methodological distinction lies in its exclusive focus on the EFCs, rather than on broader macroeconomic or institutional factors. This targeted approach enables a nuanced understanding of the specific conditions that affect the entrepreneurial activity (gemconsortium.com).

The NES is a qualitative survey conducted within 36 identified experts from each participating economy who differ on yearly basis according to the requirements. For each of the nine EFCs four national experts are selected with the requirement that at least one must have direct experience in some phase of the entrepreneurial process. The surveyed experts include academics, policy-makers, entrepreneurs, representatives from financial and corporative sectors, media, non-governmental organizations, etc. The NES does not impose restrictions on the age or gender of participants. The experts' selection is based on their professional experience and domain-specific expertise related to the EFCs. The experts are asked to answer questions that include socio-demographic characteristics, along with additional information regarding their professional background and involvement in various aspects of the entrepreneurial process. Their collective insights help to assess the EFCs, although there are evidences for challenges in the process of the NES data

collection such as planning of recruitment and sufficient number of experts, and time management by the National Teams (gemconsortium.com).

The central methodological research instrument of the NES is the implication of the **Likert scale**, which allows the national experts to convey and communicate their *subjective level of agreement or disagreement* with a series of standardized statements. The Likert scale is one of the most widely used measures in surveys for estimation of attitudes, perceptions, and opinions. Developed by Rensis Likert in 1932 year, it enables the respondents to express the extent of their agreement or disagreement with a given statement, typically using a five- or seven-point ordinal scale (Likert, 1932; Boone and Boone, 2012). In the context of the GEM, the Likert scale aims to capture experts' assessments of national entrepreneurial environments (EFCs) in a unified and quantifiable manner. In more details, a five, seven, nine or eleven-point scales could be used, ranging from 1 for "strongly disagree" to 5, 7, 9 or 11 for "strongly agree". For example, on a five-point scale – "strongly agree", "somewhat agree", "neither agree nor disagree", "somewhat disagree", or "strongly disagree" – score each motive. This approach facilitates relatively nuanced assessments of the framework conditions and allows for aggregation of subjective judgments into comparative indices, explained in the following paragraph, while maintaining consistency (Bosma et al., 2021).

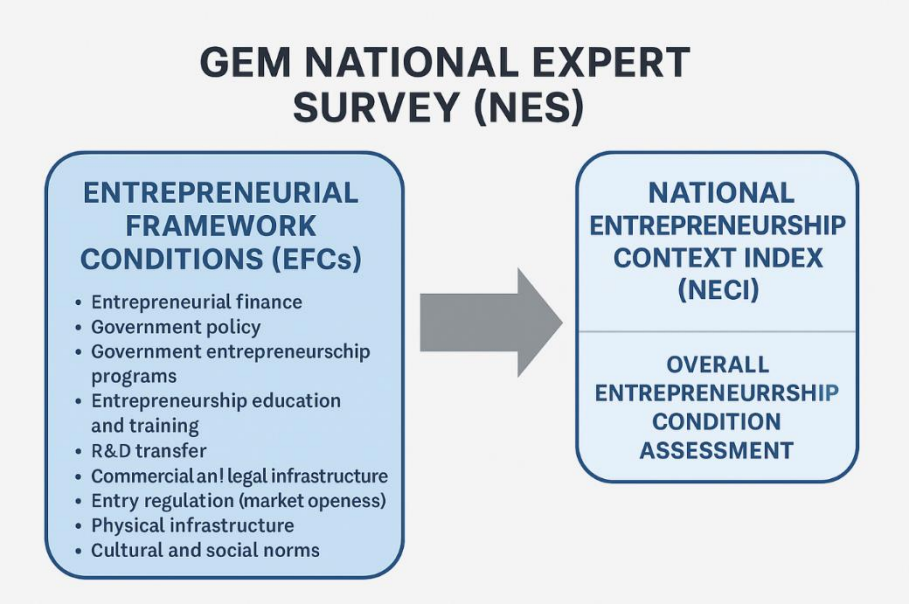
The NES results are used to generate a tool that ranks the countries based on the strength of their entrepreneurial ecosystems. The survey plays a vital role in terms of extracting the GEM's **National Entrepreneurship Context Index (NECI)**, introduced in 2018 year, which positions the GEM national economies according to the experts' evaluation of fundamental framework conditions. The NECI sums up in a single figure the average state of the 13 national EFCs, identified by GEM researchers as key drivers of a supportive entrepreneurial environment. The NECI provides a composite score that reflects the overall quality of a country's EFCs

through application of eleven-point Likert scale. The index is simply the average of the thirteenth framework condition scores for a particular economy (GEM Global Report, 2025, p.84). By quantifying expert perceptions, the NECI offers valuable and actionable comparative insights into the structural conditions.

The simplicity and reliability of the Likert scale have made it a preferred method for evaluating perceptual data, particularly in fields where direct measurement is difficult. However, it is important to note that Likert scales generate *ordinal data*, meaning that while the order of responses is meaningful and reflects a progression from "strongly disagree" to "strongly agree", the intervals between these response categories are not necessarily equal (Jamieson, 2004). The psychological distance between "agree" and "strongly agree" not always is perceived the same as that between "neutral" and "agree" by different respondents. This distinction might have implications for the statistical analysis and the interpretation of the results (Koo, 2025; Sullivan et al., 2013). Despite these limitations, the scale remains highly practical and interpretable tool in massive social research like the NES.

The NES method provides opportunity for in-depth analysis of the entrepreneurial dynamics over time regarding the same economy, and importantly, the collected database is considered essential for a cross-country comparability globally, thus enabling meaningful benchmarking and longitudinal study of the entrepreneurial environments. These qualitative and comparative insights are critical for informed policymaking and institutional reform. It is argued that by highlighting strengths and weaknesses of a country’s entrepreneurial ecosystem, the NES results guide policymakers in prioritizing interventions aimed at improving specific framework conditions that influence entrepreneurial activity (Autio et al., 2014).

In summary, the NES is a core component of the GEM methodology, providing policy-relevant, expert-based evaluations of national entrepreneurial ecosystems. These insights contribute to evidence-based policymaking aimed at strengthening entrepreneurship. (Bosma et al., 2021).



(Source: Self-designed with Chat GPT based on GEM 2024/25 Global Report)

4.3. The GEM Policy Implications

Once the GEM Global Report is published, usually in February every year, the National Teams normally issue and disseminate their respective National Reports. Policymakers around the world have benefited for over 25 years from the GEM's data and analyses, using them to foster entrepreneurship in a more favorable and effective manner, and thereby contributing to economic growth and prosperity. The GEM released a series of *Policy Briefs* in 2016 and 2017 year and the papers highlighted successful initiatives related to particular GEM countries. Although these briefs were accepted positively by policymakers and business community, they did not fully address a critical issue and did not answer an important question.

As noted in the special report *"The Influence of GEM on Policy"*, a key point of inquiry raised by stakeholders concerned the extent to which GEM has actually influenced the policymaking process: *"…over the years you have compiled a huge repository of information on entrepreneurship and no doubt have the most authoritative and informative information on entrepreneurship in the world today. But, what has been done with this [GEM] information apart from an academic perspective? Has GEM influenced policy in any way?"*. Furthermore, it is widely acknowledged that the question of how the measurement of the entrepreneurial dynamics relates to policymaking is not a new, and it remains, as noted in this special report, an exceptionally difficult one to address (GEM, 2018, pp.3–4).

According to the GEM data many successful policies have been introduced based on the findings for specific economy. Some good examples have been presented and they refer to the GEM countries from all over the world, and in particular to economies in Europe such as Bulgaria, Croatia, Germany, Greece, Luxembourg, Poland, Slovenia, Slovakia, Spain, Sweden, Turkey; and economies outside like Brazil, Chile, China, Colombia, Guatemala, Ecuador, Israel, Malaysia, Puerto Rico, South Korea, Thailand, the USA.

The following section of the thesis briefly presents selected good practices and collaborative initiatives that highlight the potential of utilizing the GEM data and analyses. The cases are drawn from European countries, as their economic profiles share common characteristics and evolve within the framework of the European Union's key priorities for sustainable prosperity, competitiveness, and economic growth. As noted by the European Commission, Europe has long been a continent characterized by industry, enterprise, and innovation – continuously reinventing itself in a response to industrial and technological revolutions, global competition, and evolving societal dynamics (commission.europa.eu). In addition, publications by the European Commission, addressing entrepreneurship policy and research,

make frequently references to the GEM data. As a part of the research undertaken to achieve the thesis objectives, the cases of GEM Croatia and GEM Spain, within other noteworthy GEM countries, emerge as particularly interesting ones, offering illustrative examples of good practices that could be drawn.

4.3.1. GEM Policy Impact in Croatia: Good Practices and Lessons Learned

The GEM's concept has significantly contributed to shaping the entrepreneurial policy in Croatia by the accumulation of rigorous and internationally comparable data on entrepreneurial attitudes, activities, and the surrounding ecosystem. Since 2002, when its participation in the consortium began, Croatia has leveraged the GEM insights to guide more targeted, evidence-based policymaking, aimed at improving the entrepreneurial environment and ecosystem (Singer et al., 2020). The GEM has had a particularly notable impact in Croatia by raising awareness of a strategic value of prioritizing entrepreneurship, in both national and regional development strategies.

The GEM data regularly revealed challenges like limited entrepreneurial culture and self-confidence, educational gaps, inadequate innovation, and a weak support system for startups, all insights that have directly informed the public policy and contributed to targeted interventions (Singer, 2016; GEM, 2018). Croatia became a member of the EU on 1 July 2013, joining as the 28th member state, following a decade-long process of negotiations and reforms that began in 2003 year. The following good practices have been identified in the case of the GEM Croatia, offering valuable insights into effective entrepreneurial policy.

- Good Practice 1: National Entrepreneurship Development Strategy

The GEM findings influenced the design and the implementation of Croatia's *Entrepreneurial Development Strategy (2013–2020)* by the Croatian Ministry of

Entrepreneurship and Crafts. The strategy addressed key weaknesses identified in GEM Croatia national reports such as administrative burdens, limited access to early-stage finance, and a lack of coordination among entrepreneurship support institutions. As a result, Croatia introduced several reforms aimed to simplify business registration, improve SME financing, and strengthen innovation support infrastructure (Ministry of Entrepreneurship and Crafts, 2013; GEM, 2018, p.20).

- Good Practice 2: Integration into Education

The GEM's NES in Croatia consistently ranked the entrepreneurial education as underdeveloped. Informed by this emphasis on the entrepreneurial education at both the school and post-school levels, the government has undertaken initiatives to integrate entrepreneurship into its national curriculum. Entrepreneurial learning has been promoted notably through programs like the e-Schools project that aimed to work towards digital and entrepreneurial competencies, and partnerships with organizations like Junior Achievement to provide experiential entrepreneurship education to students (Singer et al., 2019; GEM Croatia, 2021). These programs aim to develop entrepreneurial mindsets and skills among young people, directly addressing the deficiencies highlighted in the GEM's Croatia NES.

- Good Practice 3: Regional Policy Development

Regionally disaggregated GEM data has been a powerful tool for tailoring local entrepreneurship strategies. Regions with low TEA rates like Istria and the City of Zagreb used GEM's findings to advocate more focused and responsive policy interventions. These included the creation of local business incubators, mentoring networks and schemes, and innovation hubs, aimed at boosting entrepreneurial activity in lagging areas (Singer, 2016).

- Good Practice 4: Policy Orientated Reports on SMEs

GEM Croatia reports are frequently referenced in policy-oriented publications related to small and medium-sized enterprises (SMEs). For example, the "*Small and Medium Enterprises Report – Croatia 2016"* incorporates findings from the

GEM Global Entrepreneurship Monitor Research for Croatia 2015. These reports have been regularly published by the *Policy Center for Entrepreneurship and SMEs (CEPOR)* since 2011. The *Croatia Consultancy Market Study* was initiated also by CEPOR and it was was developed as part of a project aimed at transferring knowledge, experience, and best practices. By drawing on the GEM Croatia data to pinpoint weaknesses within the Croatia's national entrepreneurial ecosystem, the study conclusions identified critical gaps between the demand for and supply of consultancy services (GEM, 2018, p.21).

- Good Practice 5: Informed Stakeholder Engagement

The GEM reports in Croatia have fostered stronger dialogue among stakeholders, including government agencies, academic institutions, and private sector actors, thus becoming a central reference point for public policy discussions. The annual publication of the GEM Croatia reports has served as a key reference document for forums and policy workshops, thereby enhancing the integration of academic research into the policy development processes. The GEM Croatia has improved the coordination in the entrepreneurship support system and helped to align the national programs with the actual entrepreneurial needs (Singer et al., 2020).

In conclusion, the GEM has provided Croatia with a comprehensive framework to diagnose challenges and design targeted policies to support entrepreneurship. By highlighting both strengths and areas for improvement through objective data and international benchmarks, and suggesting clear policy pathways, the GEM has encouraged data-driven reforms, leading to more nuanced and effective policy interventions. Continued participation in the GEM consortium and the strategic use of its findings can further strengthen Croatia's entrepreneurial ecosystem and enhance its resilience and competitiveness in the global economy in the years to come.

4.3.2. GEM Policy Impact in Spain: Good Practices and Lessons Learned

Spain has emerged as a strong example of how the GEM data serves as a strategic instrument for evaluating the environment and shaping the entrepreneurial policy. Since joining the GEM in 2000 year, Spain has consistently utilized the GEM data not only at the national level but also across its autonomous regions. This 25 years long-standing engagement has allowed the GEM's findings to become deeply embedded into its governance framework, regarding both legislative reforms and regional entrepreneurship development strategies. The GEM Spain represents a noteworthy case study of the potential impact of a well-structured National Team, comprising the remarkable 19 regional teams, more than 180 researchers across around 30 academic institutions, and the benefits from the support of nearly 100 regional sponsors (GEM, 2018, p.48; www.gemconsortium.org). According to the official data by the Spanish Entrepreneurship Observatory, over 200 scholars and experts in entrepreneurship, representing more than 40 academic and research institutions, participate currently in the initiative by GEM Spain. The following examples merit closer examination and reveal key practices worth considering.

- Good Practice 1: National Policy Reforms Informed by GEM

One of the most significant policy developments influenced by the GEM data in Spain is the *Law on Support for Entrepreneurs and their Internationalization (Law 14/2013)*. This law addressed several barriers identified in the GEM reports, such as complex administrative procedures, limited access to finance, and a lack of incentives for innovation and internationalization (GEM Consortium, 2023). More recently, the *Startup Law (Ley de Startups 28/2022)* incorporated the GEM indicators related to innovation-driven entrepreneurship and early-stage activity, aiming to position Spain as a more attractive business environment and ecosystem for potential high-value-added innovative and technology-based startups. By the

creation of the National Forum for Emerging Companies, the government serves that goal (Calvo Babío et al., 2024; GEM Global Report, 2024, p.183).

- Good Practice 2: Regional Entrepreneurship Strategies

Spain stands out for its decentralized model of the GEM through region-specific reports and indicators. The GEM Spain produces annual reports for regions, such as Catalonia, Madrid, Andalusia, and the Basque Country. These reports have informed the development of targeted regional strategies to support youth, female, and rural entrepreneurship. The strategy of Catalonia includes specific measures for startup mentoring and seed funding that respond to the regional findings on TEA rates and business closure motives. The government of Catalonia employs a range of the GEM's indicators to benchmark entrepreneurial activity at EU level. It also incorporates data on entrepreneur and business characteristics, underlying motivations, opportunity versus necessity orientation, and findings from multiple GEM Catalonia reports for its analyses (GEM, 2018, pp.49–50).

- Good Practice 3: Youth and Education Policy Development

The GEM's conclusions has consistently pointed to the importance of fostering the entrepreneurship from an early age. In response, Spain introduced the *Youth Entrepreneurship and Employment Strategy 2013–2016*, which used the GEM data about entrepreneurial intentions and societal attitudes to guide policy design (GEM Consortium, 2014). Educational initiatives at both the national and regional levels, such as entrepreneurship modules in vocational training and support for junior entrepreneurship programs, were initiated to help entrepreneurial mindsets, in line with GEM's National Expert Survey (NES) findings.

- Good Practice 4: Institutionalization and Stakeholder Collaboration

Spain's GEM activities are coordinated by the *Observatorio del Emprendimiento de España (OEE)*, a national network involving over 100 researchers from over 20 university authorities. This structure ensures robust academic – policy linkages and facilitates the regular use of GEM data by ministries, regional governments,

and private-sector actors (Calvo Babío et al., 2024). As a result, the GEM Spain not only produces data and analyses, but engages directly with decision-makers through policy workshops, conferences, and innovation forums.

- Good Practice 5: Monitoring and Evaluation Frameworks

The application of the GEM indicators as benchmarks for entrepreneurship policy evaluation is well established practice in Spain. For instance, changes in TEA, fear of failure rates, and innovation levels are tracked annually and used to assess the impact of national and regional policies on the entrepreneurship effectiveness. These metrics were referenced in Spain's implementation reports for the *Small Business Act* and the *Spanish Digital Agenda* (European Commission, 2020).

In conclusion, Spain exemplifies the effective use of GEM as a policy tool, with direct impacts on legislation, regional strategies, educational programming, and innovation policy. Its decentralized yet coordinated approach allows the GEM's findings to influence both national reforms and tailored regional interventions. This multi-level and sustained engagement with the GEM makes Spain one of the most advanced cases in terms of turning entrepreneurship research into actionable policy that works for economic and social values.

4.3.3. Comparison of GEM Models: Croatia vs Spain

As previously argued in this thesis, the GEM serves as a comprehensive tool for evaluating and analyzing the multifaceted nature and the complex dimensions of entrepreneurship, thus informing and guiding policymaking processes. Based on the research undertaken to address the thesis objectives, both Croatia and Spain are active participants in the GEM, however, the extent and manner in which the GEM data are utilized for policy purposes differ between the two countries.

Key Differences Summary

Category	Croatia	Spain
GEM participation	Active since early 2000s, implemented by CEPOR	Active since 2000, coordinated by OEE
National policy impact	Strategy (2013–2020) influenced by GEM	Startup Law and national strategies shaped by GEM
Regional engagement	Some regional use (e.g., Zagreb, Istria)	Extensive regional use – GEM reports and policies
Education and mindset focus	Improved via e-Schools and Junior Achievement	Integrated into youth employment and school curricula
Institutionalization	Moderate, mostly via CEPOR reports	High, with strong academic–government links
Monitoring and evaluation	Indirect, with some use in SME reporting	Direct and consistent use in policy monitoring frameworks

(Source: Self-designed)

Additionally, the thesis investigates how both GEM Croatia and GEM Spain are financed, based on publicly available information. This examination is important because, unlike many other GEM countries, where securing the funding remains a significant challenge, Croatia and Spain have been active members of the GEM global consortium for over 20 years so far. Their sustained participation suggests a stable funding model that may offer valuable insights for other national teams.

GEM Croatia is led by a research team based at the University of Osijek, Faculty of Economics and Business. The team leader is Singer, professor emeritus, head of the UNESCO Chair for Entrepreneurship at the JJ Strossmayer University in Osijek, and the team members are Šarlija, Pfeifer, Peterka, also professors at this university. The other institution involved is CEPOR and it has been conducting the GEM survey for Croatia since 2002. Its fieldwork is based on a representative APS of estimated 2000 respondents annually. The main funding comes from the government support by the Croatian Ministry of Economy, Entrepreneurship and Crafts (merged in 2016), thereby providing institutional backing for the research operations and the publication of national reports. Other funders are CEPOR and the University in Osijek. The GEM Croatia's findings are used by international entities, such as the EU, World Bank, OECD, and EBRD, although these bodies do not directly fund the research (GEM Global Report, 2025, p.115; cepor.hr). The level of operations and public presentations in Zagreb suggest moderate-scale institutional funding sufficient to sustain annual reports and stakeholder events.

In comparison, GEM Spain is led by a network of about 19 regional teams across more than 40 universities, with over 200 researchers involved. Since 1999 more than 35 000 data points have been collected annually in the APS, and more than 1000 expert interviews have been conducted. The fieldwork is coordinated by the Spanish Entrepreneurship Observatory (OEE) as the main leading institution, and GEM Spain has secured financial support from the national government through ENISA, a state-owned company under the Ministry of Industry and Tourism. It aims to facilitate access to financing for viable and innovative projects, initiated by entrepreneurs or SMEs in Spain. The public and public-agency support and collaborations are becoming even more valuable. According to the GEM Global, GEM Spain is working to establish a collaboration with ONTSI, the National Observatory of Technology and Society, which operates under the Ministry of Economic Affairs and Digital Transformation. In addition, the recent GEM Spain

reports (2023–2024) have been developed jointly with the MAPFRE Observatory of Sustainable Finance (ovtt.org). Public records in media provide evidences that the Rafael del Pino Foundation and the Foundation of the University of Cantabria for the Study and Research of the Financial Sector (UCEIF), in particular through its Santander-backed Santander International Centre for Entrepreneurship (CISE), jointly constitute as the national support team for the implementation of the GEM project in Spain. The foundations serve as the GEM Spain's host institution and remain actively engaged. The funding is supported through long-term agreements and strategic partnerships, aimed at strengthening the stability and impact of the regional GEM network (frdelpino.es). With its impressive number of respondents, multi-actor and multi-sector sponsorship, and institutional and academic backing, the GEM Spain operates at a significantly larger scale than GEM Croatia.

In terms of funding framework, the GEM Croatia is a *government-led model* and relies heavily and preliminary on public institutional support to produce national reports. This approach allows stable but modest in scale operations, with strong integration into national the SMEs policy dialogue. In contrast, the GEM Spain benefits from a *diversified funding model*, combining public support, corporate sponsorship, and a large academic backing, anchored in a well-structured regional network. The practice enables large in scale primary data collection and consistent regional and national report publication with high visibility and reach.

Overview of GEM Croatia and GEM Spain Financing Models

Country	Host & Coordination	Government / Public Support	Private / Corporate Sponsorship	Academic / Survey Support
Croatia	CEPOR, University of Osijek	Ministry of Economy, Entrepreneurship and Crafts	—	Croatian academics at Osijek and CEPOR
Spain	OEE network, UCEIF Foundation, CISE	ENISA (National Innovation Agency)	Rafael del Pino Foundation, Banco Santander, MAPFRE	~ 40 + universities, ~ 200 + researchers, coordinated by OEE & CISE

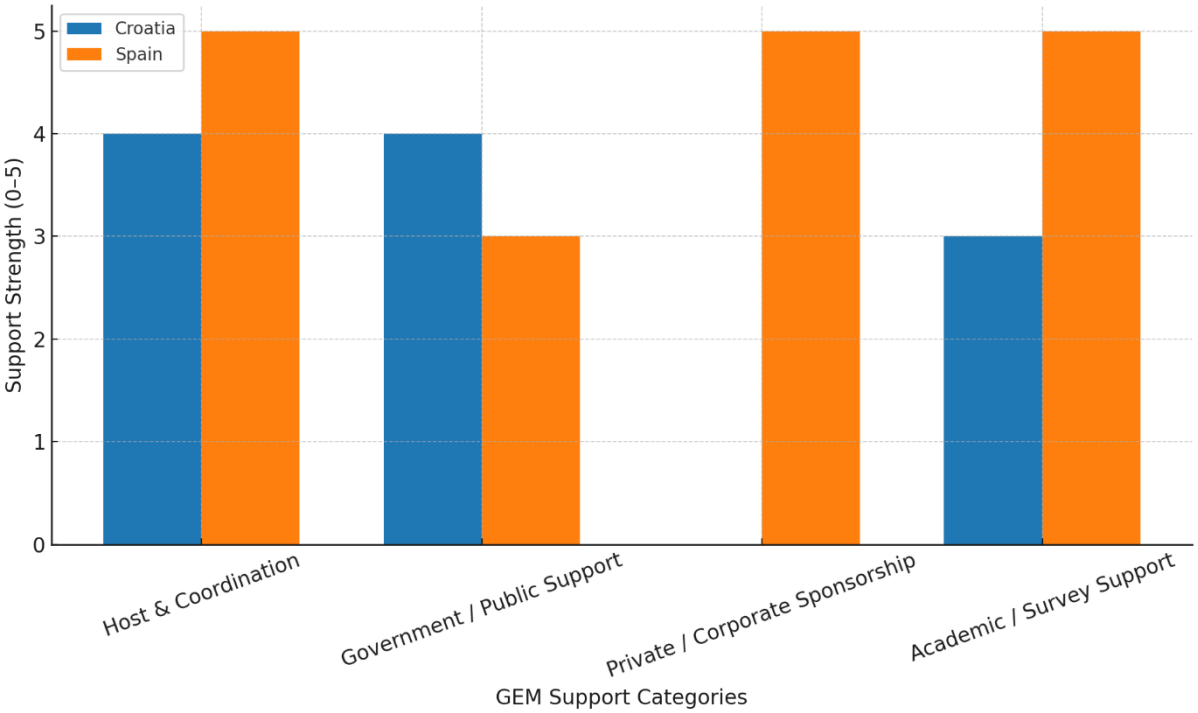
(Source: Self-designed)

To enable a visual comparison of the institutional support structures behind the GEM in Croatia and Spain, a qualitative 0 (none) to 5 (very strong) scale system is applied across four key categories:

- host and coordination;
- government/public support;
- private/corporate sponsorship;
- academic/survey support.

The following comparative chart shows the GEM support structure in Croatia and Spain within the defined four key categories and the rating criteria used.

Comparison of the GEM Support Structures: Croatia vs. Spain



(Source: Self-designed with Chat GPT)

Rating Criteria Used (0–5 Scale)

Value	Meaning
0	No support or not applicable
1	Very weak / ad hoc
2	Limited or pilot support
3	Moderate, stable support
4	Strong and structured support
5	Very strong, institutionalized, nationwide or multi-source

(Source: Self-designed)

The evaluation criteria and scoring system are formulated by the thesis author for the purpose of comparative analysis. Each score reflects the *intensity and quality* of support within one of the given categories. Consistent application of the criteria ensures comparability across cases, despite the inherent subjectivity of qualitative evaluations. The following section presents a partially subjective assessment of the GEM support structures in Croatia and Spain, and provides the rationale for each of the assigned scores, based on systematically reviewed publicly available data, documentation, and national GEM reports for the countries compared.

In attempt to evaluate the case of GEM Croatia and facilitate a more structured comparison, the justification for the scores is based on the following evidences:

- **Host and Coordination (Score: 4)**

The GEM in Croatia is hosted and coordinated by CEPOR (Policy Center for Entrepreneurship and SMEs), and in cooperation with the University of Osijek. This academic-public partnership has produced consistent national reports and survey data since 2002, reflecting a stable and structured operational framework (Singer et al., 2022; CEPOR, 2024).

- **Government / Public Support (Score: 4)**

The Croatian Ministry of Economy, Entrepreneurship and Crafts provides direct funding for GEM Croatia's activities. This reliable governmental support enables regular data collection, report publication and dissemination, although the scale remains modest compared to larger countries (CEPOR, 2024). This long-term public backing contributes to institutional stability.

- **Private / Corporate Sponsorship (Score: 0)**

No major private sponsors have been identified. GEM Croatia appears to operate entirely through public and academic funding sources and without support from other financial institutions or corporate actors (Singer et al., 2022).

- **Academic / Survey Support (Score: 3)**

The academic team, largely based at the University of Osijek, conducts regular surveys with approximately 2000 respondents annually and a small expert panel. While the effort is consistent, credible and well-documented, it does not involve a broader national academic work and lacks the scale or decentralization seen in larger GEM networks (Singer et al., 2022).

In the case of GEM Spain the scores are based on the following rationale:

- **Host and Coordination (Score: 5)**

GEM Spain benefits from a multi-actor coordination model. It is hosted jointly by the Foundation of the University of Cantabria for the Study and Research of the Financial Sector (UCEIF) and the Rafael del Pino Foundation, with operational management via Santander International Centre for Entrepreneurship (CISE). This structure ensures strong national and regional coordination, continuity and professionalized project management (frdelpino.es; Calvo Babío et al., 2024).

- **Government / Public Support (Score: 3)**

GEM Spain receives institutional backing from ENISA, the national innovation agency, a state-owned enterprise under the Ministry of Industry and Tourism[3]. While ENISA does not appear to fully fund GEM Spain, its ongoing involvement reflects steady government recognition and alignment with policy goals (Calvo Babío et al., 2024).

- **Private / Corporate Sponsorship (Score: 5)**

The project is supported by long-term strategic partners including the Rafael del Pino Foundation, Banco Santander, and MAPFRE's Observatory for Sustainable Finance. These partnerships contribute not only to funding but also visibility and

[3] The common full name in English is "Ministry of Industry, Trade and Tourism", though in Spain it is "Ministry of Industry and Tourism", which oversees industry, trade, tourism, and SMEs policy. Apart from this structure, there is "Ministry of Economy, Trade and Enterprise".

dissemination capacity. This private-sector engagement is exceptional by GEM standards (frdelpino.es; Calvo Babío et al., 2024).

- **Academic / Survey Support (Score: 5)**

GEM Spain includes a nationwide network of over 40 universities and more than 200 researchers. Its annual data collection effort exceeds 30 000 adult respondents and 1000 expert interviews, making it one of the most robust and collaborative GEM national teams globally. The networked academic structure enables detailed regional reporting and large-scale data generation (Calvo Babío et al., 2024).

In conclusion to the policy implications and the applied GEM models, Croatia has made notable progress in using GEM data to inform entrepreneurship strategies, particularly in the education and awareness-raising, but Spain represents a more mature model. While the GEM Croatia national reports are widely referenced in national SMEs reports and other publications, the institutional integration and the regional embedding of the GEM data into the formal government processes and policymaking remain relatively modest compared to the more progressive case like Spain. Its multi-level, institutionalized use of the GEM data, combined with strong academic-government interaction, results in more systematic and impactful policy interventions. It is argued that in terms of the GEM policy implications and effectiveness, Spain stands as advanced and integrated case referred to Croatia. The comparative analysis shows that GEM Spain benefits from a diversified and institutionalized support model, with stronger public-private partnerships and a broader academic network. In contrast, GEM Croatia relies on a more centralized government-dependent model, focused on stable but narrowed public-academic partnership and financial backing. As a final remark to this chapter, it is important to emphasize that a more critical analytical approach could certainly be applied to the investigation of good practices and funding models across the selected cases. However, the primary objective of this thesis is to highlight positive experiences, with the aim of offering potentially valuable insights for other GEM countries.

CHAPTER V. MEASUREMENT OF THE ENTREPRENEURIAL DYNAMICS BY NSI AND GEM BULGARIA: INTERVIEWS DATA, ANALYSIS AND DISCUSSION

This chapter investigates how the entrepreneurial activity and the entrepreneurial environment are measured in Bulgaria. Entrepreneurship is a relatively recent phenomenon in the context of the free market economy and the EU membership. Preliminary research on entrepreneurship measurement in Bulgaria revealed a deficit of valid and comparable data on entrepreneurial dynamics in the country. The chapter therefore examines approaches to data collection on entrepreneurial dynamics, as represented by the National Statistical Institute (NSI) and the Global Entrepreneurship Monitor (GEM).

Further, the attention focuses on the GEM Bulgaria as part of the GEM global consortium and network. The GEM Bulgaria was established in 2016, nearly two decades after the launch of the GEM global project, with the aim of applying the GEM model and methodology in the national context. The analysis in this study does not seek to examine the quantitative data generated through the APS survey, but rather to explore information relevant to the specific Bulgarian case study in relation to the research questions. The data considered stems from the APS and the NES, both conducted in Bulgaria for the first time in 2016, capturing insights into the entrepreneurial ecosystem for the year 2015.

Finally, the chapter presents the analysis and discussion of findings based on three interviews with key representatives of GEM Bulgaria. The objective is to provide first-hand insights into the functioning of the national entrepreneurial ecosystem and to identify the specific characteristics of the entrepreneurial environment. The analysis further seeks to highlight the role of the GEM in policy development.

The respondents are Mr. Natanail Stefanov, former Executive Director of GEM Bulgaria, and also Mrs. Mira Krusteff, an entrepreneur and co-founder of GEM Bulgaria as non-profit organization. The interviewees demonstrated openness in sharing their perspectives and contributed valuable expertise derived from their direct involvement in Bulgaria's entrepreneurial ecosystem and the GEM project.

5.1. The National Statistical Institute (NSI):
State Approach of Entrepreneurship Measurement

In this section about measurement of the entrepreneurial activity in Bulgaria the research investigates if there is an adequate national (state) approach and methods of data collection on the entrepreneurial dynamics in the country. Consequently, it focuses attention on official statistics about entrepreneurship that are provided by the National Statistical Institute (NSI) of Republic of Bulgaria. The analysis draws on secondary data published by the NSI.

The NSI is a state-funded legal entity with the status of a state agency based in Sofia. It was established in 1991 year with the adoption of the Statistics Act, which regulates the public relations related to the implementation of statistical activity by the National Statistical System (NSS). It consists of the National Statistical Institute, the Bodies of Statistics and the Bulgarian National Bank. The bodies of statistics are state bodies or their structural units, which develop, produce and disseminate statistical information under the methodological guidance of the NSI when implementing the National Statistical Program (NSP). The NSI performs statistical activity by conducting periodic and one-time statistical surveys included in the NSP. The statistical activity covers development of methodology and planning of statistical surveys, obtaining, collection, processing, storing of individual data and statistical information, analysis, provision and dissemination of statistical information. The NSI coordinates the statistical activity of Bulgaria

by cooperating with the Bodies of Statistics in the preparation of the NSP project and its implementation; provides methodological unity in research; represents the NSS in the European Statistical System (ESS) to international organizations and maintains links with the national statistical offices of other countries; ensures compliance of the methodology, content and coverage of statistical surveys with Eurostat requirements; coordinates at national level all activities related to the development, production and dissemination of national and European statistics; study and summarize the public needs of statistical information; publish statistical information (National Statistical Institute, n.d.).

The research work conducted in order to collect data included an overview of the officially published materials by NSI, as well as a conversation with Professor Svetlana Saykova, Head of the Center for Empirical Social Research, Institute for the Study of Societies and Knowledge at the Bulgarian Academy of Sciences. Our findings show that the NSI does not measure directly the entrepreneurial processes and does not maintain a comparable database for entrepreneurial dynamics in the country, and does not apply a specific methodology to collect entrepreneurial data. There are few indicators that are general by essence and to some extent might be considered as cursory pointers with regard to the entrepreneurship. The business demography data is about the life cycle of the enterprises, their birth, survival and development until death and changes in employment figures at specific moment in time. The number of the newly born enterprises in the reference year (t) is measured by:

- Active enterprises in the same year (t), which were not active in the previous year (t-1) and in the year before (t-2);
- Alternatively, the measurement method counts the enterprises that have been active in years (t-1) and (t-2), but with zero number of employees.

The NSI method excludes events such as mergers, dissolution, and separation, change of legal form or revival from the definition for newborn enterprises. The data collection method is based on administrative sources that are used to update information in the Register of Statistical Units. The data validation method, prior to submission of business demography data to Eurostat, is based on verification that is performed for all of the data series in terms of consistency of variables, completeness and confidentiality. The document on methodology is Eurostat-OECD Manual on Business Demography Statistics issued in 2007. The main users of business demography data according to NSI are Eurostat and other international organizations, public administration, research institutes, universities, economic analysts, private non-governmental organizations, agencies, associations, media, etc. The data is collected since 2004 year and no consumer satisfaction survey has been conducted on the enterprise demography so far (NSI, n.d.).

Further, data collection effort has been made by NSI toward measurement of innovation activity within enterprises. NSI informs that the statistical survey of innovation activity is held every even year since 2004, and the observed period is for 3 years. The survey aims to provide "internationally comparable information on product and process innovation, as well as on organizational and marketing innovations by enterprises in Bulgaria". The data collection method implies a thoroughly conducted survey using paper and electronic questionnaire of all enterprises acting in the financial and non-financial sector with more than 10 employees. The data validation method is implemented by arithmetic and logical control of the input data and comparison of the output data with the results of previous studies and data from administrative sources. The methodology document is the "Oslo" methodological manual (OECD and Eurostat, 2005). The main users of the data on the innovation activity of the Bulgarian enterprises are ministries, research institutions, stakeholders, as well as Eurostat and other international organizations (NSI, n.d.).

As an EU country, Bulgaria and its official statistical institution (NSI) are obliged to present current statistics for Bulgaria and its progress in implementing the national targets and the country's contribution to the achievement of the European objectives, within which is the indicator for population employment aged 20 – 64. The finding shows that there is no data on the number of citizens that are self-employed or opt to become. This might leave a confusion to users of the NSI data. As a comparison, other EU countries have conducted solid research works within this issue.

In conclusion to this section about the measurement of the entrepreneurship in Bulgaria by the legally authorized institution, especially after the country's EU accession, the findings show that the issue needs a considerable recognition. There is limited database created up to date on the entrepreneurial dynamics in the country. The collected data is related to standard business indicators on SMEs. The GEM data is more than relevant in that context.

5.2. The Introduction of the GEM Model to Bulgaria

The GEM Bulgaria introduced the consortium's methodology in the country for the first time. To ensure reliable comparisons across countries and regions, as noted earlier, GEM data are collected through a harmonized methodological approach applied consistently across all participating economies in the annual surveys. Within this global framework, the mission of GEM Bulgaria, collecting its first data for the reference 2015, is articulated in the following two statements:

"As part of a global consortium we gather annual primary data for the Bulgarian entrepreneurship ecosystem, perform benchmark analysis across countries and regions and identify factors that foster entrepreneurship. We produce and

communicate recommendations to stakeholders in order to improve the conditions for living and doing business in Bulgaria (GEM Bulgaria, 2017, p.7)."

The standardized questionnaire developed by the GEM Global Data Team is translated into the national languages of all participating countries. In Bulgaria, the data collection for the 2015 reference year was carried out by Market Test, the accredited vendor responsible for conducting the APS for the first time in the country. The survey involved 2,001 face-to-face interviews with randomly selected adults aged 18 to 64, residing in both rural and urban areas, and included representatives of all ethnic groups and both genders. In line with the harmonized methodology, the interviews were conducted in the respondents' homes, using a structured questionnaire translated into Bulgarian (GEM Bulgaria, 2016).

Further, the NES provided insights into the domestic environment, faced by entrepreneurs in Bulgaria at that time. The quality of the survey was ensured by addressing the nine EFCs (GEM Bulgaria, 2016, pp.28–29):

- Financing for entrepreneurs;
- Governmental policies;
- Governmental programs;
- Entrepreneurial education and training;
- Research and development transfer;
- Commercial and professional infrastructure;
- Openness of the internal market;
- Physical and service infrastructure;
- Social and cultural norms.

As noted above, the GEM surveys were conducted in Bulgaria for the first time in 2016, collecting primary data for the reference year 2015. Consequently, it was not possible to compare the results with accumulated data from previous national surveys. To establish a meaningful basis for comparison, GEM Bulgaria adopted a methodological approach involving benchmark countries, which were organized into three groups. These benchmark groups included the following countries:

- G1 – Romania, Greece and Turkey;
- G2 – Poland and Estonia;
- G3 – Ireland, UK, Israel and Canada.

The choice of benchmark economies had its reasoning. G1 was consisted of three neighbour to Bulgaria countries, two of which are EU member states. G2 included two EU member state countries, with the ambition to develop conditions for active entrepreneurial processes. G3 group was formed by distant to Bulgaria countries in terms of geographical location and economic profile. These groups provided meaningful benchmarks for Bulgaria, enabling comparison with neighbouring EU economies, emerging entrepreneurial systems, and advanced innovation-driven contexts. This approach, as emphasized, enhanced both the interpretability of the results and their practical relevance for decision-makers (GEM Bulgaria, 2016).

The following section presents findings from the initial GEM surveys conducted in Bulgaria, highlighting key conclusions derived from both the APS and the NES. The background of the APS for 2015/2016 year in Bulgaria included data and analysis about fields within the economic and political environment, according to which final assessments and recommendations have been executed. It also applied comparative analysis with the benchmark countries. The background areas were political and legal environment, economy, social environment and environment. A brief overview of selected findings is warranted, as they relate to policymaking issues relevant to the research question.

The GEM data research and analysis in 2016 addressed the political and legal environment in Bulgaria. Corruption and organized crime were identified as major vulnerabilities, while additional challenges were closely linked to governance deficits and the "corresponding low levels of public trust in state institutions and the political system". Only 15.2% of Bulgarian respondents reported confidence in the national government, compared to 18.8% in Greece, approximately 27% in Poland and Romania, 46.1% in Estonia, and 59.6% in Turkey (GEM Bulgaria, 2016, p. 35).

The GEM's APS data for 2015 showed that only 15.84% of the adult population in Bulgaria perceived good opportunities to start a business. This number was considerably lower than the corresponding levels in Romania and Greece (G1), and substantially below those observed in the other two benchmark groups. One possible explanation for this result lies in the pronounced tendency toward fear of failure, both at the individual level and within Bulgarian society as a whole. Conversely, the GEM survey data and analysis indicated that Bulgaria recorded one of the lowest rates of business discontinuance, at below 2%. This outcome corresponded with the country's low levels of TEA and established business ownership. The most frequently identified reasons for exiting the market and discontinuing entrepreneurial activity were insufficient profit margins and limited access to financing (GEM Bulgaria, 2016).

The National Report (2016) of GEM Bulgaria revealed that environmental factors, such as a complicated regulatory system and increased bureaucracy in the cases of starting or closing businesses, may produce barriers to entry or exit the market. This circumstance was reducing individual willingness to venture into starting an entrepreneurial activity. However, it was not entirely the case in Bulgaria. The entry costs were rather lower in the country in comparison to other EU economies,

but corruption practices and influence of external interest groups happened to be the most common milestones according to the national experts' survey, conducted by GEM in the first year of its presence.

According to NES findings Bulgaria faced a number of significant weaknesses – those with a score below 4 according to Likert scale. The most critical areas were the entrepreneurial education, especially at primary and secondary levels, and the governmental abdication of any specific support and entrepreneurship promotion initiatives. In these two categories, the answers ratings were consistently below the averages for the benchmark groups. In addition, the respondents could not identify a state body, specialized in providing support to the entrepreneurs at one place. The second main complication for the entrepreneurship development in Bulgaria was the access to financial sources according to the NES. The low levels of entrepreneurial activities were highly influenced by the inclination within the individuals to avoid taking entrepreneurial risk. The experts hold the opinion that the majority of Bulgarians were convinced that little could be achieved through personal efforts and initiatives (GEM, 2016, pp.58–67).

5.3. Understanding the Bulgarian GEM Case: An Interview-Based Analysis and Discussion

This section presents the analysis and discussion of primary data gathered through interviews with representatives of GEM Bulgaria, complemented by insights from the relevant academic literature reviewed previously. The interview method was chosen to obtain first-hand perspectives from individuals directly engaged with the GEM initiative and the wider entrepreneurial ecosystem, thereby contributing to the value of the analysis, and reflecting experiential knowledge and institutional realities. To strengthen reliability, the questions were structured in alignment with

the overall thesis research objectives and the interview data was triangulated with published reports, policy documents, and academic studies in order to provide a broader analytical context. While interviews inevitably reflect the personal views of respondents, their value lies in the ability to capture context-specific insights that are often absent from secondary data sources.

The integration of empirical evidence with scholarly perspectives allows for a more critical examination of the entrepreneurial ecosystem in Bulgaria and the role of the GEM in shaping policy and practice in national context. In this sense, the analysis addresses the central research question of the thesis: how systematic data collection and knowledge production, exemplified by the GEM model, could benefit entrepreneurship policymaking in the national context of Bulgaria. Full transcripts of the interviews are provided in Appendix 2, ensuring transparency and enabling readers to assess the evidence base of the analysis.

Mr. Natanail Stefanov acted as a host organization supervisor during an internship with GEM Bulgaria, undertaken as part of education at Aalborg University. He possesses extensive expertise and practical experience in business development, combined with first-hand observations of the national startup environment and entrepreneurial network. His professional background includes roles as Business Development Volunteer (2016) and interim Executive Director (2017–2018) at GEM Bulgaria, Vice Chairman of the Board of Directors (2017) and member of the Executive Board (2018) at Sofia Tech Park, Co-founder and Chairman of the Bulgarian Startup Association (BESCO) since 2017, and Teaching Assistant at Sofia University since 2012. The interview questions were submitted in written form via e-mail solely for the purposes of this thesis, with some topics previously discussed in person.

Furthermore, two video interviews were conducted with Mrs. Mira Krusteff, entrepreneur, co-founder and a member of the board of GEM Bulgaria. The aim of the interviews was to gather primary data for the thesis, focusing on two main areas: (1) the establishment and activities of GEM Bulgaria, and (2) public policy intended to stimulate the entrepreneurial ecosystem in Bulgaria. Permission for recording was granted, with the understanding that the material would be used exclusively for academic purposes. The discussions addressed issues such as the initial introduction of the GEM model in Bulgaria, the entrepreneurial ecosystem specifics, the involvement and the role of stakeholders, and the implications the policymaking. Particular attention was given to the challenges experienced since the foundation of the GEM Bulgaria.

The interviews, conducted in early 2022 with a combined duration of more than three hours, provide valuable primary data that has not been previously published. They capture perceptions and reflections formed at the critical moment when GEM Bulgaria discontinued its activities, offering timely insights into both the challenges faced and the broader policy context. This material also highlights lessons learned from the Bulgarian experience and indicates what could be done differently in the future, insights that may be of relevance and value not only for renewing the GEM Bulgaria but also for informing the practice of other GEM national teams.

5.3.1. Analysis and Discussion based on Interview with NS

The interview with Mr. Natanail Stefanov provides a nuanced perspective on the opportunities and challenges within the Bulgarian entrepreneurial ecosystem, as well as reflections on the role of the Global Entrepreneurship Monitor (GEM) in informing policymaking. NS emphasizes his conviction that entrepreneurship represents a sustainable pathway for societal, social and economic development,

highlighting the importance of the entrepreneurial mindset as a way of perceiving problems as opportunities. This framing resonates with the wider literature that considers entrepreneurship not only as an economic activity but also as a driver of societal transformation (Acs, Autio and Szerb, 2014).

In regard to discussing the potential of the Bulgarian entrepreneurial ecosystem, NS underlines its considerable but as yet unrealized capacity. He points to several strengths: a tightly connected and thriving entrepreneurial community, growing though still immature venture capital (VC) and private equity (PE) opportunities, and a pool of highly skilled talent, particularly in information and communication technology (ICT) sector. Bulgaria's lifestyle appeal and EU membership are also considered attractive factors for both domestic and foreign entrepreneurs. At the same time, structural barriers persist. These include a VC/PE market that is not fully developed or diversified, weaknesses in institutional programs and policy frameworks, and cultural attitudes that do not always support entrepreneurial risk-taking.

Interestingly, certain fields are marked by ambivalence: for example, Bulgaria's strong tradition in science, technology, engineering, and mathematics (STEM) contrasts with outdated and overly theoretical higher education at universities, reflecting structural issues in aligning educational outcomes with market needs. At the same time its once robust research and technology transfer institutions have lost much of their applied orientation since the transition in 1990s. These dualities reflect Bosma's (2013) observation that the entrepreneurial framework conditions (EFCs) are decisive for entrepreneurial ecosystem performance and outcomes, as even strong human capital and community strengths remain underexploited in the absence of supportive policies and institutional infrastructure.

The interview analysis also reveals ambivalent perceptions of policy actors. NS acknowledges presence of positive initiatives, such as the EU's Entrepreneurship 2020 Action Plan, and the national structures like the Operational Programme for Innovation and Competitiveness (OPIC), and the Bulgarian Small and Medium Enterprises Promotion Agency (BSMEPA). He also highlights the significance of non-governmental initiatives such as the Bulgarian Entrepreneurial Association (BESCO), which acts as a bridge between entrepreneurs, investors, policymakers. Yet, in practice, ministries, particularly the Ministry of Economy[4], are described as passive actors, with limited proactivty in terms of implementing entrepreneurial policies. This suggests a structural disconnection between policy formulation and active facilitation, where institutional presence does not necessarily translate into influential impact. The gap between policy structures and effective engagement is consistent with findings in literature that stress the importance of institutional responsiveness and alignment between policy intent and practice (Bosma and Kelley, 2019).

Another central issue raised by NS is the absence of systematic entrepreneurship measurement in Bulgaria. The National Statistical Institute (NSI) focuses on general business indicators, but entrepreneurship as a distinct phenomenon is largely unmeasured. Although the Ministry of Economy occasionally refers to GEM reports, it does not utilize GEM's detailed datasets. This reveals a *critical gap between data availability and policy uptake*, illustrating how evidence-based policymaking is hindered by institutional inertia. This is consistent with findings identified by Acs, Szerb and Autio (2012), who argue that entrepreneurship data is valuable only if integrated into evidence-based decision-making. Reynolds et al. (2005) similarly stressed that GEM was designed to fill precisely the void that conventional statistical agencies leave by overlooking entrepreneurial dynamics

[4] Ministry of Economy and Industry at present.

and to address the limitations of traditional statistical sources by capturing the trends of early-stage entrepreneurship. The Bulgarian case therefore exemplifies the challenges faced by post-transitional economies in embedding entrepreneurial measurement into policymaking processes.

NS also reflects on the operational difficulties faced by GEM Bulgaria, during his involvement as Executive Director, that further illuminate the systemic challenges of embedding entrepreneurship research in policy. Funding constraints were a key persistent barrier, as both policymakers and successful businesses showed limited willingness to finance the project. The resulting shortage of resources hampered operational capacity and the ability to sustain a permanent team. Additionally, the limited understanding of the strategic value of entrepreneurship measurement by both public authorities and private actors curtailed the sustainability of GEM Bulgaria. Moreover, local governments struggled to recognize the use of localized entrepreneurship data for fostering their ecosystems. These obstacles underscore Bosma's (2013) point that the GEM's value depends not only on methodological robustness but also on institutional commitment and stakeholder buy-in and echo broader issues of policy prioritization and awareness.

Finally, NS highlights the potential impact of systematic data collection on a wide range of stakeholders, including national and local governments and authorities, businesses, investors, international organizations, academia and NGOs. He argues that consistent measurement would allow for cross-country comparisons, policy learning, and better strategic planning, also strengthening Bulgaria's integration into European entrepreneurship policy agenda. This position aligns with the argument that robust measurement is essential for designing targeted policies and interventions, and for learning from cross-country comparisons (Acs et al., 2018). NS's reference to BESCO's 198 policy proposals, developed in consultation with entrepreneurs and informed by GEM data and analysis, illustrates how bottom-up

initiatives can complement international frameworks in fostering more effective policymaking.

Taken together, NS's perspectives reveal a Bulgarian entrepreneurial ecosystem characterized by comparatively strong individual-level capabilities but limited institutional support. The unrealized potential he describes is not due to a lack of entrepreneurial spirit or talent, but rather to insufficient integration of data, weak policy responsiveness, and underdeveloped funding mechanisms. In sum, the Bulgarian case thus highlights the broader challenge identified in GEM literature that entrepreneurship ecosystems can thrive only where policymakers recognize the value of systematic measurement and align institutional support accordingly.

5.3.2. Analysis and Discussion based on Interview with MK

The interview with MK, one of the founders of GEM Bulgaria, provides detailed insights into both the achievements and persistent challenges of the initiative, as well as broader reflections on the entrepreneurial ecosystem in the country. MK identifies institutional and financial support as the central obstacles for the GEM Bulgaria's sustainability in a long run. Unlike in many countries where ministries, development agencies, or business associations provide regular contributions to the state GEMs, Bulgaria lacked traditions of supporting independent research projects. According to MK, this absence created a paradox: while institutional engagement was necessary to make GEM relevant for policymaking, excessive reliance on state funding would undermine independence and credibility. The GEM Bulgaria thus found itself caught in a structural imbalance, unable to secure a sustainable model of shared support from both public institutions and successful actors within the entrepreneurial ecosystem. This again directly echoes Bosma's (2013) observation that GEM's viability depends on both institutional recognition and stakeholder demand for the data it generates.

MK further highlights the GEM's unique methodology: its annual individual-level data collection and value of over two decades of consistent time series make it one of the few global instruments capable of monitoring entrepreneurial activity and its enabling conditions across countries and over time. This dual emphasis on individual-level entrepreneurial attitudes, intentions and early-stage activity (APS) and on contextual Entrepreneurial Framework Conditions (NES) aligns with Bosma's account of the GEM design, which combines measures of attitudes, activity, and aspirations with assessments of national conditions. (Bosma, 2013; Bosma et al., 2013; GERA, 2013). In Bulgaria, MK stresses, this holistic approach was novel because prior to the GEM's presence, concepts such as "entrepreneurial ecosystem," "scale-up," or even "start-up" had not been part of the national policy vocabulary.

Yet, despite this conceptual and practical contribution, MK acknowledges that GEM Bulgaria did not succeed to establish partnerships with state institutions. Neither the Ministry of Economy, Sofia Municipality, nor other agencies entered into sustained agreements to apply GEM data in policymaking. Instead, inquiries for GEM Bulgaria's data came only from students, while policymakers relied on broad statistical indicators from the National Statistical Institute. This relates to the policy gap as a disconnection between entrepreneurship data and policy use that Acs, Szerb and Autio (2012) describe, in which entrepreneurship data exists but is not effectively used in the policy process. For MK, this lack of uptake reveals both a cultural and institutional shortfall: Bulgarian policymakers did not embrace a comprehensive understanding of entrepreneurship that links culture, finance, education, and innovation in an integrated system.

MK's reflections on the entrepreneurial ecosystem in Bulgaria point to a dual structure. On the one hand, she identifies a small but significant group of "high-

impact entrepreneurs", estimated at around 10 000, who are export-oriented, innovation-driven, and capable of scaling. These individuals, supported by highly skilled labour, represent Bulgaria's greatest potential. On the other hand, the wider mass of entrepreneurs remains poorly educated, inward-looking, and commercially rather than value-added oriented. This asymmetry, she argues, calls for targeted policies to replicate the models of high-impact entrepreneurs and brand Bulgaria through specialization, rather than diffuse efforts across all sectors. The emphasis mirrors Acs et al.'s (2014, pp.476–478) argument that not all entrepreneurship contributes equally to economic growth and national systems of entrepreneurship must distinguish between high-value entrepreneurial activity and marginal self-employment in order to design effective policies.

Education emerges as a critical bottleneck in MK's account. She argues that most of Bulgaria's entrepreneurial weaknesses, and the majority of possible solutions, stem from shortcomings in education and skills development. Initiatives such as *"Entrepreneurs in Class"* and *"Innovative Schools"* were designed by GEM Bulgaria to address this gap by fostering entrepreneurial mindsets early on. This focus reflects the GEM's recognition of education as one of the 13 EFC (Bosma and Kelley, 2019; GEM Global Report, 2025) and aligns with EU policy priorities for embedding entrepreneurship education across school systems.

On entrepreneurship policy, MK is critical of the lack of political will and the narrow conflation of entrepreneurship with SMEs or startups. Bulgaria, she notes, has no legal definition of a startup, and existing agencies such as BSMEPA operate with limited resources and static approaches. Unlike countries such as Ireland, where Enterprise Ireland acts as a proactive and integrated body engaging with GEM and supporting firms across the lifecycle, Bulgaria has not undertaken structural reforms to align policy with entrepreneurial potential. As MK stresses, policies often fail to prioritize high-impact sectors and instead disperse resources

without systematic monitoring or evaluation of outcomes. This critique resonates with Bosma (2013), who observed that GEM's value lies in its ability to provide internationally comparable benchmarks opportunities, enabling policymakers to identify potential blind spots and gaps in their entrepreneurial support systems.

Finally, MK underscores the importance of continuous and "fresh" data for countering populism and grounding policy in evidence. MK pointed out that during the COVID-19 crisis, government support measures were directed mainly at SMEs based on administrative criteria, such as firm size or tax indicators. In her view, this approach overlooked high-impact entrepreneurs who, with access to working capital or fast-track loans, could have taken advantage of the crisis to accelerate their scale. As a result, an important opportunity for creating additional value in the economy was missed. Without systematic measurement, policies risk misallocation and fail to exploit windows of opportunity. MK's call for annual comparative data to trace entrepreneurial dynamics reflects Acs et al.'s (2018) argument that entrepreneurship indicators must serve as tools for both diagnosis and policy design.

In summary, MK's testimony shows that GEM Bulgaria contributed valuable concepts, data, and initiatives to the national ecosystem, but its long-term impact was curtailed by weak institutional support, lack of sustained funding, and limited policy uptake. The interview highlights the paradox of the GEM Bulgaria: while GEM was capable of introducing global standards and fostering evidence-based policymaking, its independence and relevance were undermined by the absence of stakeholder engagement that the GEM's model requires. The Bulgarian case therefore illustrates the critical lesson from GEM literature: systematic measurement alone is insufficient without institutional recognition, stakeholder's interest and appreciation, and political will to translate data into policy action.

5.4. Comparative Reflections on Interviews

The interviews with NS and MK reveal both *convergences and divergences* in their assessment of the GEM Bulgaria and the national entrepreneurial ecosystem. Both emphasize the unrealized potential of entrepreneurship in Bulgaria, pointing to strong human capital and a small but vibrant community of entrepreneurs, particularly in ICT and high-impact, export-oriented ventures. Each stresses the importance of systematic data collection as a foundation for policymaking, noting that GEM offers a unique individual-level, globally comparable dataset that can capture both entrepreneurial activity and framework conditions.

At the same time, both interviewees identify a persistent policy gap: Bulgarian institutions acknowledge GEM at the level of published reports but fail to utilize its detailed data for strategy design or evaluation. NS and MK alike attribute this to limited institutional engagement, weak political will, and common conflation of entrepreneurship with SMEs in national policy. They also highlight the lack of systematic monitoring of public programs, resulting in inefficient allocation of resources.

Despite these similarities, differences emerge in their emphasis. NS presents a more *practical policy-focused critique*, underscoring the passivity of ministries, the lack of proactive measures, and the difficulties faced by the national GEM in sustaining funding and operational capacity. He frames GEM's relevance in terms of its potential utility for diverse stakeholders, including government, investors, and think tanks. GEM's founder, in contrast, places greater weight on *conceptual contributions and long-term cultural change*, stressing the GEM Bulgaria's role in introducing key terms ("ecosystem," "scale-up") into the policy vocabulary and in building awareness through education initiatives such as "Entrepreneurs in Class." She also highlights the structural asymmetry between a small group of

high-impact entrepreneurs and the broader mass of low-value activities, calling for targeted policies to replicate successful models and reforms in education as the central lever of ecosystem improvement.

In conclusion, the convergences and divergences in the accounts of NS and MK reinforce the research questions of this thesis. Both underline GEM Bulgaria's potential to inform evidence-based policymaking and intervention, yet their GEM experiences demonstrate that without institutional uptake and political will, this potential remains underutilized. While NS highlights operational and institutional barriers, and MK stresses conceptual contributions and the need for educational reform and strategic specialization, both perspectives converge on the lesson that the GEM model in Bulgaria could have substantially benefited entrepreneurship policymaking if sustained and strategically embedded.

Conclusion

This thesis set out to address the main research question of how the GEM model and its data collection could benefit entrepreneurship policymaking in the case of Bulgaria. The interview evidence and accompanying discussion suggest that the potential relevance of GEM to policymaking is widely recognised in principle, yet the actual integration of its findings into national strategies appears limited. While the methodology provides comparative, individual-level insights into both entrepreneurial activity and framework conditions, Bulgarian institutions have so far not utilized these resources in a systematic or sustained way. What emerges, is less about direct policy influence and more about untapped potential, where the availability of evidence has not been matched by consistent institutional uptake.

The thesis first sub-question concernes the way in which the general GEM model measures entrepreneurial dynamics and how this was implemented in Bulgaria. The GEM relies on two complementary instruments: the Adult Population Survey, which captures attitudes, intentions and early-stage activity at the individual level, and the National Expert Survey, which evaluates the entrepreneurial framework conditions. Globally, this dual approach has been considered unique in its ability to combine activity with context. In the Bulgarian case, however, implementation has been partial and fragmented. While the GEM Bulgaria contributed to global reports, participation was limited and data collection lacked continuity, meaning that longitudinal tracking of entrepreneurial dynamics could not be established. This discontinuity restricts the capacity of the GEM Bulgaria data to inform either academic analysis or policy design in a sustained manner.

The research second sub-question examines the main obstacles to the continued implementation of GEM in Bulgaria. The interviewees consistently emphasised the lack of secure financial and institutional support as the decisive barrier. Unlike

some other countries where ministries or development agencies act as long-term partners, Bulgaria has not managed to establish a stable funding arrangements. Concerns over independence also played a role, as reliance on single institutional sponsors was seen as potentially compromising the GEM's neutrality. Operational challenges and barriers followed from these constraints, particularly the difficulty of maintaining an active team over time and the inability to expand activities such as regional GEM surveys, dissemination campaigns or educational outreach. The limited awareness among national policymakers of GEM's added value further compounded these obstacles.

The third sub-question consideres how GEM's model and data are used in other countries as inputs to entrepreneurship policymaking. The comparative evidence from GEM in Croatia and Spain illustrates that when GEM data is systematically embedded within institutional frameworks, it can have a tangible influence on policy design and evaluation. In Croatia, GEM findings informed the National Entrepreneurship Development Strategy, contributed to educational reforms, and supported regional policy initiatives, while in Spain, GEM indicators were incorporated into major legislative reforms, regional strategies, and national youth entrepreneurship programs. Both of the cases suggest that the translation of the GEM evidence into policy depends on stable institutional partnerships, sustained funding, and active engagement between researchers, policymakers, and other stakeholders. By contrast, the Bulgarian case demonstrates that in the absence of these conditions, the potential of the GEM remains underexploited. These cross-country comparisons therefore indicate that the benefits for policymaking process are contingent not solely on the robustness of the GEM methodology but on the willingness and capacity of national systems to integrate such evidence into their governance structures.

Beyond the specific research questions, several broader considerations can be noted. The Bulgarian experience illustrates that entrepreneurship measurement initiatives require technical capabilities to apply GEM methodology and sustained stakeholder engagement in order to generate impact. The interviews indicate that the GEM Bulgaria introduced useful concepts into national discourse, such as the entrepreneurial ecosystem and the scale-up stage, yet these conceptual advances were not institutionalised through policy practice. The findings also point to the centrality of education and skills development as a main structural issue in the Bulgarian ecosystem, which extends beyond the GEM model itself but interacts closely with how entrepreneurial potential is measured and understood.

Taken together, the findings suggests that the GEM in Bulgaria has served more as a diagnostic and discursive tool than as a direct policy instrument. For future research and debate, the Bulgarian case raises questions about how international frameworks like GEM can be adapted to contexts where institutional uptake is weak, and how lessons from one country might inform the sustainability of GEM activities elsewhere. Rather than demonstrating a straightforward causal influence on policy, the evidence indicates a more complex picture: one where GEM's value lies in the possibilities it opens for evidence-based policymaking, even if those possibilities remain, for the moment, largely unrealised, especially if compared to other GEM countries.

Appendix 1

List of Definitions

Entrepreneurial Ecosystem – a set or a network of interdependent actors, institutions, and environments that collectively support the creation, growth, and sustainability of new ventures. These elements typically include cultural norms, financial resources, human capital, support services, infrastructure, leadership, and policy frameworks, working together to enable entrepreneurial activity.

Entrepreneurial Employee Activity (EEA) – percentage of adults aged 18–64 who, as employees, have been involved in entrepreneurial activities such as developing or launching new goods or services, or setting up a new business unit, a new establishment, or a subsidiary in the last three years. (GEM, 2024)

Entrepreneurial Environment – the national context in which entrepreneurship unfolds, assessed through the National Entrepreneurship Context Index (NECI). It captures a country's entrepreneurial environment via expert judgments across multiple conditions that support or hinder entrepreneurial activity – such as infrastructure, financial support, education, policy frameworks, market dynamics, and cultural norms (GEM, 2025).

Established Business Ownership (EBO) – the percentage of adults (aged 18–64) who are currently the owner-manager of an established business, i.e. owning and managing a business that has paid salaries, wages or any other payments to the owners, for more than 42 months. (GEM, 2025)

Established Business Ownership Rate (EBO) – percentage of adults aged 18–64 who are currently owner-managers of an established business, i.e. who are owning and managing a running business that has paid salaries, wages or made any other payments to the owners for over 42 months (3.5 years). (GEM, 2024)

Nascent Entrepreneurship Rate – percentage of adults aged 18–64 who are currently nascent entrepreneurs, i.e. are actively involved in setting up a business they will own or co-own; this business has not yet paid salaries, wages or made any other payments to the owners for more than three months. (GEM, 2024)

New Business Ownership Rate – percentage of adults aged 18–64 who are currently owner-managers of a new business, i.e. who own and manage a running business that has paid salaries, wages or made any other payments to the owners for more than three months, but not more than 42 months (3.5 years). (GEM, 2024)

Total early-stage Entrepreneurial Activity (TEA) – the percentage of adults aged 18–64 who are either a nascent entrepreneurs or owner-managers of a new business, i.e. the proportion of the adult population who are either starting or running a new business. (GEM, 2024)

Total early-stage Entrepreneurial Activity (TEA) – the percentage of adults (aged 18–64) who are starting or running a new business, i.e. one that has not yet paid wages or salaries for 42 months or more. (GEM, 2025)

Appendix 2

Interview Transcripts

Transcript 1

Interview with Natanail Stefanov

Mr. Natanail Stefanov was appointed as host organization supervisor during an internship experience with GEM Bulgaria. The internship was part of education at Aalborg University. Mr. Stefanov has expertise and work experience in the field of business development in Bulgaria and has direct observations of the startup environment and entrepreneurial network. The questions were asked in a written form via e-mail for the purpose of the thesis and some of the issues have been discussed previously in person.

JO: Why do you hold an interest in the entrepreneurship? What is it that makes the entrepreneurship exciting to you?

NS: Because I believe that this is a sustainable way for societal, social and economic positive development. I am fond of the entrepreneurial mindset concept and the view to look at problems as opportunities.

JO: What do you think about the potential of the Bulgarian entrepreneurial ecosystem? What are the main pros and cons of being an entrepreneur in Bulgaria currently?

NS: The potential of the Bulgarian entrepreneurial ecosystem is huge. But an unrealized potential remains nothing but an unrealized potential.

Pros:

- Thriving community. Relatively small community and most people know each other
- VC & PE opportunities. A growing number of funding opportunities
- Vigorous talent. Especially in the ICT field
- Tech knowledge
- Lifestyle. Foreigners fall in love with the life in Bulgaria – weather, food, culture
- Part of EU and proximity to major important markets

Cons:

- VC & PE market is not mature enough. Only a few of them are specialized and most of them do not provide funding in sectors that they do not understand. Therefore, there are companies in specific segments that could hardly get funding
- Policy and institutional programs
- National mindset and culture of society in general

The grey are – fields that are both positive and negative:

- Funding opportunities – see comments above
- Education – traditionally Bulgaria has strong STEM (science, technology, engineering and mathematics) and secondary education. On the other hand higher education has been accused of being too theoretical and outdated
- Research, academia and tech transfer. Likewise, during the socialist times Bulgaria has had strong research, academic and tech transfer institutions. However, since the 90s many of those linking research and industry have been destroyed. Currently institutions such as the Bulgarian Academy of Sciences and the universities execute primarily fundamental research. Still there are some good examples, e.g. the Lab at the Faculty of Chemistry of

Sofia University of prof. Nikolay Denkov, or Center for Applied Sciences & Innovation

JO: How well the Bulgarian government and the responsible bodies and institutions are doing in the process of fostering entrepreneurial activities in practice, in line with the EU policies on the entrepreneurship? Some good examples from Bulgaria in line with the EU objectives?

NS: The good examples are:

- Entrepreneurship 2020 Action Plan of the European Economic and Social Committee
- BESCO working group

The Bulgarian Startup Association for Entrepreneurs by Entrepreneurs is a non-governmental organization that acts as a bridge between startups, private and institutional investors, the government and other stakeholders in the innovation industry.

- OPIC

Operational Programme "Innovation and Competitiveness" 2014-2020 is the main program document at national level outlining the support for the Bulgarian business from the European structural and investment funds for the period 2014-2020.

- BSMEPA

The Bulgarian Small and Medium Enterprises Promotion Agency is an administrative structure with the Minister of Economy (MoE), which implements the state policy for promoting entrepreneurship, development and internationalization of SMEs.

JO: How active are the ministries and other executives allied with implementing the entrepreneurial policies, e.g. Ministry of Economy (MoE), etc.?

NS: They are not very active. The entrepreneurial policies are developed by MoE. Respectively the organizations that implement them are also part of MoE. These are the BSMEPA, Invest Bulgaria Agency, and Bulgarian Development Bank. The other relevant institution is the Fund of Funds.

JO: How is the entrepreneurship measured in Bulgaria? Do you know about any state institution, e.g. National Statistical Institute (NSI), or others that collect statistical data, thus creating comparable database?

NS: Unfortunately it is not measured consistently. The main institution that collects data for companies based in Bulgaria is the NSI. The data that is gathered is related to the general business operations of traditional companies, e.g. revenue, opex, capex, costs, etc. According to the Bulgarian legislation every company is required to provide this data annually. However, this data is too general and no special focus is put on entrepreneurship. Whenever the Ministry of Economy, which is the institution responsible for entrepreneurship policymaking, needs data it either has to buy it from NSI or from other sources. It does not collect data itself. The GEM data here is relevant, but MoE has only referred to the GEM reports, but it has never used the detailed data bases from the national research.

JO: What makes the GEM approach and methodology so unique globally, in your opinion? (Could you compare with other approaches and methods applied worldwide, e.g. GEDI, OECD?)

NS: GEM uses one of the very few methodologies, which are based on individual level, meaning its respondents are individuals talking about themselves and not about organizations.

- Comparable data. The data collected represents countries from all across the globe in various stages of development
- Individual level. GEM is one of the few methodologies that makes its research on individual level
- Annual. The GEM research is conducted each year
- Focus. GEM focuses primarily on entrepreneurship related factors

The closest similar research is Eurobarometer, but it includes only countries in Europe and is not annual.

JO: You are former Executive Director of GEM Bulgaria. What were the main obstacles/challenges for GEM and the team as long as you worked with the GEM?

NS: I would point out the following obstacles that GEM has faced:

- Funding. The organizations that are supposed to use GEM data and respectively fund it did not have the budgets (or political will) to fund it. My honest opinion is that the respective decision-makers did not realize its value. In a similar manner, very few successful businesses, the ones that should be giving back to the ecosystem, neither found sense to support it financially
- Operational capacity. Likewise, due to financial obstacles, it was difficult to maintain a team that could keep up with the operational load
- Mindset. As we tried to execute the GEM study on a local (NUTS 3) level local governments did not realize why this is important and the concept of investing in your local entrepreneurship ecosystem to attract investment and foster local entrepreneurs, and respectively reap its fruits

JO: What is the impact (the importance) of measuring the entrepreneurial activities and ecosystem in Bulgaria on (for) the policymaking process, in your opinion? Whom would that database be useful for?

NS: It would be huge. I believe that not only policymaking, but any sort of decision-making should be made on data, as long as it is available. Such sort of data, if available would be useful to the following stakeholders:

- National government – for the development of its policies and programs on a national level. Make cross-country analysis and implement good practices from other relevant countries with similar economic factors
- Local government – for the development of its policies and programs on a local level
- Businesses – to make analysis on where the economy is heading. Thus they could organize and plan their future strategies and operations better
- Investors – to have information regarding the state of economy and upcoming trends
- International organizations and the EC – to make an overview on the general developments and make comparisons between the countries. If such comparable data
- Think tanks and NGOs that could do policy recommendations

JO: If you could give any recommendation to the policy makers in Bulgaria, e.g. the national government, in order to improve its strategies that foster the entrepreneurship, what would that be? What policy adjustments are needed to make the environment and the ecosystem better?

NS: the Bulgarian Startup Association (BESCO) came up with 198 proposals for enhancing the Bulgarian economy prepared by. Each of them may be helpful. All of the proposals have been developed in direct communications and discussions with entrepreneurs from the startup community in Bulgaria. The proposals take into consideration also the GEM analysis.

Transcript 2 and 3

Interviews with Mira Krusteff

The author had the opportunity to meet previously in person Mrs. Mira Krusteff in 2017 year during the second National Conference of GEM Bulgaria that was hosted at the European Commission in Bulgaria. Mrs. Mira Krusteff is one of the founders of GEM Bulgaria together with her husband Mr. Iskren Krusteff in 2016. The questions were asked in two Zoom meeting for the purpose of this thesis.

[…introduction to the research work objectives and the purpose of the interview]

(1) Questions about GEM Bulgaria and the entrepreneurial ecosystem:

JO: You are one of the founders of GEM Bulgaria. What are the main obstacles and challenges for GEM Bulgaria and the team as long as you collect data? (GEM Bulgaria participates in the latest global reports only with NES.)

MK: Institutional and financial support. In Bulgaria there are no traditions to support research projects and especially independent projects. It is very important for us to be independent. Even if we have an institutional support, we never claim for it within 100%. It [the support] needs to be balanced so they [the institutions] to recognize themselves as stakeholders and to demand it and use it. At the same time it has to be balanced with the participation of the ecosystem and especially of the successful ones in the ecosystem. Only then it could be said that we will keep the independence and we will remain relevant as for the policy makers as for the ecosystem because we [GEM Bulgaria] do not only [collect data] for policy makers. In other words, the conclusion is that the dynamics must be known by the more serious non-public stakeholders in the ecosystem.

JO: Academia for instance. It is very useful data for the academic circles as well.

MK: Yes. I deem that when this is achieved, i.e. when there is a sustainable model, many formats can be considered. We [GEM Bulgaria] have the formats prepared, e.g. we visit the universities and collaborate with students and other elements are to educate employees. The awareness of the need for data will not happen just like that. We have to go [to the stakeholders], to demonstrate and to launch reports, if necessary to certain ministry or agency and so eventually step by step they will see more clearly and not from a distance that we can exchange experience how this usage of data is done in other countries and this culture [of using GEM's data] will rise. But as long as we [need to] fight for this funding we cannot reach this level of maturity to execute these supplementary functions. Otherwise other things that are not difficult for us are that once we have the data we do the analysis and again a matter of financial ability is that we could have one very good saturating, educational, accentuating campaign in the social media but that is also related to provision of financing.

JO: What makes the GEM approach and methodology so unique globally, in your opinion? Could you compare with other approaches and methods applied worldwide, e.g. GEDI, OECD?

MK: GEM [investigates and analyzes] is at the individual level and this is unique. We [GEM global] already have 20 years of "track record" [data collection] that allows us to compare data, both [using] benchmark and historically by the same methodology. But we also have some flexibility, e.g. we can decide in a year to add one whole module as for [the purpose of] a special report.

[…talk in brief about the choice of benchmark countries in the case of Bulgaria]

MK (continues): Now about OECD. There are collaborations with OECD. Lately I participated in one of their initiatives related to the social entrepreneurship. This [OECD's research tool] is a competition realistically because if you are invited to participate, you fill in questions but eventually the answers are accumulated and it is free. It is not a direct competition with GEM but there is a need of additional instruments and we have been thinking about changing the GEM model so it could be more affordable and not once in a year but more often. But this is a very long process and GEM is not mature enough yet for it.

JO: Could you mention any state institution that acquires data by GEM Bulgaria for the purpose of policymaking in order to stimulate the entrepreneurship (e.g. the Ministry of Economy which is the main institution responsible for the entrepreneurship policymaking)?

MK: No. We do not have at the moment. We would have but it did not work out. We had [GEM Bulgaria] negotiations with Sofia Municipality, we had with one agency. Simply so far it has not resulted in a formal partnership. I think there will be this year [2022].

JO: Have you had any official inquiries from stakeholders [for data or analysis] directly to GEM Bulgaria?

MK: No. We do not have inquiries for data. The data from the global reports is an open source. No need to buy data, you simply take the report. We [GEM Bulgaria] have had inquiries from students but not from institutions.

JO: How is the entrepreneurship measured in Bulgaria? Do you know about any state agency and other bodies, e.g. National Statistical Institute, that collect statistical data, produce and disseminate statistical information on the

entrepreneurial dynamics in Bulgaria, thus creating comparable database for the consumers of such information?

MK: It might be a good idea to have a look at some regional researches by the Institute for Market Economics in Bulgaria, they use the national statistics and as far as I remember they make some researches and add something [analysis].

JO: I have contacted a professor from the Bulgarian Academy of Science and I know that these studies are more often sporadic rather than systematic over time.

JO: You have a very huge network as an entrepreneur also you collaborate with many professionals and experts in the field of the entrepreneurship. What are your personal observations in regard to the entrepreneurial ecosystem in Bulgaria? How would you assess the individual self-perception and attitude of the Bulgarian citizen about entrepreneurship?

MK: […] I am convinced that in Bulgaria we have world level entrepreneurs who are high impact entrepreneurs, i.e. export orientated and applying innovations with predictable rise in scale mainly in knowledge economy. I have made my own rough calculation that these are around 10 000 entrepreneurs in the beginning [of GEM Bulgaria].

[…explaining the calculation]

MK (continues): But if we accept that we talk about 10 000 entrepreneurs they must estimate 50 000 or 100 000, so we can argue that there are constant positive trends in the [Bulgaria] ecosystem. My concern is that my observation is the entrepreneurs think that there are many like them. They do not know how few are like them. This is why we continue to do what we do because […] otherwise there

will be no change [in the ecosystem]. The problem is with the "entrepreneurial intensions" indicator that is lower that TEA. We are not bad with the startups and scale-ups, but we are bad with the ones that come after them as an attitude. They do not consider starting a business. It is like we do not have the seeds that will germinate. And this is why I do not think the work is done and it is a matter of one or two years talking. It is necessary to conduct a very serious reform in the education. Because almost 2/3 of the deficits and 90% of the solutions to the problems [within the entrepreneurial ecosystem in Bulgaria] are related to education, skills and knowledge that takes many years to change if at all considered as a priority.

[…gives an example with Telerik Academy[5] and the outcomes]

MK (continues): This is one of the reasons that we [GEM Bulgaria] conduct "Entrepreneurs in Class"[6]. It makes the students to start thinking earlier what is it like to see opportunities and it will take years so this is why we want to follow it. We participated very actively and I would say even aggressively in this initiative to happen and we also added the format "Innovative Schools" as a way to achieve more flexibility. The subject "Entrepreneurship" in the moment is not… it could be better [developed]. There is a lot of work also there.

JO: What do you think about the potential of the Bulgarian entrepreneurial ecosystem? What are the main pros and cons of being an entrepreneur in Bulgaria currently?

[5] Telerik Academy is specialized in training kids, school student and young professionals in Bulgaria to develop their IT skills for more than 10 years (https://www.telerikacademy.com).

[6] National platform, allowing teachers in Bulgaria to connect to successful entrepreneurs in their region and invite them to class to inspire entrepreneurial mindset. Mrs. Mira Krusteff is the executive director (http://predpriemachi.bg).

MK: Okay. Cons is this mass of poorly educated, poorly prepared, non-export oriented but commercially oriented entrepreneur in terms of value added. Pros is that core of high-impact entrepreneurs that needs to be supported and there must be measures [actions] to multiply this model [by the governments]. I believe that there are tools in the public state policies that they [high-impact entrepreneurs] could be replicated and used in conjunction with them, i.e. they could participate and contribute to that. And [pros] is that around these high-impact entrepreneurs there is high-skilled labor. In terms of that, Bulgaria should identify itself and should brand in something, i.e. we should not try to be everything but to achieve real specialization. I see the potential in this [these goals]. [And this is why] in my opinion it is very important to have that independent assessment of factors. Because, for example, before we started [GEM Bulgaria], we though that the Bulgarians are afraid [to start a business]. They are not afraid at all. They do not know how. The perceived capability is low and those who endeavor with entrepreneurship do not think how to grow and how to become more successful. Our mission is more people to understand it even if only in some aspects. And to see [and understand] these relationships.

[…gives an example with a governmental project with a budget of 100 million for startup companies of women under the age of 30 years, thus aiming to foster the Northwest Region of Bulgaria which is well known as the poorest region in the country and has the lowest-ranked economy in Bulgaria and the European Union]

MK (continues): I will request access to public information to see what the result is and how successful this program is. Because this is really about to start making evidence-based decisions! Let the evidences be more than just by GEM, but GEM can really trace. As long as we [GEM Bulgaria] collected data, it did not get any worse, but it did not get any better in terms of a lot of [public] spending. Now it

is important to measure what is at the moment [the ecosystem] and to see what these [new] government and parliament will be able to achieve in the next 3–5 years and whether these [policies] work for us [the Bulgarian entrepreneurs]. Will we be able to attract more Bulgarians? Probably we can. This is one of the directions to develop.

(2) Questions about entrepreneurship policymaking:

JO: How well the Bulgarian governments so far and the responsible bodies and institutions are doing in the process of fostering entrepreneurial activities in line with the EU policies on the entrepreneurship? Some good examples from Bulgaria in line with the EU objectives?

MK: I do not think that there is a comprehensive and overall view, i.e. what we [GEM Bulgaria] do… I do not think that anyone uses it as intended to be. In other words, it is not viewed holistically that the entrepreneurship is [a set of] cultural attitudes [mindset], financial instruments, education, personal examples, practice [expertise], and that we [Bulgaria] are part of a regional ecosystem. I do not think that anyone sees [considers] these things [factors] and uses them right now. Maybe we [GEM Bulgaria] see them [take into account the factors], some other non-governmental organizations see them, maybe some researchers see them, but where policies are made I do not think that someone makes a comprehensive review and monitors and alerts if something does not work somewhere and connects what will be done. In other words, we continue to have a lot of work as an association to make this audible and to make full use of this data and analysis. Hence, there is no talk of cooperation at European level. There are some trans-European projects which will eventually happen. But maybe if something happens as a more focused effort, is perhaps through the operational programs. There are funds directed to SMEs, innovative enterprises. But I know that at European level

the interest of the Bulgarian companies [to act at European level] is much lower compared to other countries and no one is working to make the interest higher, not simply because there are no companies, in the sense that this is not the answer. The answer is that they do not participate. Concerning the operational programs, yes, there are funds that companies apply for. But again not always and I do not know to what extent the monitoring and the impact assessment are fully used. […] It must have been laid down how the efficiency of the grant instruments is measured and have they actually led to an increase in the employment levels, to the entry of foreign markets, to an increase in the innovation capacity. These are very valuable indicators which I do not know if anyone makes the effort [to use] for so many millions spent and to estimate if there is an improvement is some region or an age group, i.e. what has been achieved apart from the fact that funds have been received and spent. In my understanding this complex assessment [of the efficiency] is not yet happening.

JO: How active are the ministries and other executives allied with implementing the entrepreneurial policies, e.g. Ministry of Economy (MoE), Bulgarian Small and Medium Enterprises Promotion Agency (BSMEPA), etc.?

MK: There was no will at the political level to set good policies related to the entrepreneurship and to monitor the implementation. Even the entrepreneurship is not something separate. It is equated with SMEs and with startups. There is no legal definition of a startup. What is a startup? There is no such a definition in [the laws of] Bulgaria. Accordingly, there is no policy to cover all the [legal forms of] entrepreneurship. We have a problem here yet in its infancy [since the beginning]. Even in the new coalition agreement of the four parties, the word entrepreneurship is present once or twice, if I am not wrong. The word SMEs is present a lot. In my opinion, this is not addressed at all. This is a phenomenon that you have to look at from all sides to ty to influence it, to know what [factors] can affect it. If SMEs

are not a potential, they should not be given "big" policies. The entrepreneurship should be considered as where it has potential and it is possible to achieve greater impact, higher added value faster with greater rebound in more markets. This is the "policymaking" in my opinion and not just to maintain SMEs. Opportunities for growth must be sought, otherwise it remains more mediocre and I do not think they need any special policies. Policies are needed where it can be accelerated, multiplied, expanded, upgraded. The value added [in that sense] is higher. As far as I know BSMEPA has very limited resource, e.g. they cannot support GEM Bulgaria in any way, even if they want to… […]. They have not developed some national net. It is related to legislative initiative. These agencies [for SMEs] are merged with the investment agencies in some countries and they are not only for SMEs but for enterprises. It is like that in Ireland[7]. Enterprise Ireland deals with everything and they are present everywhere and are very proactive. They also participate in GEM [Ireland]. They are one good example. In other words, there is no reform of what does not work in our country and in my opinion the situation with the Ministry of Economy and BSMEPA is static until now. The monitoring carried out at European level shows that things have not changed much. Partly only. The proof is in our data. Something to happen it must be done differently.

[… Comments follow about the structural changes that were undertaken after new government, known as the Four-party coalition cabinet, was elected and approved by the National Assembly in December 2021 year. The Ministry of Economy continues to function as Ministry of Economy and Industry and the new state institution Ministry of Innovation and Growth was established. The question of the principle of separation of the two structures and how possible functional overlaps and frictions will be avoided, and who will be responsible of initiation and implementation of entrepreneurial policies, arises.]

[7] https://www.enterprise-ireland.com/en.

JO: How would you comment the national policies on entrepreneurship of Bulgaria, in terms of governmental support and relevance, taxes and bureaucracy, governmental entrepreneurship programs? Please, comment since these criteria are in GEM's conceptual framework.

MK: In regards to the bureaucracy we now have unique chance with the creation of the new Ministry of Digitalization mainly with its capacity to simplify the bureaucracy and to optimize the processes for the business through reduction of the bureaucratic burdens. It will be very important. In terms of the taxation, the direct taxes are not a problem, even they are a positive. The insurance/social security burden is a serious problem. Bulgaria is attractive with these taxes at the moment and this must be used in a better way. Concerning the government support, I always think of that term in two directions. It could mean what the state is doing [to support], but it could also mean what the state is not doing. Not doing something can also be supportive. It is very important not to interfere with areas that work [accordingly] and where the state can harm. It could mean simplification of a procedure. About the governmental entrepreneurship programs… simply there is no such thing named that way. […] I do not know for accelerator programs developed by the state. Maybe within the competitiveness [policies] there are such programs, but still the term entrepreneurship is not equal to the competitiveness. One recommendation could be to strengthen the interaction between the existing good practices of accelerator programs and to replicate them in smaller settlements. The state should collaborate with the good practitioners more actively or to outsource and not to try to implement it by itself. […] For example, if the state creates some regional centers to support companies, the staff should not be coming from the existing state structures because they have certain mindset. But to recruit people from the business or people educated abroad coming back to the

country. In every way to attract more diverse staff with affinity to entrepreneurship in order to estimate correctly and provide relevant support.

JO: What is the impact (importance) of measuring the entrepreneurial activities and ecosystem in Bulgaria on the policymaking process, in your opinion? What would that database be useful for and whom?

MK: Our data gives the argumentation that the levels are low and there is what to be done. So we give the evidences where the deficits are. I do not think that before we [GEM Bulgaria] came up with official data someone knew that we are at these levels, and where are we compared to other countries, and if there is any dynamics. We know now what the problems are. […] The other thing is related to the [entrepreneurship] vocabulary used. I dare to say that we introduced the term of entrepreneurial ecosystem. Scale up – there was no such word. There was no talk of a startup. The value of the GEM methodology is that once it explores the activity, i.e. what people do, and separately [secondly], it explores in what environment, i.e. what is the environment. And for the first time this assembly happened, i.e. to take into account the fact that one has an impact on the other in its own way. […] You cannot count on the fact that if the environment is perfect, this will lead to growing entrepreneurial activity. The interrelationships must be sought [and explored]. The value is that you need to look at different elements. […] The application of different indicators is extremely important in my opinion. This is the essence. […] The overview at ecosystem level is the biggest impact for me. It could be done even at higher level [applied even in a better way], e.g. regional level or city level. […]

JO: If you could give any recommendation to the policy makers in Bulgaria in order to improve strategies that foster the entrepreneurship and innovation, what

would that be? What policy adjustments are needed to make the environment and the ecosystem better?

MK: We need to have "fresh" data to follow the dynamics. To have continuous data and comparative analyses on annual bases which are used. This is my recommendation. [The rest is talks and populism.] The populism could be also addressed because, for example, during the COVID crisis, although we do not have data, unfortunately, about how COVID affected the entrepreneurial activity, we know that substantial part of the measures [and financial support] were rather directed at SMEs. The criteria were purely administrative whether you belong in certain category and what percent of the last year's tax indicator to be covered. And that has its function. But I am personally aware of high-impact entrepreneurs' attempt to give recommendation to the cabinet then [ex] to think about instrument that aim to help companies, which are not lagging behind and not losing [profits]. But due to COVID, and to some extent due to the indirect impact of COVID on them and their partners, they lacked enough working capital to grow faster. If they have had working capital or some support, or quick loans, they would have been able to achieve faster growth than that. In other words, the opportunity that COVID crisis provided – not to lose but to make a profit – for companies to grow faster has been missed. […] These companies would have generated value added for the economy in such a difficult moment and this has been "overslept". So, in the context of COVID, we need to consider not only the crisis but also the opportunity. Every crisis provides an opportunity and it must be exploited.

[…argumentation with personal experience from meeting with entrepreneurs]

The efforts must be directed at the most promising and high-impact sectors and businesses and [policies] to be guided by them. In other words, the policies should fit to these successful models and to be prioritized. We should seek and implement

the model of the successful ones. Because at the moment, in my opinion no special attention and priority is given to working and successful endeavours.

JO: What are the reasons for that?

MK: Lack of political will [ability to understand, skills, human capital].

JO: What did I not ask and you think it is worth knowing and discussing? [Skipped]

MK: The innovation is a huge topic and I do not know how much you would like to concern that. The innovation is highly dependent on entrepreneurship. There are very few things that are innovative and not connected to the business. And the business dynamics, in fact the entrepreneurial element, is what brings the value added, and in general whether an innovation will happen. […] The problems here are related to the very low culture of intellectual property, the extremely poor knowledge of commercialization by scientists and researchers, the very low levels of research and development expenditures in Bulgaria, the institutions are cumbersome and unreformed and the methods of financing likewise, very unattractive salaries for the young educated abroad. There must be a much stronger channel for attracting scientists [and human capital] from abroad who work in innovations.

JO: Can I come back to you with following-up questions?

MK: Yes, of course.

Reference List

Acs, Z.J. and Szerb, L., 2007. 'Entrepreneurship, economic growth and public policy', *Small Business Economics, 28*(2–3), pp. 109–122. doi:10.1007/s11187-006-9012-3

Acs, Z.J. and Szerb, L., 2009. *The global entrepreneurship index (GEINDEX)*. Jena Economic Research Papers No. 2009-028. Jena: Friedrich Schiller University and Max Planck Institute of Economics. Available at: https://www.econstor.eu/handle/10419/31733 [Accessed 20 August 2025].

Acs, Z.J. and Szerb, L., 2010. 'The global entrepreneurship and development index', *Foundations and Trends in Entrepreneurship, 5*(5), pp. 341–435.

Acs, Z.J. and Szerb, L., 2010. 'The global entrepreneurship index (GEI)', *Foundations and Trends in Entrepreneurship, 6*(5), pp. 335–460.

Acs, Z.J., Autio, E. and Szerb, L., 2014. 'National systems of entrepreneurship: Measurement issues and policy implications', *Research Policy, 43*(3), pp. 476–494. doi:10.1016/j.respol.2013.08.016

Acs, Z.J., Desai, S. and Klapper, L.F., 2008. 'What does entrepreneurship data really show?', *Small Business Economics, 31*(3), pp. 265–281.

Acs, Z.J., Szerb, L. and Autio, E., 2012. *Global entrepreneurship and development index 2012*. Cheltenham: Edward Elgar.

Acs, Z.J., Szerb, L. and Autio, E., 2014. *The global entrepreneurship and development index*. Cheltenham: Edward Elgar Publishing.

Acs, Z.J., Szerb, L., Komlósi, É. and Ortega-Argilés, R., 2019. *Global entrepreneurship index 2019*. Washington, DC: Global Entrepreneurship and Development Institute. doi:10.13140/RG.2.2.17692.64641

Acs, Z.J., Szerb, L., Lafuente, E. and Lloyd, A., 2018. *Global entrepreneurship index 2018*. Washington, DC: Global Entrepreneurship and Development Institute (GEDI).

Acs, Z.J., Szerb, L., Lafuente, E. and Lloyd, A., 2018. *Global entrepreneurship and development index 2018*. SpringerBriefs in Economics. Cham: Springer. doi:10.1007/978-3-030-03279-1

Ahmad, N. and Hoffman, A., 2008. *A framework for addressing and measuring entrepreneurship*. OECD Statistics Working Paper No. 2008/02. Paris: OECD Publishing.

Audretsch, D.B., Keilbach, M. and Lehmann, E.E., 2006. *Entrepreneurship and economic growth*. Oxford: Oxford University Press.

Audretsch, D.B. and Link, A.N., 2012. *Entrepreneurship and innovation: Public policy frameworks*. Cheltenham: Edward Elgar Publishing.

Audretsch, D.B., Lehmann, E.E. and Wright, M., 2015. 'The knowledge spillover theory of entrepreneurship and its links to regional development', in D.B. Audretsch, A.N. Link and M.L. Walshok (eds.) *The Oxford handbook of local competitiveness*. Oxford: Oxford University Press, pp. 313–331. doi:10.1093/oxfordhb/9780199993307.013.18

Autio, E., Pathak, S. and Wennberg, K., 2014. 'Contextualizing entrepreneurial intentions: A multilevel analysis of emerging economy and developed economy nascent entrepreneurs', *Entrepreneurship Theory and Practice*, *37*(3), pp. 479–504.

Boone, H.N. and Boone, D.A., 2012. 'Analyzing Likert data', *Journal of Extension*, *50*(2), pp. 1–5.

Bosma, N., 2013. 'The Global Entrepreneurship Monitor (GEM) and its impact on entrepreneurship research', *Foundations and Trends in Entrepreneurship*, *9*(2), pp. 143–248. doi:10.1561/0300000039

Bosma, N., 2013. 'The Global Entrepreneurship Monitor: 15 years of global entrepreneurship research', *International Journal of Entrepreneurial Venturing*, *5*(2), pp. 120–152. doi:10.1504/IJEV.2013.053591

Bosma, N. and Kelley, D., 2019. *Global Entrepreneurship Monitor 2018/2019 global report*. London: Global Entrepreneurship Research Association (GERA).

Bosma, N., Hill, S., Ionescu-Somers, A., Kelley, D., Levie, J. and Tarnawa, A., 2020. *Global Entrepreneurship Monitor 2019/2020 global report*. London: Global Entrepreneurship Research Association (GERA).

Bosma, N., Hill, S., Ionescu-Somers, A., Kelley, D., Levie, J. and Tarnawa, A., 2021. *Global Entrepreneurship Monitor 2020/2021 global report*. London: Global Entrepreneurship Research Association (GERA).

Bosma, N. and Sternberg, R., 2014. *Entrepreneurial intentions and their link to entrepreneurial activity: The GEM perspective*. Global Entrepreneurship Monitor Special Report.

Bosma, N., Wennekers, S., Guerrero, M., Amorós, J.E., Martiarena, A., Singer, S. and Global Entrepreneurship Research Association (GERA), 2013. *Global Entrepreneurship Monitor: Special report on entrepreneurial employee activity 2011/2012*. London: Global Entrepreneurship Research Association. ISBN 978-1-939242-02-0.

Braun, V. and Clarke, V., 2006. 'Using thematic analysis in psychology', *Qualitative Research in Psychology*, *3*(2), pp. 77–101. doi:10.1191/1478088706qp063oa

Bryman, A., 2016. *Social research methods*. 5th ed. Oxford: Oxford University Press.

CEPOR, 2024. *Global Entrepreneurship Monitor: National report for Croatia 2023/2024*. Zagreb: CEPOR. Available at: https://www.cepor.hr

Creswell, J.W., 2014. *Research design: Qualitative, quantitative, and mixed methods approaches*. 4th ed. Thousand Oaks, CA: Sage Publications.

Crotti, R., Potter, J., Shah, P., Stam, E. and Kamal-Chaoui, L., 2025. *Data and methods for entrepreneurial ecosystem diagnostics*. OECD SME and Entrepreneurship Papers, No. 69. Paris: OECD Publishing. doi:10.1787/5173f4a2-en

Enterprise Ireland, 2025. *Enterprise Ireland* [online]. Available at: https://www.enterprise-ireland.com/en/ [Accessed 3 September 2025].

European Commission, 2018. *Entrepreneurship education at school in Europe: Eurydice report*. Luxembourg: Publications Office of the European Union.

European Commission, 2020. *Small Business Act fact sheet – Spain*. Brussels: European Commission.

European Commission, 2020. *SME policy in Bulgaria: Country fact sheet*. Brussels: European Commission.

European Commission, 2020. *European Semester: Country report Bulgaria 2020*. Brussels: European Commission. Available at: https://commission.europa.eu/publications/2020-european-semester-country-reports_en [Accessed 21 August 2025].

European Council on Foreign Relations (ECFR), 2024. *Fool me thrice: The pattern of political instability in Bulgaria, Georgia and Moldova* [online]. European Council on Foreign Relations. Available at: https://ecfr.eu/article/fool-me-thrice-the-pattern-of-political-instability-in-bulgaria-georgia-and-moldova/ [Accessed 30 August 2025].

Eurostat, 2024. *Business demography statistics*. Luxembourg: Eurostat. Available at: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Business_demography_statistics [Accessed 18 August 2025].

Eurostat and OECD, 2007. *Eurostat-OECD manual on business demography statistics*. Luxembourg: Office for Official Publications of the European Communities; Paris: OECD Publishing.

Eurostat and OECD, 2008. *Eurostat-OECD manual on business demography statistics*. Paris: OECD Publishing.

Global Entrepreneurship Monitor (GEM), 2018. *The influence of GEM on policy 2017/2018 special report*.

Global Entrepreneurship Monitor (GEM), 2024. *Global Entrepreneurship Monitor 2023/2024 global report: 25 years and growing*. London: GEM.

Global Entrepreneurship Monitor (GEM), 2025. *Global Entrepreneurship Monitor 2024/2025 global report: Entrepreneurship reality check*. London: GEM.

GEM Bulgaria, 2016. *GEM Bulgaria 2015/16 annual report*. Sofia: GEM Bulgaria. Available at: https://gemconsortium.org/report/49748 [Accessed 28 August 2025].

GEM Bulgaria, 2017. *GEM Bulgaria annual report 2016/17*. Sofia: GEM Bulgaria. Available at: https://www.gemconsortium.org/report/49920 [Accessed 28 August 2025].

GEM Bulgaria, 2019. *GEM Bulgaria national report 2017/18 & 2018/19*. Sofia: GEM Bulgaria. Available at: https://gemorg.bg/wp-content/uploads/2021/06/GEM-Bulgaria-report-2017-19-EN-Final-web.pdf [Accessed 28 August 2025].

GEM Consortium, 2014. *Global Entrepreneurship Monitor Spain 2014 report*. GEM Consortium.

GEM Consortium, 2023. *Spain: Economy profile and policy framework conditions*. Available at: https://www.gemconsortium.org [Accessed 23 July 2025].

GEM Croatia, 2021. *GEM Croatia 2020/2021 report*. Zagreb: CEPOR. Available at: https://www.cepor.hr [Accessed 20 July 2025].

GEM Spain, 2024. *Informe GEM España 2023/2024*. Madrid: Observatorio del Emprendimiento de España (OEE).

Hameed, I., Khan, S.Z., Shazad, F. and Zaheer, R., 2023. 'Measuring inclusive entrepreneurial ecosystems: Index construction and global evidence', *Journal of the Knowledge Economy* [online]. Available at: https://link.springer.com/article/10.1007/s13132-023-01427-1 [Accessed 18 August 2025].

Hess, S., Wahl, A. and Johnson, A.R., 2025. 'Measuring entrepreneurial ecosystems across levels: a district approach', *Small Business Economics*. doi:10.1007/s11187-025-01041-2

Jamieson, S., 2004. 'Likert scales: how to (ab)use them', *Medical Education*, *38*(12), pp. 1217–1218.

Kauffman Foundation, 2019. *Kauffman indicators of entrepreneurship*. Kansas City: Ewing Marion Kauffman Foundation. Available at: https://indicators.kauffman.org [Accessed 18 August 2025].

Kelley, D., Singer, S. and Herrington, M., 2017. *GEM global report 2016/2017*. London: Global Entrepreneurship Monitor.

Koo, T.K., 2025. 'Psychological distance between categories in the Likert scale: Comparing different numbers of options', *Behavioral Sciences*, *5*(1), p. 18. Available at: https://www.mdpi.com/2673-8392/5/1/18 [Accessed 19 July 2025].

Kvale, S. and Brinkmann, S., 2009. *InterViews: Learning the craft of qualitative research interviewing*. 2nd ed. Thousand Oaks, CA: Sage Publications.

Levie, J. and Autio, E., 2008. 'A theoretical grounding and test of the GEM model', *Small Business Economics*, *31*(3), pp. 235–263. doi:10.1007/s11187-008-9136-8

Likert, R., 1932. 'A technique for the measurement of attitudes', *Archives of Psychology*, *22*(140), pp. 1–55.

Martin, B.C., McNally, J.J. and Kay, M.J., 2013. 'Examining the formation of human capital in entrepreneurship: A meta-analysis of entrepreneurship education outcomes', *Journal of Business Venturing*, *28*(2), pp. 211–224. doi:10.1016/j.jbusvent.2012.03.002

Maxwell, J.A., 2013. *Qualitative research design: An interactive approach*. 3rd ed. Thousand Oaks, CA: Sage Publications.

Ministry of Entrepreneurship and Crafts, 2013. *Entrepreneurial development strategy of the Republic of Croatia 2013–2020*. Zagreb: Government of Croatia.

Minniti, M., 2008. 'The role of government policy on entrepreneurial activity: productive, unproductive, or destructive?', *Entrepreneurship Theory and Practice*, *32*(5), pp. 779–790. doi:10.1111/j.1540-6520.2008.00255.x

Minniti, M., 2010. 'The dynamics of entrepreneurship: Evidence from GEM data', *Small Business Economics*, *24*(3), pp. 205–218.

Nabi, G., Liñán, F., Fayolle, A., Krueger, N. and Walmsley, A., 2017. 'The impact of entrepreneurship education in higher education: A systematic review and research agenda', *Academy of Management Learning & Education*, *16*(2), pp. 277–299. doi:10.5465/amle.2015.0026

National Statistical Institute (NSI), n.d. *Entrepreneurship and business demography data*. Sofia: NSI. Available at: https://www.nsi.bg/ [Accessed 30 August 2025].

Nicolaou, N., Shane, S., Cherkas, L., Hunkin, J. and Spector, T.D., 2008. 'Is the tendency to engage in entrepreneurship genetic?', *Management Science*, *54*(1), pp. 167–179. doi:10.1287/mnsc.1070.0761

Nicolaou, N. and Shane, S., 2010. 'Entrepreneurship and occupational choice: Genetic and environmental influences', *Journal of Economic Behavior & Organization*, *76*(1), pp. 3–14. doi:10.1016/j.jebo.2010.02.009

OECD and Eurostat, 2005. *Oslo manual: Guidelines for collecting and interpreting innovation data*. 3rd ed. Paris: OECD Publishing.

OECD and Eurostat, 2009. *Measuring entrepreneurship: A collection of indicators*. Paris: OECD Publishing.

OECD, 2011. *Entrepreneurship at a glance 2011*. Paris: OECD Publishing. doi:10.1787/9789264097711-en

OECD, 2017. *Entrepreneurship at a glance 2017*. Paris: OECD Publishing. doi:10.1787/entrepreneur_aag-2017-en

OECD, 2020. *OECD SME and entrepreneurship outlook 2020*. Paris: OECD Publishing.

OECD, 2023. *Entrepreneurial ecosystems benchmarking expert workshop: Summary note*. Paris: OECD. Available at: https://www.oecd.org/content/dam/oecd/en/events/2023/12/benchmarking-event/Summary-note-Entrepreneurial-Ecosystems-Benchmarking-Expert-Workshop.pdf [Accessed 18 August 2025].

OECD, 2025. *Entrepreneurial ecosystem diagnostics*. OECD Studies on SMEs and Entrepreneurship. Paris: OECD Publishing. doi:10.1787/7096961f-en

Oreshkova, J., 2017. *Challenges to the process of building the entrepreneurial culture in Bulgaria after the 1990s*. AAU Semester Project.

Oreshkova, J., 2017. *Measurement of entrepreneurial ecosystem – The application of the National Expert Survey (NES) in the Global Entrepreneurship Monitor's methodology*. AAU Semester Project.

Ortega-Argilés, R., Acs, Z.J., Szerb, L., Autio, E. and Komlósi, É., 2014. *REDI: The Regional Entrepreneurship and Development Index – Measuring regional entrepreneurship. Final report*. Luxembourg: Publications Office of the European Union. doi:10.2776/79241

Reynolds, P.D., Bosma, N., Autio, E., Hunt, S., De Bono, N., Servais, I., Lopez-Garcia, P. and Chin, N., 2005. Global Entrepreneurship Monitor: Data collection design and implementation 1998–2003. *Small Business Economics*, 24(3), pp.205–231. https://doi.org/10.1007/s11187-005-1980-1

Reynolds, P., Bygrave, W., Autio, E., Cox, L. and Hay, M., 2002. *Global Entrepreneurship Monitor: 2002 Executive Report*. Babson College, London Business School and Kauffman Foundation.

Reynolds, P.D., 2005. Understanding Business Creation: Serendipity and Scope in Two Decades of Business Creation Studies. *Small Business Economics*, 24(4), pp.359–364. doi:10.1007/s11187-005-0692-x – if I use it

Reynolds, P.D., Bygrave, W.D., Autio, E., Cox, L.W. and Hay, M., 2005. *Global Entrepreneurship Monitor 2004 Executive Report*. Babson Park, MA: Babson College and London Business School. Available at: https://www.gemconsortium.org [Accessed 15 Jul. 2025].

Rusu, V.D., 2016. Characteristics of the entrepreneurial environment in European Union countries: A comparative analysis. *EIRP Proceedings*, 11, pp.404–411. Available at: https://proceedings.univ-danubius.ro/index.php/eirp/article/view/1756/1848.

Shane, S., 2003. *A General Theory of Entrepreneurship: The Individual–Opportunity Nexus*. Cheltenham: Edward Elgar Publishing.

Singer, S., 2016. *Global Entrepreneurship Monitor Croatia 2015/2016 Report*. Zagreb: CEPOR.

Singer, S., Šarlija, N. and Pfeifer, S., 2019. *Global Entrepreneurship Monitor Croatia 2018/2019 Report*. Zagreb: CEPOR.

Singer, S., Šarlija, N., Pfeifer, S. and Oberman Peterka, S., 2020. *Global Entrepreneurship Monitor Croatia 2019/2020 Report*. Zagreb: CEPOR.

Singer, S., Šarlija, N., Pfeifer, S. and Oberman Peterka, S., 2022. *GEM Croatia 2021/2022 Report*. Zagreb: CEPOR. Available at: https://www.cepor.hr

Stam, E., 2015. Entrepreneurial ecosystems and regional policy: a sympathetic critique. *European Planning Studies*, 23(9), pp.1759–1769.

Sullivan, G.M. and Artino, A.R., 2013. Analyzing and interpreting data from Likert-type scales. *Journal of Graduate Medical Education*, 5(4), pp.541–542. Available at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3886444/ [Accessed 19 July 2025].

Szerb, L., Acs, Z.J. and Autio, E., 2013. *The Regional Entrepreneurship and Development Index: Measuring regional entrepreneurship*. Final Report for the European Commission, DG Regional Policy.[8]

Szerb, L., Lafuente, E., Márkus, G. and Acs, Z.J., 2020. *The Global Entrepreneurship Index 2019*. Budapest: Global Entrepreneurship and Development Institute.

Wennekers, S. and Thurik, R., 1999. 'Linking entrepreneurship and economic growth', *Small Business Economics*, *13*(1), pp. 27–55. doi:10.1023/A:1008063200484

WEF (World Economic Forum), 2016. *Europe's hidden entrepreneurs: Entrepreneurial employee activity and competitiveness in Europe*. Geneva: World Economic Forum.

WEF (World Economic Forum), 2020. *The global competitiveness report 2019*. Geneva: World Economic Forum.

World Bank, 2021. *World Bank Group to discontinue Doing Business report*. Washington, DC: World Bank. Available at: https://www.worldbank.org/en/news/statement/2021/09/16/world-bank-group-to-discontinue-doing-business-report [Accessed 19 August 2025].

World Bank, 2023. *Entrepreneurship database*. Washington, DC: World Bank. Available at: https://www.enterprisesurveys.org/en/data/exploretopics/entrepreneurship [Accessed 18 August 2025].

World Bank, 2023. *Entrepreneurship database – Methodology*. Washington, DC: World Bank. Available at: https://www.worldbank.org/en/programs/entrepreneurship/methodology [Accessed 19 August 2025].

World Bank, 2023. *Entrepreneurship in developing economies: Ecosystem simulation and policy recommendations*. Policy Research Working Paper No. 10294. Washington, DC: World Bank Group.

World Bank, 2024. *Bulgaria: Overview*. Washington, DC: World Bank. Available at: https://www.worldbank.org/en/country/bulgaria/overview [Accessed 6 August 2025].

[8] The report was finalized in November 2013, and is sometimes informally cited as Szerb, Acs and Autio (2013). However, the official EU publication lists five authors and was released in 2014.

Yin, R.K., 2014. *Case study research: Design and methods*. 5th ed. Thousand Oaks, CA: Sage Publications.