

The role of policy in entrepreneurship ecosystems across different stages of economic development

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1 Introduction

The focus of this study is to understand the role of policy in shaping entrepreneurship ecosystems across countries in different stages of economic development. The complexity of entrepreneurial ecosystems and the diverse policy mixes implemented by countries make it challenging to pinpoint the most effective strategies for fostering entrepreneurship and innovation. To address this, the following subproblems are investigated: (1) the variation in policy mixes related to entrepreneurial ecosystems in high income countries (HICs) and low and medium income countries (LMICs) and (2) the impact of these policy mixes on entrepreneurial ecosystem performance, as measured by factors such as Nascent Entrepreneurship Rate, Total Early-Stage Entrepreneurial Activity, and Perceived Capabilities.

Two primary theoretical and conceptual frameworks are used to explore the role of policy in entrepreneurship ecosystems across different stages of economic development. The first framework, the Entrepreneurial Ecosystems approach, suggests that a conducive ecosystem is essential for fostering entrepreneurship, innovation, and economic growth. This approach emphasizes the interconnectedness of various elements within an ecosystem, such as infrastructure, access to capital, culture, and policy, and how they collectively influence entrepreneurial activity. This framework is used to analyze the structure and performance of entrepreneurial ecosystems in the selected countries.

The second framework is the Policy Mix concept, which asserts that policies do not operate in isolation but interact and influence each other in complex ways. By examining the policy mixes, as proposed by Wang et al. (2022), this study explores how different combinations of policies affect entrepreneurial ecosystems in countries at various stages of economic development. This approach captures the nuanced relationships between policy interventions and their impact on entrepreneurial ecosystems' performance. By combining these two frameworks, this research aims to provide a comprehensive yet straightforward analysis of the role of policy in entrepreneurship ecosystems across diverse economic contexts.

The a priori hypothesis of this research is that the effectiveness of policy mixes in fostering entrepreneurial ecosystems varies across countries at different stages of economic development and that these variations can be attributed to differences in the institutional context and other country-specific factors. Key variables in this hypothesis include the stage of economic development (HICs and LMICs), policy mixes as proposed by Wang et al. (2022), and entrepreneurial ecosystem performance indicators (such as Nascent Entrepreneurship Rate, Total Early-Stage Entrepreneurial Activity, and Perceived Capabilities). In this hypothesis, the policy mixes and the stage of economic development serve as the independent variables, while entrepreneurial ecosystem performance is the dependent variable. The institutional context, including formal and informal institutions, is considered a mediating variable that

influences the relationship between the stage of economic development, policy mixes, and entrepreneurial ecosystem performance.

In this research, several assumptions are made: (1) policies have a direct impact on entrepreneurial ecosystems, (2) countries can be effectively classified based on their stages of economic development, and (3) entrepreneurial ecosystem performance can be accurately measured through indicators such as the number of startups, job creation, and innovation. The research will also have some limitations. First, due to time constrictions selecting a large sample of countries will not be possible. Second, also due to time constraints, tests of robustness and validity will not be conducted on the data. Third, the institutional context analysis is limited in focus, which may not capture the full complexity of the factors influencing policy effectiveness. Fourth, the selected performance indicators may not provide a comprehensive assessment of entrepreneurial ecosystem performance. They may not account for qualitative aspects such as entrepreneurial culture or the quality of startups. Finally, the study's cross-sectional nature may limit the ability to draw causal inferences between policy mixes and entrepreneurial ecosystem performance, as the research does not account for potential time-lagged effects or historical policy changes.

The importance of this study lies in its potential to advance our understanding of the complex relationship between policy mixes, entrepreneurial ecosystems, and stages of economic development. By examining the interaction of these factors and the role of the institutional context, the research provides valuable insights into how different policy interventions may be effective to varying degrees in promoting entrepreneurship and innovation across diverse economic contexts. This study can contribute to the existing body of knowledge on entrepreneurship policy and inform policymakers and stakeholders of the most effective strategies for fostering entrepreneurial activity and economic growth in their specific contexts. By identifying the policy mixes that work best in different stages of economic development and considering the influence of institutional factors, the research can help guide the design and implementation of tailored policy interventions that address the unique needs and challenges countries face at various levels of economic development.

2 Literature Review

2.1 Entrepreneurship Ecosystems

Entrepreneurship ecosystems are intricate and multifaceted systems consisting of many interdependent factors and actors, all of which work to foster and facilitate productive entrepreneurship within a specific geographical territory (Mason & Brown, 2014). These ecosystems are not static but dynamic and ever-evolving, characterized by a continuous interplay between individuals, organizations, and their surrounding environment. This interplay is crucial as it collectively contributes to entrepreneurial ventures' creation, growth, and sustainability (Bramwell et al., 2019).

Several key elements underpin the concept of an entrepreneurship ecosystem. These elements, which can be likened to the pillars of the ecosystem, include accessible markets, human capital or workforce, funding and finance, support systems, and government and regulatory frameworks (Mason & Brown, 2014). Each of these elements plays a pivotal role in creating an environment conducive to entrepreneurship. For instance, accessible markets allow new ventures to sell their products or services. At

the same time, a skilled and educated workforce is essential for the development and execution of innovative ideas (Douglas et al., 2020).

In recent years, the concept of entrepreneurship ecosystems has gained significant traction, particularly in the context of growth-oriented entrepreneurship. Growth-oriented entrepreneurship refers to businesses that possess significant growth potential and are thus capable of contributing substantially to economic development and job creation (Mason & Brown, 2014). The performance and success of these businesses are often viewed as a reflection of the health and vitality of the entrepreneurial ecosystem (Spigel & Harrison, 2018).

Despite the growing interest and research in entrepreneurship ecosystems, the concept is not without its critics. Some scholars argue that while the concept helps understand the broader context and environment in which entrepreneurship occurs, it is less useful for policy intervention (Stam, 2015). These critics suggest that the concept of entrepreneurial ecosystems is abstract and lacks the specificity required for effective policymaking. Others argue that the concept needs further development and refinement to enhance its practical utility in policymaking (Stam, 2018).

Despite these critiques, the concept of entrepreneurial ecosystems remains a valuable tool for understanding the complex dynamics of entrepreneurship. It provides a holistic view of the various factors and actors that influence entrepreneurship and can help identify areas for improvement or intervention. Understanding these ecosystems and their components is essential for promoting entrepreneurship and economic development. It can guide policymakers in creating supportive environments that foster entrepreneurial activity and innovation (Cao & Shi, 2020; Wang et al., 2022). As such, there is a need for further research and understanding of these ecosystems to enhance their effectiveness and to guide policymaking.

2.2 Stages of Economic Development

Economic development is a multifaceted concept that encompasses an economy's progress from a low-income, less-developed state to a high-income, more developed one. This progression is often categorized into different stages of economic development, each characterized by distinct economic structures, growth patterns, and policy needs (Cao & Shi, 2020; Rostow, 1960). The initial stage of economic development, often referred to as the traditional society stage in Rostow's model (1960), is typically characterized by a predominantly agrarian economy with low productivity and income levels. As economies evolve, they transition into an industrial stage, marked by the growth of manufacturing and industry, increased productivity, and rising incomes. The final stage is the post-industrial or service stage, where services become the dominant sector, and innovation and knowledge become key drivers of economic growth (Douglas et al., 2020; Fagerberg et al., 2017).

The stage of economic development significantly influences the nature and performance of entrepreneurial ecosystems. In the early stages of development, entrepreneurship often takes the form of necessity entrepreneurship, driven by a lack of alternative employment opportunities. As economies develop, opportunity entrepreneurship, driven by identifying profitable business opportunities, becomes more prevalent (Mason & Brown, 2014). In less developed economies, entrepreneurial policies tend to focus on basic infrastructure development, improving access to finance, and fostering a basic level of human

capital. In contrast, in more developed economies, policies might focus more on fostering innovation, developing advanced skills, and facilitating access to global markets (Wang et al., 2022). However, the relationship between stages of economic development and entrepreneurial ecosystems is not linear or deterministic. Different countries at similar stages of development can have very different entrepreneurial ecosystems, reflecting differences in their historical, cultural, and institutional contexts (Stam, 2015; Stam, 2018).

2.3 The Relationship between Policy and Entrepreneurship Ecosystems

The relationship between policy and entrepreneurship ecosystems is complex. Policies can shape the conditions for entrepreneurial activity, influence the performance of entrepreneurial ecosystems, and even alter the trajectory of these ecosystems over time (Wang et al., 2022). This relationship is not unidirectional; entrepreneurial ecosystems can also influence policymaking by highlighting areas of need or opportunity and providing feedback on existing policies' effectiveness (Stam, 2015).

2.3.1 Policy Mixes for Entrepreneurial Ecosystems

Policy mixes play a crucial role in shaping entrepreneurial ecosystems. They encompass a range of policies that collectively influence the conditions for entrepreneurial activity and the performance of entrepreneurial ecosystems (Wang et al., 2022). These policy mixes can be seen as the tools governments and policymakers use to foster and facilitate entrepreneurship. The concept of policy mixes for entrepreneurial ecosystems is multifaceted. It involves a combination of different types of policies, including regulatory policies, economic policies, and social policies, among others (Brown & Mawson, 2019). These policies interact with each other and with the various elements of the entrepreneurial ecosystem, influencing its overall performance and effectiveness.

Wang et al. (2022) propose a classification of seven entrepreneurial ecosystem policy mixes. These include policies related to finance, talent, knowledge and technology, networks and support, culture and norms, markets, and policy and governance. Each of these policy areas plays a specific role in the entrepreneurial ecosystem. The effectiveness of these policy mixes can vary depending on the context and stage of economic development (Cao & Shi, 2020). For example, in advanced economies, policies related to knowledge and technology might be more critical, while in emerging economies, policies related to finance and markets might be more crucial. Therefore, policymakers need to consider the specific context and needs of their entrepreneurial ecosystem when designing and implementing policy mixes.

2.3.2 Challenges and Opportunities in Policy Making for Entrepreneurship Ecosystems

Policy making for entrepreneurship ecosystems presents both challenges and opportunities. The complexity and dynamism of entrepreneurial ecosystems pose significant challenges for policymakers. These ecosystems are influenced by numerous factors, many of which are interrelated and change over

time. Therefore, policymakers must take a holistic and flexible approach, considering the entire ecosystem and being prepared to adapt their policies as the ecosystem evolves (Stam, 2015; Stam, 2018).

One of the main challenges in policymaking for entrepreneurial ecosystems is the potential for unintended consequences. Policies designed to promote one aspect of the entrepreneurial ecosystem can sometimes negatively affect other aspects. For instance, a policy aimed at promoting high-tech startups might inadvertently disadvantage other types of businesses or lead to an over-concentration of resources in a particular sector or region (Bramwell et al., 2019). Therefore, policymakers need to carefully consider the potential impacts of their policies and monitor their effects over time.

Despite these challenges, policymaking for entrepreneurial ecosystems also presents significant opportunities. Well-designed policies can help to address specific challenges or gaps in the ecosystem, such as lack of access to finance or skills shortages (Wang et al., 2022). By influencing the conditions for entrepreneurial activity, policies can help steer the ecosystem's development in a desired direction, such as towards more sustainable or inclusive forms of entrepreneurship (Brown & Mawson, 2019).

3 Methodology

3.1 Overview of Fuzzy Set Qualitative Comparative Analysis (FSQCA):

Fuzzy Set Qualitative Comparative Analysis (FSQCA) is a methodological approach that allows to systematically compare cases in social science research, providing a methodological bridge between qualitative and quantitative approaches. This method, developed by Charles Ragin in the late 1980s, is useful for dealing with complex causality and has been increasingly employed in entrepreneurship research (Ragin, 2008; Rihoux & Ragin, 2009).

FSQCA is based on the principles of set theory and fuzzy logic, allowing for the examination of configurations of conditions that lead to a particular outcome. Unlike traditional statistical methods, FSQCA does not assume that the relationship between variables is linear or additive. Instead, it allows for examining how different combinations of conditions can lead to the same outcome, a concept known as "equifinality" (Ragin, 2008, pp 54).

However, while FSQCA is a powerful tool for examining complex causality, it is not without its challenges. As Fiss (2011) notes, building better causal theories using FSQCA requires careful attention to the calibration of data and the construction of truth tables. Despite these challenges, FSQCA remains a valuable tool for entrepreneurship research, allowing for a nuanced understanding of the complex factors that shape entrepreneurial ecosystems.

3.2 Application of FSQCA in Entrepreneurship Research

FSQCA allows for the examination of how different combinations of conditions lead to an outcome, which is particularly relevant in entrepreneurship research where outcomes such as entrepreneurial success, innovation, and growth are often the result of a combination of factors such as individual characteristics,

environmental conditions, and organizational strategies (Douglas et al., 2020). For example, FSQCA has been used to explore the complex relationships between entrepreneurial orientation, innovation, and firm performance (Li & Atuahene-Gima, 2001).

Moreover, FSQCA is well-suited for entrepreneurship research as it allows for the incorporation of contextual and institutional factors that are often critical in shaping entrepreneurial activity. For instance, Stam (2015) used FSQCA to examine the role of entrepreneurial ecosystems in regional policy, highlighting the interplay of various factors such as access to finance, entrepreneurial culture, and institutional support in fostering entrepreneurial activity.

FSQCA also provides a robust method for policy analysis in entrepreneurship. Rogge & Reichardt (2016) used FSQCA to analyze policy mixes for sustainability transitions, providing insights into how different policy instruments can be combined to promote sustainable entrepreneurship. Similarly, Wang et al. (2022) applied FSQCA to examine effective policy mixes in entrepreneurial ecosystems, demonstrating its utility in informing policy design and implementation. As Wang et al. (2022) note, policy mixes in entrepreneurial ecosystems are complex and can have different effects depending on the specific combination of policies in place. FSQCA allows for the examination of these complex policy mixes and their effects on entrepreneurial ecosystems.

In the context of entrepreneurship research, FSQCA has been used to examine a variety of phenomena. For instance, Douglas et al. (2020) used FSQCA to gain a finer-grained understanding of entrepreneurship, demonstrating the method's utility in dealing with complex and multifaceted phenomena. Similarly, Leppänen et al. (2019) explored the use of FSQCA in entrepreneurship research, highlighting the opportunities for future research using this approach. Furthermore, FSQCA has been used to examine gender-specifics in startup processes and the function of the entrepreneurial ecosystem (Sperber & Linder, 2018) and to evaluate technological innovations and the industrial ecosystem of science parks (Yan et al., 2020). These studies underscore the versatility of FSQCA in addressing diverse research questions in entrepreneurship.

In conclusion, applying FSQCA in entrepreneurship research offers significant potential for advancing our understanding of complex entrepreneurial phenomena. Its ability to handle configurational causality, incorporate contextual and institutional factors, and inform policy design makes it a valuable tool for entrepreneurship researchers. However, as with any methodological approach, the use of FSQCA should be guided by the research question and the nature of the available data.

3.3 Data Collection and Sample

The data collection process is centered on publicly available policy documents from the selected countries. These documents, all pertaining to national-level policies, provide a wealth of information on the policy mixes related to entrepreneurial ecosystems. This approach aligns with the work of Brown and Mawson (2019), who also utilized policy documents in their analysis of entrepreneurial ecosystems. The collected documents span from 2017 to 2019. While some policy measures have immediate outcomes, the effect of other entrepreneurship policies may take longer to become apparent (Audretsch et al., 2007).

22 countries were chosen for the sample selection, 11 from HICs and 11 from LMICs. The HICs include Canada, Cyprus, Ireland, Israel, Latvia, Panama, Portugal, Puerto Rico, South Korea, Slovakia and Uruguay. The LMICS include Angola, India, Indonesia, Madagascar, Armenia, Brazil, Colombia, Ecuador, Lebanon, Mexico and Peru. In total, 439 documents were collected for these countries. The full list of the countries and sources is included in Table 1. This selection is designed to capture the diversity of entrepreneurial ecosystems across different stages of income level and development. This selection was based on the availability of comprehensive policy documents, the ease of data accessibility, and to have a list of countries that represent most regions of the world. By comparing these countries, we aim to uncover the complex causal relationships between policy and entrepreneurial ecosystems in HICs and LMICs, similar to how Wang et al. (2022) compared early-stage and late-stage startups.

Table 1 Policy Document Collection

Countries	Number of Documents	Countries	Number of Documents
Angola	23	Canada	25
India	27	Cyprus	17
Indonesia	15	Ireland	28
Madagascar	13	Israel	22
Armenia	15	Latvia	15
Brazil	20	Panama	16
Colombia	21	Portugal	20
Ecuador	25	Puerto Rico	17
Lebanon	11	South Korea	28
Mexico	18	Slovakia	26
Peru	21	Uruguay	16

We will assess the performance of entrepreneurial ecosystems in these countries using various indicators, including Perceived Capabilities, Nascent Entrepreneurship Rate, Total Early-Stage Entrepreneurial Activity, Successful Business Exit Rate, and Employee Entrepreneurial Activity. A list of the entrepreneurial ecosystem performance indicators and their description is included in Table 2. These indicators, sourced from the Global Entrepreneurship Monitor (GEM), provide a comprehensive view of the entrepreneurial ecosystem performance and allow us to understand the relationship between policy and ecosystem performance. The seven policy mixes also have individual indicators which are used for their measurement. The total number of indicators is 23, ranging from three to four per policy mix area; the complete list of indicators is included in Table 3.

Table 2 Items for measuring entrepreneurial performance

Indicators	Description
Perceived Capabilities	Percentage of the 18–64 population who agree that they have the required knowledge, skills and experience to start a business.
Nascent Entrepreneurship Rate	Percentage of the 18–64 population who are currently nascent entrepreneurs, i.e. actively involved in setting up a business they will own or co-own; this business has not yet paid salaries, wages, or any other payments to the owners for more than three months.
Total Early-Stage Entrepreneurial Activity	Percentage of the 18–64 population who are either a nascent entrepreneur or are owner-manager of a new business, i.e. the proportion of the adult population who are either starting or running a new business.
Successful Business Exit Rate	Percentage of the 18–64 population who have exited a business in the past 12 months, and the business continued to operate.
Employee Entrepreneurial Activity	Percentage of the 18–64 population 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.

Our data collection and sample selection methodology is designed to provide a nuanced understanding of the role of policy in entrepreneurship ecosystems across different stages of economic development. By focusing on publicly available policy documents, selecting a diverse sample of countries from multiple regions of the world, and employing a comprehensive set of performance indicators, we aim to provide valuable insights into the complex interplay between policy and entrepreneurial ecosystems. This approach will yield valuable insights and contribute to the broader discourse on entrepreneurship and economic development.

Table 3 Items for measuring *EE policy mixes*

Policy instrument	Specific measures	Items
Education and training	Entrepreneurship and innovation education	There are many online/offline courses, public education activities, and knowledge lectures related to entrepreneurship and innovation
	Skills training programs	Entrepreneurs and employees can receive regular training in entrepreneurial, financial, and managerial skills and expertise
	Business advise and start-up guidance	Potential entrepreneurs and young entrepreneurs can get entrepreneurship-related advice, experience, and start-up guidance easily
Direct funding support	Start-up funding support	The government provides lots of subsidies and loan discounts for entrepreneurs and start-ups
	R&D funding support	The government provides lots of subsidies, grants, fund projects, and loan discounts for R&D activities
	Technology transfer funding support	The government provides lots of grants, rewards, and fund projects for technology transfer-commercialization across diverse actors
Tax incentives	Universal tax incentives for entrepreneurship and innovation	The government provides various universal tax incentives for entrepreneurship and innovation, including tax relief for small and micro firms, R&D tax credits, and accelerated depreciation of fixed assets
	Targeted tax incentives for entrepreneurship and innovation	The government provides various targeted tax incentives for high-tech firms and talent, and special entrepreneurial groups including transnational entrepreneurs, returnee entrepreneurs, scientific researchers, and college graduates
	Support service tax incentives	The government provides various tax incentives for incubators, accelerators, service intermediaries, financial institutions, etc
Widening financial engagement	Governmental guarantees	Entrepreneurs and start-ups can obtain strong financing support such as credit guarantees and risk compensation
	Venture capital funds	The government establishes various VC funds to direct local and international capital into entrepreneurship and innovation
	Diversifying financing channels	There are lots of angel investors, VC institutions, crowdfunding platforms, and developed equity markets
	Promoting new financing models	There are lots of new financing models, including intellectual property pledge financing, equity debt financing, insurance financing, and "investment-loan-insurance" joint financing

Source: Wang et al. (2022)

Table 3 (continued)

Policy instrument	Specific measures	Items
Culture and infrastructure improvement	Fostering an entrepreneurship and innovation culture	There are many entrepreneurship and innovation activities, competitions, exhibitions, mutual-aid projects, news stories, and a thick culture encouraging entrepreneurship and innovation
	Improving public infrastructure	There is well-functioning public infrastructure including transportation, telecommunication, broadband, data centers, computing facilities, logistics, and energy supply
	Improving innovation infrastructure	There is well-functioning innovation infrastructure including laboratories, incubators, accelerators, and science parks
Formal institutional refinement	Business institutional refinement	There are low thresholds for start-up registration and simplified business registration, licensing, and bankruptcy procedures
	Technology institutional refinement	There is a robust institutional framework that stimulates and protects the intellectual property operation and technology transfer-commercialization processes worldwide
	Talent institutional refinement	There is a robust institutional framework that attracts overseas talent, encourages entrepreneurial research personnel, and promotes the free flow of talent across sectors, industries, and regions
	Market regulatory refinement	There is a healthy market regulatory environment with fair competition between formal and informal economies, strong contract enforcement and property rights protection, and fewer price and trade controls
Networking	Promoting interactions among entrepreneurs	Large, medium, and small firms, start-ups, and MNCs have formed multi-scale entrepreneur networks with close business partnerships, collaborative R&D partnerships, and peer-based support
	Promoting interactions among the Triple Helix agents	The academic, business, and government sectors within and across regions have formed alliance networks of resource sharing, complementary advantages, and collaborative innovation
	Promoting the establishment of a support service network	There is a tight and interactive service network consisting of professional business service, knowledge-intensive service, and financial service intermediaries, and various well-functioning comprehensive service platforms and specialized service platforms

Source: Wang et al. (2022)

3.4 Data Calibration

Data calibration is a crucial step in FSQCA. It involves transforming raw data into fuzzy set membership scores ranging from 0 to 1, representing full non-membership and full membership in a set, respectively (Ragin, 2008). The calibration process is not merely a statistical operation but a substantive one, requiring deep knowledge of the case and the variables under study (Rihoux & Ragin, 2009).

In FSQCA, the calibration process is guided by three qualitative anchors: full membership, full non-membership, and the crossover point, which is the point of maximum ambiguity (Ragin, 2008). The researcher must define these anchors based on theoretical and substantive knowledge. For instance, in the study of entrepreneurial ecosystems, one might calibrate the variable "level of government support" by defining full membership as comprehensive financial and regulatory support for startups, full non-membership as no government support, and the crossover point as some government support but not comprehensive. Table 4 includes more details on the calibration process of this research.

Table 4 Descriptive statistics and calibration criteria

Variable	Descriptive statistics		Calibration criteria		
	Mean	SD	Full membership (upper quartile)	Cross-over point (median)	Full non-membership (lower quartile)
<i>EDUCA</i>					
<i>FUNDI</i>					
<i>TAXIN</i>					
<i>WIDEN</i>					
<i>CUL&INF</i>					
<i>INSTI</i>					
<i>NETWO</i>					

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The calibration process also involves dealing with issues of consistency and coverage. Consistency refers to the degree to which cases that belong to a particular set also belong to the outcome set. Coverage refers to the proportion of the outcome set covered by a particular combination of conditions (Ragin, 2008). These measures help to assess the strength and relevance of the relationships identified in the analysis.

It is important to note that calibration is not a one-time process but a recursive one. Researchers may need to revisit and adjust their calibration decisions as they gain more insights into their data and cases (Ragin, 2008). This iterative process is part of the broader methodological commitment of FSQCA to case-oriented, configurational analysis.

3.5 Analysis Procedure

The first step in the analysis procedure is constructing a “truth table”, a list representing all logically possible combinations of conditions related to the policy mixes and their outcomes. Each row of the table represents a configuration of conditions (Rihoux & Ragin, 2009). The second step involves the reduction of the truth table. This is achieved by applying the principles of consistency and coverage. Consistency measures the degree to which cases sharing a particular combination of conditions agree in displaying the outcome of interest. Coverage, on the other hand, measures the empirical relevance of a condition or a combination of conditions for the outcome (Ragin, 2008).

The third step is the solution of the truth table, which involves using Boolean algebra to simplify the complex solution into a more parsimonious one. This is achieved using the Quine-McCluskey algorithm in the fsQCA 4.1 software package. This step results in a set of configurations that are sufficient for the outcome to occur (Rihoux & Ragin, 2009). The final step is the interpretation and presentation of the results. This involves translating complex and parsimonious solutions into substantive insights about the relationship between policy mixes and entrepreneurial ecosystem performance. This step also involves a discussion of the cases that are members of the configurations identified in the solution, as well as those that are non-members (Ragin, 2008).

4 Research Findings

4.1 Introduction to Findings

The research embarked upon a comprehensive exploration of the policy configurations that aim to shape entrepreneurial ecosystems in various countries, with a particular focus on the differences between LMICs and HICs. The findings, as detailed in Table 5, reveal an array of policy configurations, each with its unique characteristics and implications for the entrepreneurial ecosystem.

Table 5 Configurations of *EE* policy mixes for high-performing low & medium income countries and high-performing high income countries

Condition	Low & Medium Income Countries' Configurations				High Income Countries' Configurations				
	1	2	3	4	5	6	7	8	9
<i>EDUCA</i>	●	●	●	●	⊗	⊗	⊗	●	⊗
<i>FUNDI</i>	●	⊗	●	⊗	⊗	⊗	●	⊗	●
<i>TAXIN</i>	⊗	⊗	⊗	⊗	●	⊗	●	●	●
<i>WIDEN</i>	⊗	⊗	⊗	●	⊗	⊗	●	⊗	●
<i>CUL&INF</i>	⊗	⊗	●	●	⊗	●	●	●	●
<i>INSTI</i>	●	●	●	●	⊗	⊗	⊗	●	●
<i>NETWO</i>	⊗	●	⊗	⊗	⊗	⊗	⊗	⊗	●
Consistency	0.99	0.98	0.99	0.99	0.94	0.96	0.97	0.94	0.96
Raw coverage	0.19	0.18	0.18	0.23	0.16	0.24	0.21	0.16	0.17
Unique coverage	0.12	0.11	0.5	0.10	0.09	0.17	0.15	0.09	0.12
Overall solution consistency				0.99					0.99
Overall solution coverage				0.52					0.70
Configuration name	<i>Configuration 1</i>	<i>Configuration 2</i>	<i>Configuration 3</i>	<i>Configuration 4</i>	<i>Configuration 5</i>	<i>Configuration 6</i>	<i>Configuration 7</i>	<i>Configuration 8</i>	<i>Configuration 9</i>
Countries (Ranked by performance)	Armenia	Ecuador	Peru	Angolia	Puerto Rico	Panama	Latvia	Uruguay	Canada

“●” Large circles represent core conditions
 “●” Small circles represent perpheral conditions
 “⊗” Indicated the absence of conditions
 “ ” Blank spaces indicate that the condition can either be present or absent

The analysis employs a comparative approach that sheds light on the diverse strategies nations implement to support entrepreneurial activity. By categorizing these policy configurations, the underlying principles that guide economic policy-making in varying contexts are explored. This highlights the distinct strategic priorities between LMICs and HICs and uncovers patterns of similarities and divergences. Such insights are crucial for understanding the broader implications of policy choices on the health and growth of entrepreneurial ecosystems.

4.2 Comparing Configurations of High Income Countries and Low and Medium Income Countries

The analysis of policy configurations between HICs and LMICs provides rich insights into the varied strategic approaches these groups use to foster their entrepreneurial ecosystems. These configurations suggest distinct priorities and strategies tailored to each country's specific economic circumstances and developmental needs.

For LMICs, education and institutional frameworks are prevalent across all configurations, highlighting a common focus on building foundational capabilities and regulatory environments conducive to entrepreneurship. For instance, Armenia emphasizes education, direct funding, and institutional frameworks, which points to a holistic approach towards building a robust entrepreneurial base. Ecuador and Peru also prioritize education, with Ecuador additionally

focusing on networking and Peru integrating cultural and informational support alongside funding, illustrating diverse strategies within similar economic contexts.

Angola represents another variant within LMICs, emphasizing a wider set of policies including education, widening financial engagements, cultural and informational support, and institutional frameworks. This configuration suggests a strategy aimed at both broadening access to resources and enhancing the entrepreneurial culture and regulatory environment.

In contrast, HICs demonstrate a stronger emphasis on tax incentives and cultural and informational support, indicative of a more resource-rich setting where fiscal policies and cultural frameworks can be more extensively leveraged to stimulate entrepreneurial activity. For example, Canada's policy mix is the most comprehensive among the studied countries, incorporating funding, tax incentives, widening financial engagements, cultural support, institutional frameworks, and networking. This suggests a multifaceted strategy aimed at fostering a vibrant and interconnected entrepreneurial ecosystem.

Latvia and Uruguay present slightly narrower, yet still robust, configurations. Latvia focuses on funding, tax incentives, widening financial engagements, and cultural support, whereas Uruguay prioritizes education, tax incentives, cultural support, and institutional frameworks. These configurations highlight the nuanced approaches HICs take, balancing direct support with strategic incentives to enhance their entrepreneurial landscapes.

Puerto Rico and Panama illustrate more focused approaches within the HIC group, with Puerto Rico centering on tax incentives and Panama on cultural and informational support. These choices reflect targeted strategies to leverage specific policy levers to strengthen their entrepreneurial ecosystems.

Overall, LMICs tend to prioritize education and institutional frameworks, reflecting a foundational approach to support entrepreneurship through capacity building and regulatory enhancement. In contrast, HICs emphasize tax incentives and cultural support, reflecting their capacity to implement comprehensive, incentive-based, and culturally integrated strategies. This comparative analysis underscores the diverse pathways countries adopt based on their economic statuses, each tailoring its policy mix to best support and stimulate its unique entrepreneurial environment.

5 Conclusion

5.1 Implications of Findings

The findings from this study offer significant implications for policymakers, researchers, and practitioners involved in shaping entrepreneurial ecosystems, particularly through policy

configurations. The distinctions and similarities identified between HICs and LMICs highlight the nuanced roles that various policy instruments play in different economic contexts.

For LMICs, the prevalence of educational and institutional frameworks suggests a fundamental approach where building capacity and establishing robust regulatory environments are prioritized. This implies that for emerging economies, foundational policies that enhance educational access and strengthen institutional governance are critical for fostering sustainable entrepreneurial activity. Policymakers in these regions might consider enhancing these areas further to build a more conducive environment for entrepreneurship development.

In contrast, the emphasis in HICs on tax incentives and cultural and informational support indicates a strategic use of fiscal policies and socio-cultural frameworks to stimulate entrepreneurial initiatives. Such findings suggest that in more developed economies, where basic educational and institutional frameworks are well-established, the focus can shift towards creating a favorable tax environment and enriching the cultural context to support entrepreneurship. This might include more sophisticated fiscal measures and policies that integrate entrepreneurship into the cultural fabric of society, enhancing its appeal and accessibility.

Furthermore, the differences in policy emphasis also suggest that there is no one-size-fits-all approach to fostering entrepreneurship. Each country's strategy must be tailored to its specific economic conditions and developmental stages. Therefore, policymakers should consider these findings when designing or revising policies to ensure they are effectively addressing the unique needs of their entrepreneurial ecosystems.

This comparative analysis not only provides a framework for understanding how different policies impact entrepreneurial activity across various countries but also offers a basis for future research to explore the longitudinal effects of these policies on entrepreneurial success and economic growth.

5.2 Limitations of the Study

While this research aims to provide valuable insights into the policy configurations of entrepreneurial ecosystems, it has limitations. The study primarily focuses on the presence or absence of certain policy areas, which may overlook the nuances of how these policies are implemented. Additionally, due to time constraints, the sample size of countries was small, and more tests needed to be conducted on the data to ensure robustness and validity. Furthermore, the research is based on a cross-sectional analysis, which may not fully capture the dynamic nature of entrepreneurial ecosystems and the impact of policy changes over time. Future research could address these limitations by examining the implementation of policies in more detail and employing a longitudinal research design.

5.3 Final Remarks

In conclusion, this research contributes to a more nuanced understanding of the role of policy in shaping entrepreneurial ecosystems. The findings underscore the importance of a comprehensive and context-specific approach to policy-making, highlighting the varying policy configurations in HICs and LMICs. As the field of entrepreneurship continues to evolve, policy-makers and researchers alike must understand these complexities and their impact on entrepreneurial activity. I plan to further this research by including more observations and conducting the necessary tests for robustness and validity.

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