LINKING THE 4 E's:
ENTREPRENEURSHIP, ECOSYSTEMS, AND EMERGING ECONOMIES

Maribel Guerrero

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Emerging economies/ markets

An emerging market/economy is usually described as an economy characterized by **low-income but rapid growth** that is utilizing economic liberalization as the primary engine of growth (Crittenden and Crittenden, 2012).

Mody (2003) argues that an emerging market economy is strongly related **to a *developing nation* (i.e., liquidity, equity, trade volume, foreign direct investment, and regulations)** becoming more engaged with global markets as it grows. In this view, the emerging economy transition patterns are from pre-industrial to a modern economy with better living standards.

Emerging economies/ markets

There is **little consensus** in the academic literature on which countries qualify as emerging markets.

According to the **Standard and Poors' index**, the emerging market economies include Brazil, Chile, China, Colombia, Czech Republic, Egypt, Hungary, India, Indonesia, Malaysia, Mexico, Morocco, Peru, Philippines, Poland, Russia, South Africa, Thailand, and Turkey.

Although it is important to have some clarity as to what constitutes an emerging market, this list excludes certain markets that we would also consider as emergent, hence, we do not want to limit potential contributions to the markets mentioned above.

Eco-system

*"all the **living** things*
*in an **area** and the*
*way they **affect** each other*
*and the **environment**"*

[US Agency]

Eco-system

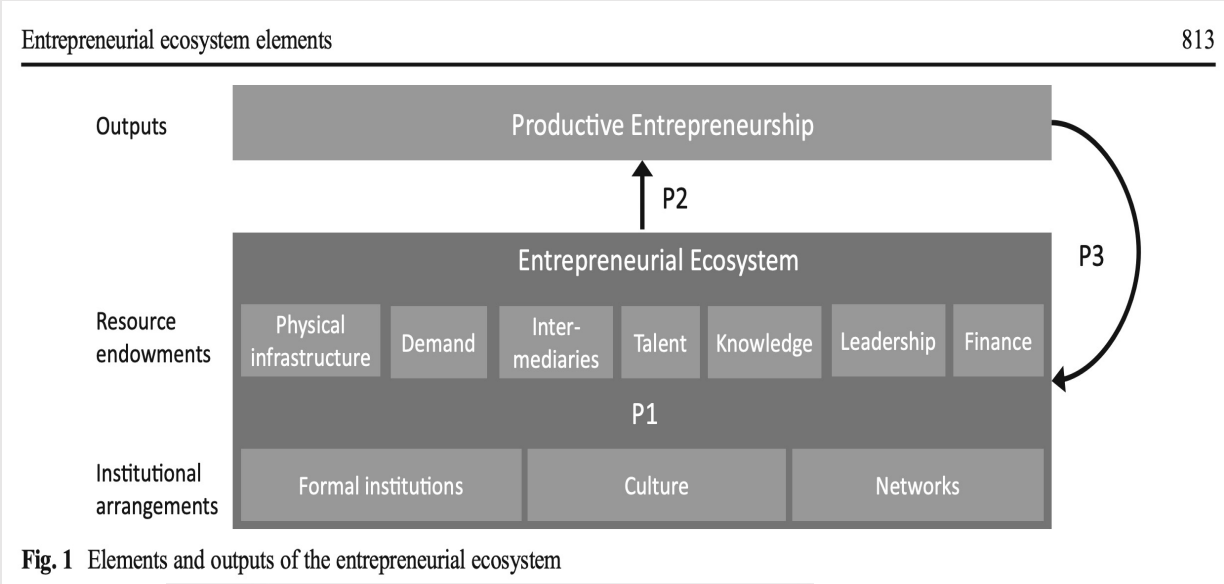
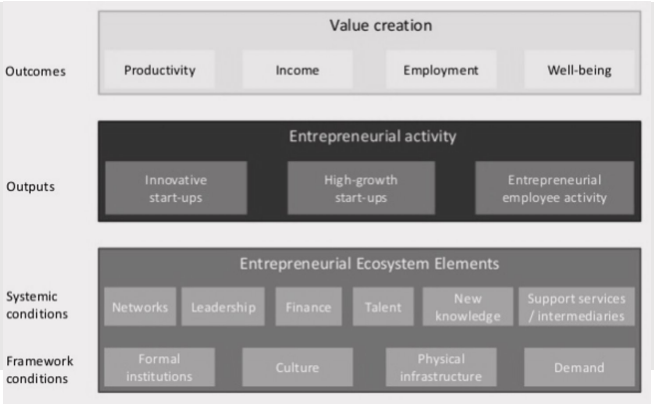


Fig. 1 Elements and outputs of the entrepreneurial ecosystem



Stam, E., & Van de Ven, A. (2021). Entrepreneurial ecosystem elements. *Small Business Economics*, *56*(2), 809-832.

Eco-system

Table 1
Operationalization of the indicators of entrepreneurial ecosystem elements and output.

Elements	Description	Empirical indicators	Data source
Formal institutions	The rules of the game in society	Two composite indicators measuring the overall quality of government (consisting of scores for corruption, accountability, and impartiality) and the ease of doing business	Quality of Government Survey (QOG) and the World Bank Doing Business Report
Entrepreneurship culture	The degree to which entrepreneurship is valued in a region	A composite measure capturing the regional entrepreneurial culture, consisting of entrepreneurial motivation, cultural and social norms, importance to be innovative, and trust in others	Global Entrepreneurship Monitor (GEM) and European Social Survey (ESS)
Networks	The connectedness of businesses for new value creation	Percentage of SMEs that engage in innovative collaborations as a percentage of all SMEs in the business population	Regional Innovation Scoreboard (RIS)
Physical Infrastructure	Transportation infrastructure and digital infrastructure	Four components in which the transportation infrastructure is measured as the accessibility by road, accessibility by railway and number of passenger flights and digital infrastructure is measured by the percentage of households with access to internet	Regional Competitiveness Index (RCI)
Finance	The availability of venture capital and access to finance	Two components: The average amount of venture capital per capita and the percentage of SMEs that is credit constrained	Invest Europe and European Investment Bank (EIB)
Leadership	The presence of actors taking a leadership role in the ecosystem	The number of coordinators on H2020 innovation projects per capita	Community Research and Development Information Service (CORDIS)
Talent	The prevalence of individuals with high levels of human capital, both in terms of formal education and skills	Four components: The percentage of the population with tertiary education, the percentage of the working population engaged in lifelong learning, the percentage of the population with an entrepreneurship education, the percentage of the population with e-skills	Eurostat and the Global Entrepreneurship Monitor (GEM)
New Knowledge	Investments in new knowledge	Intramural R&D expenditure as a percentage of Gross Regional Product	Eurostat
Demand	Potential market demand	Three components: disposable income per capita, potential market size expressed in GRP, potential market size in population. All relative to EU average.	Regional Competitiveness Index (RCI)
Intermediate services	The supply and accessibility of intermediate business services	Two components: the percentage of employment in knowledge-intensive market services and the number of incubators/accelerators per capita	Eurostat and Crunchbase
Output	Entrepreneurial output	The number of Crunchbase firms founded in the past five years per capita	Crunchbase
	Unicorn output	The absolute number of unicorns in the region founded in the last ten years	CB Insights and Dealroom

Leendertse, J., Schrijvers, M., & Stam, E. (2021). Measure twice, cut once: Entrepreneurial ecosystem metrics. *Research Policy*, 104336

Eco-system

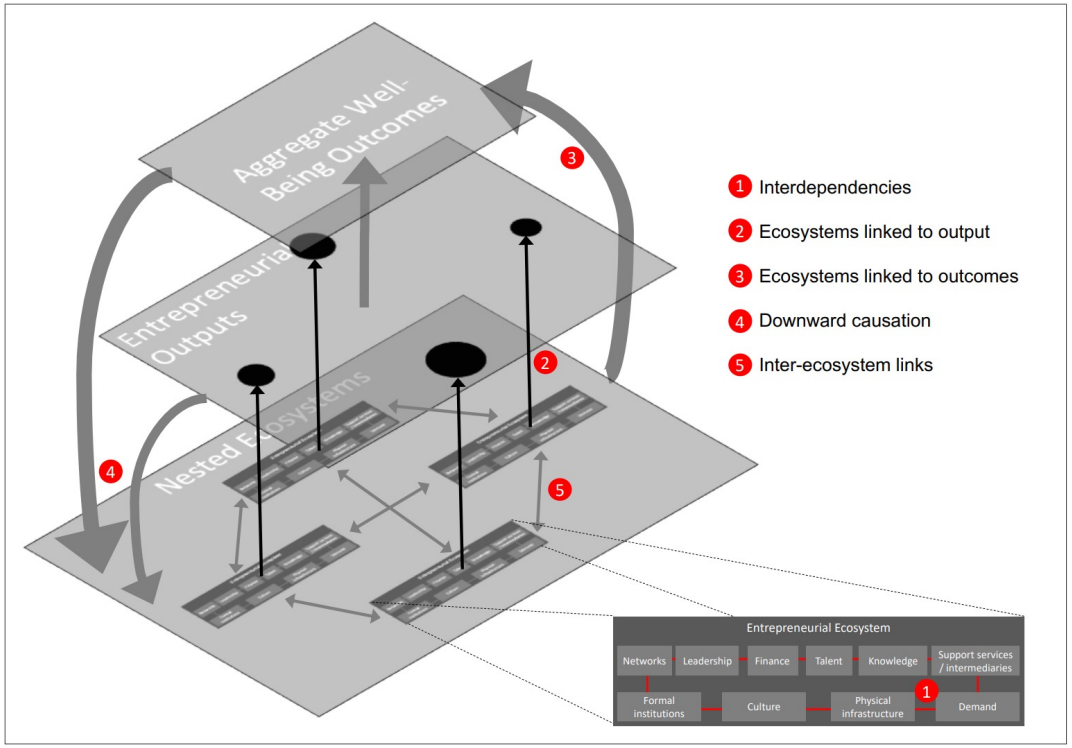


Figure 1. Causal mechanisms in the entrepreneurial ecosystem research program (after Stam, 2015).

Wurth, B., Stam, E., & Spigel, B. (2021). Toward an entrepreneurial ecosystem research program. *Entrepreneurship Theory and Practice*, .

Entrepreneurship

	Low impact	High impact
Routine	**1.** E.g., sole proprietors, mom-and-pop operations, self-employed professionals selling services.	**2.** E.g., firms that have grown large through routine activity in finance or real estate.
Schumpeterian	**3.** E.g., disruptive firms in small sectors; recently created innovative start-ups.	**4.** E.g., entrepreneur-founded firms that have grown large through technological or business innovations.

Figure 1. Four categories of business activity.

Henrekson, M., & Sanandaji, T. (2019).
Measuring entrepreneurship: do established metrics capture Schumpeterian entrepreneurship? Entrepreneurship Theory and Practice.

Entrepreneurship

Table 2.2 Four types of entrepreneurial ventures

	Survival	Lifestyle	Managed Growth	Aggressive Growth
Annual growth rate	nominal	< 5%	10–15%	> 20%
Time horizon	day to day	weekly, monthly	1–3 years	2–5 years
Key resources	few, physical, simple, formative	simple, physical utilitarian, robust	complex, physical and intangible, robust	complex, intangible, instrumental, robust
Management focus	selling whatever I have	maintenance of working business	incremental strategic growth	scalability model
Management style	reactive	tactical	strategic	strategic and proactive
Entrepreneurial orientation	very low	low	moderate	high
Technology investment	none	limited	moderate	high
Liability of smallness	significant	significant	less significant	not significant
Source of finance	self	self, family and friends, bank	self, family and friends, bank, private investors	bank, angel investors, venture capital and private equity firms, public markets
Exit approach	shut down	shut down, sell, transfer	sell, merge, transfer	sell, merge, go public
Management skills	making, selling	operational skills, basic management	planning, strategizing, delegating, leveraging	planning, innovation, cash flow management, negotiation
Structure	little to none	simple	functional, centralized	functional; product and market-based
Economic motives	sustain oneself, one's family	income substitution	wealth creation	wealth creation
Reward emphasis	weekly income taken from business	salary, bonus	salary, performance incentives, equity	equity, capital gain

Morris, M. H., & Kuratko, D. F. (2020). What do entrepreneurscreate? Understanding four types of ventures. Edward ElgarPublishing

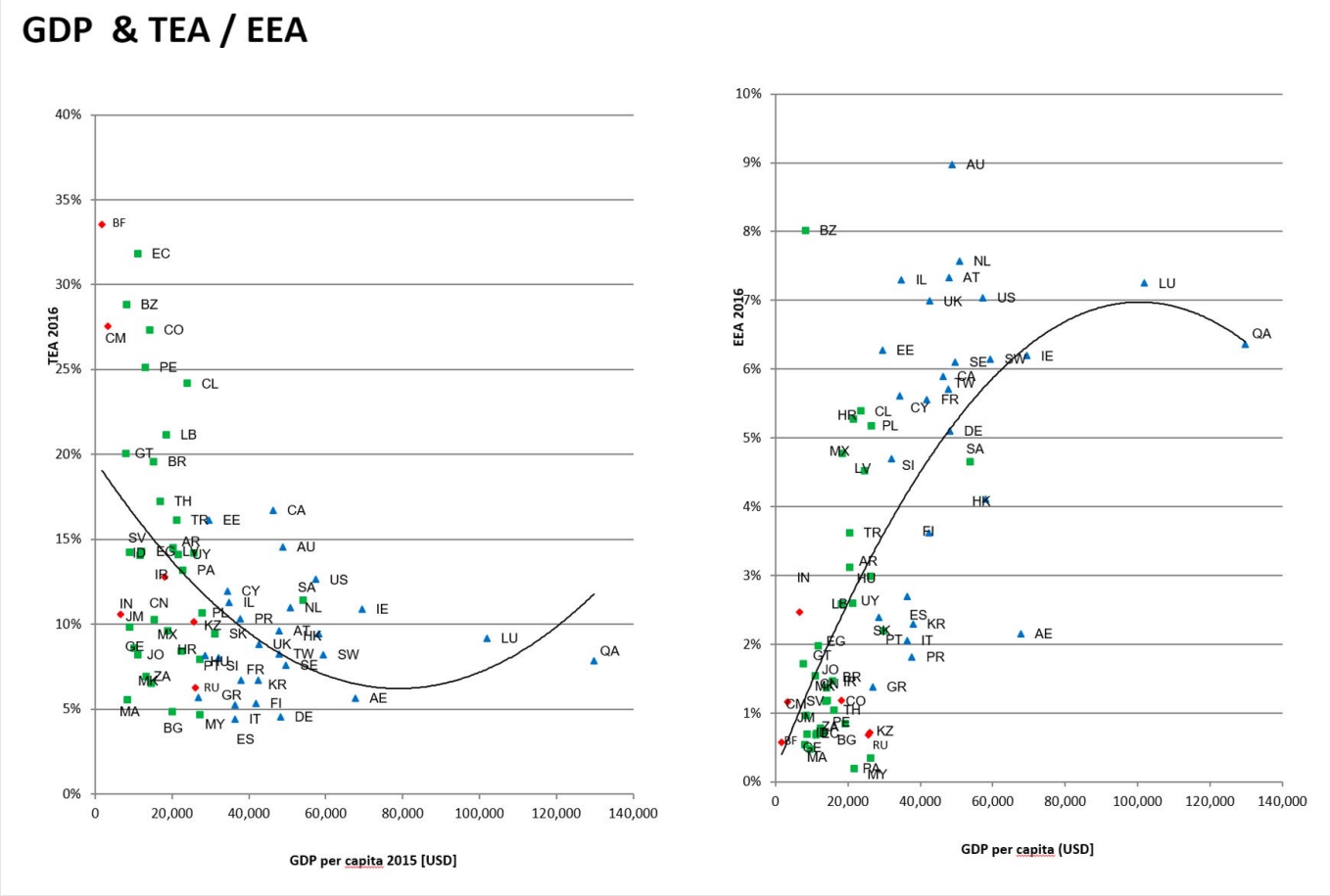
Entrepreneurship

Welter et al. (2017: p. 318) highlight that **there is no single type of entrepreneurship, no ideal context, and no ideal type of entrepreneur**. Therefore, differences matter; and where, when, and why those differences matter most need to be ascertained.

It **opens up the discussion on the diversity of contexts and types of entrepreneurship** that should be understood by analysing their nature, richness, and dynamics (Welter 2011; Karlsson et al. 2019).

Welter, F. (2011).
Contextualizing entrepreneurship—conceptual challenges and ways forward.
Entrepreneurship Theory and Practice, 35(1), 165–184

4 E's


GDP & TEA / EEA
TEA 2016
GDP per capita 2015 [USD]
EEA 2016
GDP per capita (USD)

GEM

Guerrero, M., Liñán, F., & Cáceres-Carrasco, F. R. (2020).

The influence of ecosystems on the entrepreneurship process: a comparison across developed and developing economies. *Small Business Economics*, 1-27

Research motivation

(a) In the past three decades, the literature has outlined the critical **impact of environmental conditions on entrepreneurship and economic growth** (Urbano et al. 2019).

(b) In the past 5 years especially, academic and public actors have focused on the **configuration of thriving entrepreneurial ecosystems** (Autio et al. 2014; Acs et al. 2017).

It explains why the **Silicon Valley** entrepreneurial ecosystem has captured the attention of the international public policy community who wish to emulate it (Audretsch 2019). However, scholars worldwide argue that this model of entrepreneurship has **several limitations when addressing the most compelling contemporary global problems**.

Research objective

To review the previous literature to identify

(a) which environmental conditions have been affecting

(b) entrepreneurial processes

(c) per type of economy

Theoretical foundations

Entrepreneurship

(Henrekson & Sanandaji, 2019)

(a) Schumpeterian: academic & innovative

(b) Non-Schumpeterian: self-employment & traditional forms

Entrepreneurial process

(Bygrave and Hofer, 1991; DeTienne, 2010;…)

(a) Conception – potential

(b) Gestation – nascent

(c) Infancy – new entrepreneur

(d) Adolescence – established

(e) Maturity – consolidated

Economic types (level of income)

(a) Developed

(e) Developing

Environmental conditions (eco-system elements)

Methodological design

Period of analysis: 2000-2017

Source of information:

(a) WOS
(b) Scopus
(c) Top-entrepreneurship journals

Empirical papers: 67

Data analysis:

(a) Economy type
(b) Entrepreneur type
(c) Entrepreneurial process
(d) Ecosystem element
(e) ……

Findings

Table 2 Mapping environmental conditions for potential entrepreneurs

Economies	Environmental conditions	
	Positive effect	Negative effect
Developed economies	**Policies** **EN**: Preferential procurement policies implemented by the government to support entrepreneurship **Support programs** **EN**: Greater emphasis on the identification of opportunities, and not only on exploitation **Professional support** **GE**: Displacing networking events are drivers of actual behaviour towards a start-up, but interact with perceptions **Higher education** **AE**: University capabilities facilitating the venture-formation process: (1) creating new paths of action, (2) balancing both academic and commercial interests, and (3) integrating new resources **Labour market** **EN**: Increase in unemployment leads more people to consider entrepreneurship **Market dynamism** **EN**: A strong local industrial specialisation increases potential entrepreneurship	**Support programs** **ODE**: Support programs in deprived areas may effectively discourage entrepreneurship, or at least be ineffective (due to the perceptions of beneficiaries) **Financial support** **ODE**: Limited funding and traditionally restricted access to specific markets are barriers that deter black entrepreneurship
Developing economies	**Professional support** **GE**: Specific training on problem recognition and problem solving **ODE**: Collaborative platforms by social entrepreneurs **Individual capacity** **GE**: Individual traits	**Policies** **EN**: Inefficient/unstable policies/legislation, with frequent legal and tax changes **Higher education** **GE**: Lack of or ineffective entrepreneurship education in society and in universities **Market dynamism** **ODE**: Lack of market-supporting institutions **GE**: Transitional socioeconomic context **Culture** **EN**: Lack of entrepreneurial culture **ODE**: The low reputation of entrepreneurs, an informal activity, and sociocultural norms that impede participation in market-based activities
Multiple countries	**Market dynamism** **SE**: Economic freedom increases the preference to be self-employed, and higher corruption increases the preference to be self-employed	**Market dynamism** **SE**: Higher corruption decreases the preference to be self-employed

Source: the authors

SE, self-employed; *ODE*, owner demographic entrepreneurship (rural, youth, gender, immigrant, social); *EN*, entrepreneurship with lower innovative/technological outcomes; *AE*, academic entrepreneurship; *GE*, graduate entrepreneurship; *IE*, innovative entrepreneurship (high-tech, knowledge-based, high-growth)

Findings

Table 3 Mapping environmental conditions for nascent/new entrepreneurs

Economies	Environmental conditions	
	Positive effect	Negative effect
Developed economies	**Policies** **ODE**: Legislative changes **AE**: Policies for promoting academic entrepreneurship **Support programs** **ODE**, **EN**: Government intervention via incubators or support assistance from public agencies **IE**: Programs for fostering technology entrepreneurship **Higher education** **AE**, **GE**: University capabilities **EN**: Entrepreneurship training **Professional infrastructures** **ODE**: Incubation strategies **AE**, **IE**: Collaboration engagement, advisors/mentors **R&D** **AE**, **IE**: Technology transfer offices outside the university to commercialise scientific knowledge, both in the form of licencing and firm creation **Market dynamics** **IE**: Conditions of scalability for ambitious entrepreneurs **IE**: Participation in the business ecosystem **Culture** **AE**: Existing institutional structures to legitimise and facilitate spin-off activity **Personal capacity** **IE**: Experiences and personal characteristics	**Policies** **EN**: The judicial (in)efficacy for new entrepreneurs but not for corporate entrepreneurs, industrial specialisation policies **GE**: Government rules and regulations for graduate entrepreneurs **Support programs** **ODE**: Entrepreneurship support for new entrepreneurs in deprived communities **Financial support** **EN**: Significant barriers: access to capital **Market dynamic** **IE**: Perception of barriers by ambitious entrepreneurs **EN**: Access to distribution channels, effects of macroeconomic crises or uncertainty, munificence **R&D** **EN**: Product differentiation, R&D, and advertising **Culture** **EN**: Social norms or wealth inequalities affecting new entrepreneurs **ODE**: A discriminatory environment, such as a critical barrier that limits owner demographic entrepreneurs in the USA **IE:** Individual perceptions and constraints
Developing economies		**Policies** **EN**: Changes in taxation procedures **EN**: Misalignments between policies and programs **ODE**: Inconsistent/uncertain state policy, weak legislation, inefficient state administration **Financial support** **ODE**: Risk capital, lack of financial resources **EN**: Exorbitant interest rates **EN**: Weak legislative basis for venturing investment **Market dynamics** **ODE**: Weakness of institutions that support the market could be the primary barrier for rural entrepreneurs **Social** **EN**, **ODE**: Corruption, the entrepreneur's social reputation, and motivation for the liquidation of businesses
Multiple countries	**Policies** **EN**: Start-up procedures, taxation, interest rates **Support programs** **ODE**, **EN**: Incubation programs **Market dynamics** **IE**: Business freedom and corruption increase innovative entrepreneurs **SE**: Freedom for foreign investment **Culture** **EN**: A supportive national culture **Higher education** **AE**: University support programs for spin-offs **R&D** **IE**: Knowledge spillover	**Policies** **EN**: Bureaucracy in registration procedures **Financial support** **IE**: Risk capital, lack of funds **ODE**: Discrimination in accessing bank credit **Professional support** **EN**: Institutional pressures **Market dynamics** **SE**: Business freedom and corruption decreases self-employment **Culture** **ODE**: Discrimination against minority groups **R&D** **IE**: Lack of public/private R&D investment

Source: the authors

SE, self-employed; *ODE*, owner demographic entrepreneurship (rural, youth, gender, immigrant, social); *EN*, entrepreneurship with lower innovative/technological outcomes; *AE*, academic entrepreneurship; *GE*, graduate entrepreneurship; *IE*, innovative entrepreneurship (high-tech, knowledge-based, high-growth)

Findings

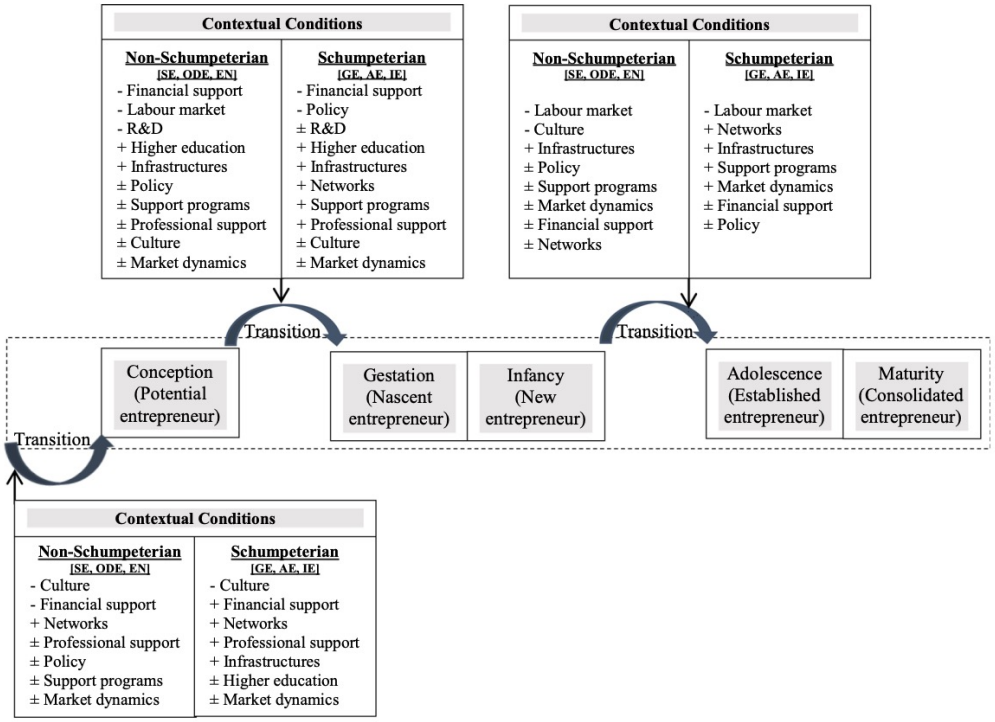
Table 4 Mapping environmental conditions for established/consolidated entrepreneurs

Economies	Environmental conditions	
	Positive effect	Negative effect
Developed economies	**Policies** **ODE**, **EN**, **IE**: Efficacy of judicial system **Supporting programs** **IE**: Intervention via incubators and accelerators **ODE**: Incentives for wealth accumulation and venture capital **Financial support** **IE**, **EN**: Public/private funds (venture capital), credit guarantee **Networks** **IE**: Networks for high-technology firms **ODE**: Family and co-ethnic networks **EN**: Press and media attention **Market dynamics** **IE**: The active role of innovative entrepreneurs in the ecosystem **IE**: Corporate actions instead of cooperative actions	**Policies** **IE**: Public centralisation: tax policy, labour policy **SE**: Increment of income taxes and labour taxation **Supporting programs** **ODE**: Ineffective support programs in deprived regions **Financial support** **ODE**, **EN**: Information asymmetry between bank and firms **Networks** **ODE**: Family and co-ethnic networks **Labour market** **SE**, **IE**: Wages, taxes, security conditions
Developing economies	**Networks** **ODE**: Creation of platforms of participation and collaboration between entrepreneurs in rural areas **NE**: Family networks **Financial support** **EN**: Access to informal capital (personal savings, families, friends) for entrepreneurs of small firms **Market dynamics** **EN**: Entrepreneurial orientation **EN**: Competitive intensity	**Financial support** **ODE**: No inclusion in the financial markets **EN**: Exorbitant interest rates, biased funding assistance of public institutions, lack of credit **Policies** **EN**: Lack of/inappropriate/weak policies for growth, taxation **Supporting programs** **EN**: Inadequate training opportunities **EN**: Inappropriate support programs **Market dynamics** **EN**: Large competitors, difficulties in obtaining materials, foreign currency restrictions, the declining purchasing power of consumers, low-trust environment **Culture** **EN**, **ODE**: Lack of legitimation, low social reputation, corruption, sociocultural norms
Multiple countries	**Policies** **EN**: High-quality institutions that facilitate exportation **EN**: Suitable interventionism/transparency **EN**: Creation of agencies, financial bodies with regulatory functions that make up the "local state development" **EN**: An improvement in the court system **Financial support** **EN**, **IE**: Transparency of the financial markets, access to funds, informal sources of funding **Support programs** **EN**, **IE**: Incubator organisations in new emerging markets for both entrepreneurs and innovative entrepreneurs **Networks** **EN**: Informal/business networks, active participation of high-growth firms with government **Market dynamics** **EN**: Export regulations	**Policies** **EN**: Inappropriate regulation of property rights and an inefficient judicial system **Support programs** **EN**: Weak business centre networks **Financial support** **ODE**: Limited access to credit by minority groups **EN**: The asymmetry between bank and firms **IE**: Centralised public and financial sector **Culture** **ODE**: The glass ceiling and discrimination against women entrepreneurs **Market dynamics** **EN**: Corruption and opportunistic behaviour in the market **ODE**: Weakness of institutions that support market

Source: the authors

SE, self-employed; *ODE*, owner demographic entrepreneurship (rural, youth, gender, immigrant, social); *EN*, entrepreneurship with lower innovative/technological outcomes; *AE*, academic entrepreneurship; *GE*, graduate entrepreneurship; *IE*, innovative entrepreneurship (high-tech, knowledge-based, high-growth)

Findings



Note 1: Non-Schumpeterian entrepreneurs (SE= Self-employed; ODE=Owner demographic entrepreneurship; EN= Entrepreneurship with lower innovative/technological outcomes) and Schumpeterian entrepreneurs (GE = Graduate entrepreneurship; AE= Academic entrepreneurship; IE= Innovative entrepreneurship (high-tech, knowledge-based, high-growth))
Note 2: (+) positive effect, (-) negative effect, (±) mixed effect identified in the literature
Note 3: Adopting the institutional economics approach: formal conditions (policy, programs, financial support, professional support, infrastructures, higher education, labour market, and R&D) and informal conditions (culture, perceptions)

Fig. 2 Entrepreneurial process influenced by contextual conditions.

Research opportunities

(a) Re-definition and improving the operationalization of entrepreneurship

(b) Evolutionary view of entrepreneurial dynamics including the role of time, space, context across the entrepreneurial process

(c) Diversity in contexts should be explored by considering direct, indirect, mediation and moderation effects of the multiple ecosystems' elements

(d) Extending the analysis in developing economies given the limited and non-conclusive evidence

(e) Take into account the different reports provided by multinational organizations/projects measuring entrepreneurship

Ongoing academic debates and opportunities linking the 4 Es

"Advantaged" groups

(a) Academic entrepreneurs

(b) Digital entrepreneurs

(c) Technological entrepreneurs

(d) High-growth entrepreneurs

(e) ….

Contexts characterized by
- institutional voids
- social movements
- democratic movements
- conflicts
- ….

"Disadvantaged" groups

(a) Female entrepreneurs

(b) Rural entrepreneurs

(c) Migrant entrepreneurs

(d) Ethic entrepreneurs

(e) Re-entrepreneurs

(f) ….

Contexts characterized by
- institutional voids
- social movements
- democratic movements
- conflicts
- ….

Mutualism in ecosystems of innovation and entrepreneurship: A bidirectional perspective on universities' linkages

Paola Rücker Schaeffer [a,*], Maribel Guerrero [b,c,*], Bruno Brandão Fischer [d,e,*]

[a] Department of Science and Technology Policy, University of Campinas, Rua Carlos Gomes, 250, Campinas, SP 13083-855, Brazil
[b] Facultad de Economía y Negocios, Universidad del Desarrollo, Avenida la Plaza 680, Las Condes, 7550000 Santiago, Chile
[c] Northumbria Centre for Innovation, Regional Transformation, and Entrepreneurship (iNCITE), Business and Law Faculty, Newcastle Business School, Sutherland Building, 2 Ellison Pl, Newcastle upon Tyne NE1 8ST, United Kingdom
[d] School of Applied Sciences, University of Campinas, Rua Pedro Zaccaria, 1300, Limeira, SP 13484-350, Brazil
[e] National Research University Higher School of Economics, Myasnitskaya Ulitsa, 20, Moscow 101000, Russian Federation

University-Industry joint undertakings with high societal impact: A micro-processes approach

Jason Roncancio-Marin [a], Nikolay Dentchev [a], Maribel Guerrero [b, c], Abel Díaz-González [a], Thomas Crispeels [a]

Intermediaries and social entrepreneurship identity: implications for business model innovation

Maribel Guerrero
Facultad de Economía y Negocios, Universidad del Desarrollo, Santiago, Chile and Northumbria Centre for Innovation, Regional Transformation and Entrepreneurship (iNCITE), Newcastle Business School, Northumbria University, Newcastle upon Tyne, UK
Carlos A. Santamaría-Velasco
Universidad de Guadalajara, Centro Universitario de Valles (Ameca), Guadalajara, México, and
Raj Mahto
Anderson School of Management, University of New Mexico, Albuquerque, New Mexico, USA

Dissecting the ecosystems' determinants of entrepreneurial re-entry after a business failure

Jorge Espinoza-Benavides
Universidad Católica de la Santisima Concepcion, Concepcion, Chile
Maribel Guerrero
Facultad de Economía y Negocios, Universidad del Desarrollo, Santiago, Chile and Northumbria Centre for Innovation Regional Transformation and Entrepreneurship (iNCITE), Newcastle Business School, Northumbria University, Newcastle, United Kingdom, and
David Díaz
Universidad de Chile, Santiago, Chile

Research Article

An inquiry into the linkages between university ecosystem and students' entrepreneurial intention and self-efficacy

Gustavo Hermínio Salati Marcondes de Moraes, Bruno Brandão Fischer, Maribel Guerrero, Anne Kathleen Lopes da Rocha & Paola Rücker Schaeffer

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