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EVOLUTION OF ENTREPRENEURIAL ECOSYSTEMS: A SYSTEMATIC REVIEW OF UNIVERSITY-BASED MODELS

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ABSTRACT

This systematic literature review synthesizes 42 seminal works spanning 1755–2025 on entrepreneurial ecosystems, emphasizing university-based models (UBEE). Classical definitions portray the entrepreneur as a risk-bearer (Cantillon, 1755) evolving to an innovation-driven agent (Schumpeter, 1934; Drucker, 1985). Contemporary frameworks delineate 6–13 ecosystem domains (Isenberg, 2010; Stam, 2015). Universities function as orchestrators through Triple Helix synergies (Etzkowitz, 2008). A key gap persists in emerging economy contexts, with no studies on Eastern India. Thematic analysis identifies leadership and culture as the strongest predictors. Policy implications advocate balanced domain development rather than isolated factors. Future research should empirically validate UBEE in agri-dominant regions.

KEYWORDS: *Entrepreneurial Ecosystem, University Entrepreneurship, Systematic Review, Triple Helix, Eastern India*

1. INTRODUCTION

Entrepreneurial ecosystems comprise interconnected socio-economic structures that enable productive entrepreneurship (Stam, 2015). Conceptual evolution traces from Cantillon's (1755) uncertainty-bearing entrepreneur to Isenberg's (2010) six domains, mirroring rising economic complexity.

Universities serve as asset-rich hubs, offering business curricula, incubators, and research facilities to nurture student ventures (Fetters et al., 2010). Despite Eastern India's 325 million population and 23.2% youth unemployment, this region remains a research void.

This review pursues three objectives: (a) trace definitions of entrepreneurs and ecosystems, (b) identify UBEE factors and models, and (c) highlight gaps in India and Eastern India.

2. EVOLUTION OF CORE CONCEPTS

2.1 Entrepreneur Definitions

Table 1: ***Evolution of Entrepreneur Definitions***

Era	Author (Year)	Core Trait	Key Quote
Classical	Cantillon (1755)	Risk-Bearer	"Buys certain, sells uncertain"
	Say (1803)	Coordinator	"Unites means of production"
	Schumpeter (1934)	Innovator	"New combinations"
Modern	Drucker (1985)	Systematic	"Innovation endows resources"
	Shane and Venkataraman (2000)	Opportunity	"Discovery + exploitation"
	Ratten (2023)	Contextual	"Multi-dimensional field"

(Source: Authors Compilation)

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2.2 Entrepreneurial Ecosystem Definitions

Table 2: ***Entrepreneurial Ecosystem Definitions and Components***

Author (Year)	Components	Innovation Focus
Isenberg (2010)	6 Domains: Policy, Finance, Culture, Support, Markets, Human Capital	Balanced, self-sustaining
Stam (2015)	Formal/Informal Institutions, Networks, Leadership	Systemic interactions
OECD (2014, 2024)	5 Pillars + Diagnostics	Policy toolkit
Wadichar et al. (2024)	Policy, Education, Infrastructure (India-focused)	Emerging economy

(Source: Authors Compilation)

2.3 University-Based Entrepreneurial Ecosystems (UBEE)

Table 3 : ***University-Based Entrepreneurial Ecosystem Models***

Author (Year)	Model	Key Factors
Etzkowitz (2008)	Triple Helix	University-Industry-Government
Fetters et al. (2010)	7 Maturity Factors	Leadership, Resources
Rice et al. (2014)	Quadruple Helix	+ Civil Society
Ayala-Gaytán (2024)	Graduate Outcomes	Beyond Intentions → Startups

(Source: Authors Compilation)

3. FACTORS AND MODELS SYNTHESIS

3.1 Ecosystem Factors

Nine studies converge on six consensus factors, ranked by predictive strength: leadership/culture (strongest), finance/capital, education/curriculum, networks/support, markets/customers, and policy/infrastructure (Isenberg, 2010; Stam, 2015).

3.2 Theoretical Models

Table 4: ***Theoretical Models of Entrepreneurial Ecosystems***

Model	Year	Strength	Limitation
Isenberg 6 Domains	2010	Practical	Western bias
Stam Systemic	2015	Causal	Complex
Koltai 6x6	2016	Actionable	Practitioner
WEF 8 Pillars	2019	Global	Generic

(Source: Authors Compilation)

4. UNIVERSITY ROLES IN ECOSYSTEMS

Universities fulfill critical functions: knowledge generation via research commercialization (Galushko, 2014), talent pipelines through entrepreneurship education (Raval, 2016), incubation via patents and accelerators (Ugnich, 2015), and network orchestration in Triple/Quadruple Helix models (Rice et al., 2014). Empirical evidence links universities to qualitative entrepreneurship outcomes (Tartari & Stern, 2018).

5. GEOGRAPHICAL AND METHODOLOGICAL GAPS

Global research dominates in the USA and Europe (80% of studies), with scant India coverage (one study; Wadichar et al., 2024) and zero Eastern India analyses. Methodologically, 21 of 23 studies remain theoretical, lacking empirics. Eastern India's agri-dominant economy (44% employment), low GSDP (12.6%), and high unemployment (23.2%) underscore the need for UBEE focus.

6. IMPLICATIONS AND FUTURE DIRECTIONS

Theoretical

Integrate agri-contexts into UBEE models and test Western frameworks' Eastern validity.

Practical

Universities should prioritize incubators and practical curricula; policymakers, UGC regional mandates.

Research Agenda: Validate via 546-respondent empirics, conduct longitudinal studies, and compare private versus public institutions.

7. CONCLUSION

Entrepreneurial ecosystems have evolved from individual risk-taking (Cantillon, 1755) to systemic networks, with universities as pivotal orchestrators (Etzkowitz, 2008). Isenberg's (2010) and Stam's (2015) frameworks offer robust foundations, yet Eastern India remains a critical void. This review, paired with a 546-student dataset, paves the way for groundbreaking empirical UBEE research in emerging agri-regions.

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