

Developing Entrepreneurial Talent for Competitive Start-Ups: A Systematic Literature Review

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ABSTRACT

Entrepreneurial talent is increasingly treated as a developable resource for start-up formation and competitiveness, but evidence remains fragmented across entrepreneurship education, founder competence, human capital, digital entrepreneurship, team composition, and entrepreneurial ecosystems. This systematic literature review examines how entrepreneurial talent is conceptualized, developed, activated, and associated with start-up outcomes. A PRISMA-guided, Scopus-bounded search of titles, abstracts, and keywords was completed on 30 June 2026. The search identified 346 records; after the publication-period, document-type, language, and scope criteria were applied, 125 English-language journal articles published from 2020 onward formed the formal review corpus. Quantitative, qualitative, mixed-method, conceptual, bibliometric, review, case-study, and experimental designs were synthesized narratively. Because these designs and outcomes were heterogeneous, quality was interpreted descriptively and claims were calibrated to evidence maturity rather than combined into a single cross-design score. Four domains emerged: entrepreneurial-talent conceptualization; education and talent development; start-up outcomes; and ecosystem, digital, and contextual enablement. The synthesis defines entrepreneurial talent at the individual level as a developable portfolio of knowledge, skills, abilities, experience, motivation, self-efficacy, resilience, and digital fluency, while distinguishing founding-team competence, venture-level dynamic capability, and ecosystem enablement as analytically separate but interacting levels. Evidence supports a stage-contingent pattern from opportunity recognition and experimentation to commercialization, survival, and scaling, but many studies remain cross-sectional or rely on intention and readiness measures. The review therefore proposes, rather than validates, a multilevel framework linking development, activation, team complementarity, resource orchestration, ecosystem conditions, and objective venture outcomes. Findings should be interpreted as Scopus-bounded and call for longitudinal, multilevel, and outcome-based research.

Keywords: Entrepreneurial talent, start-up development, entrepreneurial competencies, founder development, entrepreneurial ecosystem

INTRODUCTION

Entrepreneurship contributes to job creation, innovation, firm formation, and regional resilience when entrepreneurial ecosystems convert individual initiative into productive and scalable ventures (Alsos et al., 2023; Galvão et al., 2020). This role has become more salient amid graduate unemployment, digital transformation, and technological disruption. Universities, incubators, accelerators, and commercialization programmes are therefore expected not merely to stimulate entrepreneurial intention, but to develop founders who can recognize opportunities, mobilize resources, and build viable enterprises. Entrepreneurship education is most effective when analytical reasoning and technical knowledge are combined with mentoring and experiential learning (Aadland et al., 2023; Åstebro & Hoos, 2021). In academic and technology-intensive settings, accelerators and

scientist-oriented programmes further support the translation of expertise into venture (Hayter et al., 2025; Miliou & Ioannou, 2024; Treanor et al., 2021).

Within this review, entrepreneurial talent is defined at the individual level as a developable portfolio of entrepreneurial resources—knowledge, skills, abilities, prior experience, motivation and self-efficacy, resilience, and digital fluency—that can support entrepreneurial action. This boundary is intentionally narrower than treating talent as an umbrella for all determinants of entrepreneurship. Human capital refers mainly to accumulated education, knowledge, and experience (Ewens et al., 2024; Reese et al., 2021); competencies integrate knowledge, skills, abilities, and behavioural characteristics (Alsos et al., 2023; Galvão et al., 2020; Gonçalves et al., 2025); and capabilities refer to capacities for opportunity recognition, resource mobilization, and adaptation (Faroque et al., 2020; Yao et al., 2021). Founding-team competence, venture-level dynamic capability, and ecosystem support are treated as analytically distinct levels that condition how individual resources are combined and deployed, rather than as components of entrepreneurial talent itself.

Three gaps motivate this review. First, competence development does not consistently translate into entrepreneurial action, leaving an intention–action gap even after entrepreneurship education (Lackéus, 2020; McMahon et al., 2026). Second, programme effects vary with design, mentoring, practical exposure, participant readiness, and ecosystem conditions (Aadland et al., 2023; Åstebro & Hoos, 2021; Adeel et al., 2023). Third, evidence is fragmented across individual, team, venture, digital, educational, and ecosystem levels, while many studies rely on cross-sectional designs, student samples, self-reported measures, or proximal outcomes such as intention and readiness rather than venture launch, first sales, financing, survival, or growth (Ewens et al., 2024; Gonçalves et al., 2025; Hayter et al., 2025; Reese et al., 2021; Yao et al., 2021). These limitations make it difficult to distinguish what entrepreneurial talent is from the mechanisms and contexts through which it becomes economically productive.

Accordingly, the review addresses four questions: (1) How should entrepreneurial talent be conceptualized and bounded relative to human capital, skills, competencies, team competence, venture capability, and ecosystem enablement? (2) Which individual talent dimensions are associated with specific stages and outcomes of start-up development? (3) Through which developmental and activation mechanisms, and under what team, venture, and ecosystem conditions, are those resources mobilized? and (4) What theoretical and methodological limitations constrain causal and generalizable conclusions? The review contributes a clearer multilevel construct boundary, a stage-contingent synthesis of outcomes, and an integrative framework that distinguishes individual talent from team, venture, and ecosystem mechanisms.

METHODOLOGY

Search Strategy and Database Scope

A systematic literature review was conducted in accordance with PRISMA to make study identification, screening, and synthesis traceable. Scopus was retained as the sole formal database to provide a bounded and reproducible search across entrepreneurship, management, business, innovation, education, and the social sciences. Searches were applied to titles, abstracts, and keywords using: TITLE-ABS-KEY (("entrepreneurial talent" OR "entrepreneurial competenc*" OR "entrepreneurial capability" OR "entrepreneurial skill*") AND ("business start-up*" OR startup* OR "new venture*" OR "venture creation")). Truncation captured variants such as competency, competencies, start-up, startups, and startup. The search was completed on 30 June 2026 and the formal analytical window covered 2020 through the search date. The query was intentionally anchored in direct labels of entrepreneurial talent, competence, capability, and skills. Adjacent constructs such as human capital, self-efficacy, founding-team competence, digital capability, and resilience were coded when they appeared in retrieved articles but were not standalone search anchors. The review should therefore be interpreted as Scopus-bounded and construct-focused rather than an exhaustive multi-database mapping of all adjacent entrepreneurship terminology; database and search-term coverage are explicitly treated as limitations.

Selected pre-2020 peer-reviewed journal studies were retained only as foundational literature in the theoretical background to trace construct development. Non-journal publications and pre-2020 sources are excluded from

Tables 1–4, thematic prevalence statements, and outcome claims, and they are not counted among the 125 articles in the formal PRISMA corpus.

Eligibility Criteria

Formal inclusion required all of the following: (1) an English-language, peer-reviewed journal article indexed in Scopus; (2) publication from 2020 to 30 June 2026; (3) explicit examination of entrepreneurial talent, entrepreneurial competence, entrepreneurial capability, or entrepreneurial skills in relation to start-up, nascent, or new-venture formation or development; and (4) evidence on at least one developmental mechanism, venture-stage process, or outcome. Intention and readiness studies were eligible only when directly linked to entrepreneurial competence or capability and are treated as proximal rather than actual venture outcomes. Articles focused only on general employability, established mature firms, or entrepreneurship unrelated to venture formation or development were excluded. Quantitative, qualitative, mixed-method, conceptual, bibliometric, systematic-review, case-study, and experimental journal articles were eligible, but evidence type was considered when interpreting the strength of claims.

Screening and Selection

The Scopus search yielded 346 records. Before screening, the exported records were checked for duplicates by comparing article titles, DOI identifiers, and Scopus record IDs; no duplicate records were identified. The publication-date restriction was applied during record screening, consistent with Figure 1, and excluded 124 records published before 2020. The remaining 222 reports were sought for retrieval. Full texts were accessed through Scopus-linked DOI or publisher pages and institutional access, and no report was excluded solely because its full text was inaccessible. Applying the journal-article criterion retained 151 records; the English-language criterion retained 149; and full-text scope assessment excluded 24 reports, leaving 125 articles in the formal synthesis. Articles published online-first were eligible when they were available and indexed in Scopus on or before the search cut-off date of 30 June 2026. The narrative and PRISMA diagram use the same stage sequence and terminology.

Quality Appraisal, Data Extraction, and Synthesis

Title-and-abstract screening, full-text eligibility assessment, data extraction, thematic coding, and quality appraisal were initially conducted by the first author using the predefined eligibility and appraisal criteria. The second author subsequently reviewed the eligibility decisions, extracted evidence, coding, and appraisal judgements to verify consistency with the review protocol. Where differences in interpretation arose, the relevant records were re-examined against the predefined criteria and resolved through discussion between the two authors. No inter-reviewer agreement statistic is reported because independent duplicate screening and formal agreement coefficients were not part of the review procedure. Because the corpus spans fundamentally different research designs, the review does not present a single cross-design numerical quality score. Instead, appraisal is reported as a design-sensitive descriptive assessment. Observational quantitative studies were interpreted in relation to sampling, measurement, analytical transparency, and the distinction between objective and self-reported outcomes; qualitative and case studies were considered in relation to data-source transparency, analytic traceability, and contextual transferability; experimental or quasi-experimental studies were considered in relation to comparison design, intervention fidelity, attrition, and outcome measurement; and conceptual, bibliometric, and review studies were considered primarily for methodological transparency and theoretical coherence. In the synthesis, longitudinal or experimental evidence and objective venture outcomes receive greater interpretive weight for outcome-oriented claims; cross-sectional and self-reported studies support associational conclusions; student intention and readiness studies are treated as proximal evidence; and conceptual or emerging-technology evidence informs theory and research directions rather than effectiveness claims. The extraction matrix captured bibliographic information, context, population or sample, design, theoretical lens, focal talent construct, venture stage, outcome type, study limitations, and thematic coding. Coding combined categories derived from the review questions with iterative refinement as recurring mechanisms and outcomes emerged, and a study could contribute to more than one theme. Because populations,

interventions, effect measures, and outcomes were heterogeneous, meta-analysis was not undertaken and no pooled effect claim is made.

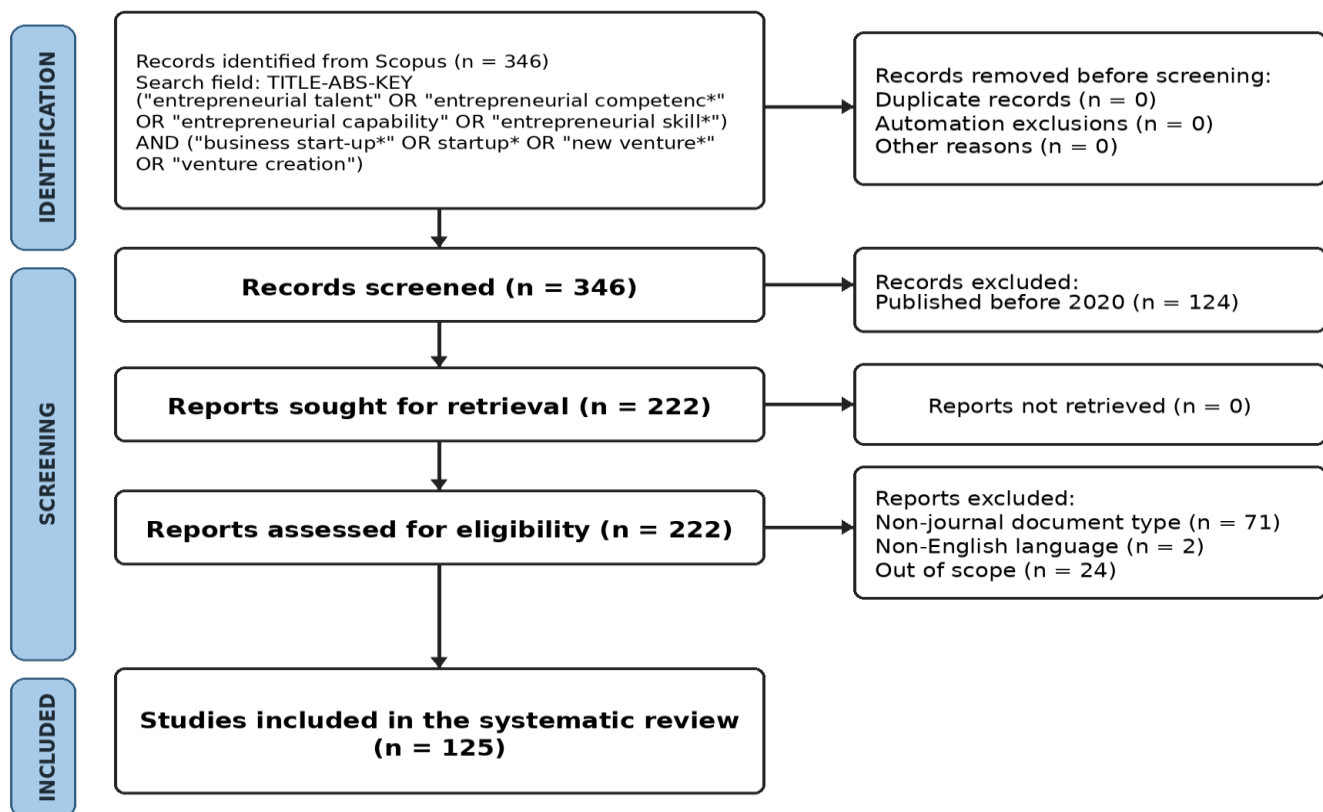


Figure 1: PRISMA flow diagram for study identification, screening, eligibility, and inclusion.

THEORETICAL BACKGROUND

Entrepreneurial talent requires a plural but disciplined theoretical foundation. Human capital theory explains the stock of education, prior knowledge, technical expertise, and accumulated experience available to an entrepreneur, whereas competency-based perspectives focus more proximally on actionable combinations of knowledge, skills, abilities, and behavioural characteristics. In the contemporary corpus, these resources are associated with opportunity recognition, start-up entry, commercialization, and venture performance, but their relevance varies by context and venture stage (Alsos et al., 2023; Gonçalves et al., 2025; Park et al., 2024). Foundational journal studies are used here only to trace the development of these ideas and are not treated as part of the 2020–2026 PRISMA evidence base (Omrane & Fayolle, 2011; Rasmussen et al., 2011).

Social cognitive theory explains the activation problem: resources do not automatically become action because self-efficacy, agency, observational learning, and motivation shape whether individuals attempt and persist in entrepreneurial tasks. Effectuation adds a decision logic for action under uncertainty, emphasizing means-driven experimentation, affordable loss, flexibility, and stakeholder commitments. These perspectives are complementary but not identical: social cognitive theory focuses on perceived capability and agency, whereas effectuation explains how action may proceed without complete prediction or planning.

Resource orchestration, the resource-based view, and dynamic-capability perspectives shift the unit of explanation from resource possession to resource deployment and reconfiguration. At the venture level, value depends on how human, social, financial, technological, and digital resources are assembled, combined, and adapted. Entrepreneurial ecosystem theory then explains the external conditions that enable or constrain those processes through universities, incubators, accelerators, investors, technology-transfer offices, policy systems, digital platforms, and regional networks (Kuckertz & Brem, 2023; Mazzoni et al., 2025; Meyer et al., 2020).

Conceptual Boundaries and Levels of Analysis

This review separates four analytical levels. Entrepreneurial talent is the individual-level portfolio of developable entrepreneurial resources. Founding-team competence concerns the distribution, complementarity, and coordination of those individual resources across team members. Venture-level capability refers to routines for orchestrating and reconfiguring resources as the venture develops. Ecosystem enablement comprises external institutional, financial, network, policy, and digital conditions. The levels interact dynamically, but they are not collapsed into one construct. This boundary preserves discriminant clarity while retaining the multilevel logic required to explain venture development.

The theories also make different predictions and should not be treated as a cumulative list. Human capital emphasizes resource accumulation, whereas dynamic capability emphasizes recombination; effectuation emphasizes control through available means under uncertainty, whereas planned capability development may rely on deliberate resource configuration; social cognitive theory foregrounds individual agency, while ecosystem theory foregrounds institutional opportunity and constraint. The synthesis therefore uses these perspectives as layered explanations across venture stages rather than as interchangeable theories. They do not resolve the innate-versus-acquired debate; instead, the evidence indicates that dispositions, learning, experience, team interaction, and context jointly shape whether individual potential becomes actionable.

Historically, the field has moved from trait- and intention-centred explanations toward experiential venture creation, founder capability, digital entrepreneurship, and ecosystem-enabled commercialization. The contemporary corpus particularly emphasizes action-based education, venture-stage adaptation, digital competence, and resource orchestration (Aadland et al., 2023; Lackéus, 2020; Yao et al., 2021; Giuggioli & Pellegrini, 2022; Hayter et al., 2025). This shift motivates the framework in Figure 2, which separates individual resources, developmental and activation mechanisms, venture processes, contextual enablement, and objective outcomes.

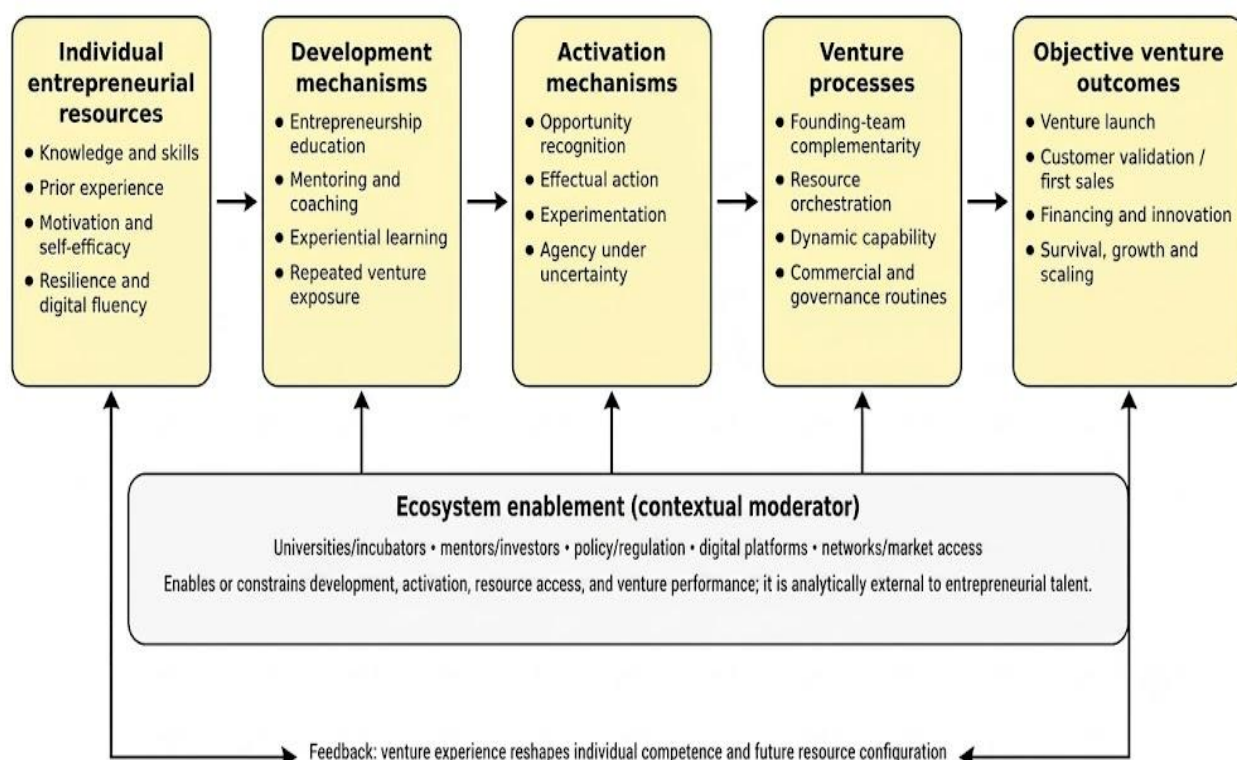


Figure 2: Multilevel framework of entrepreneurial talent development and venture outcomes.

REVIEW OF FINDINGS

The thematic synthesis is organized into four domains: entrepreneurial-talent conceptualization; education and talent development; start-up outcomes; and ecosystem, digital, and contextual support.

In the revised presentation, Tables 1–4 contain only peer-reviewed journal articles from the formal 2020–2026 Scopus corpus that are used directly in the narrative synthesis. Pre-2020 and non-journal sources are restricted to the theoretical background and do not support thematic counts or outcome claims. Because studies may contribute to more than one domain, the themes are interpretive categories rather than additive prevalence estimates.

Conceptualization of Entrepreneurial Talent and Competencies

The first theme shows that entrepreneurial talent remains conceptually heterogeneous even within contemporary research. Formal-corpus studies operationalize it through entrepreneurial and managerial skills, self-efficacy, IT and opportunity competence, networking capability, prior knowledge, human capital, resilience, and KSAO-type configurations (Tsolakidis et al., 2020; Hanchi & Kerzazi, 2020; Okolie et al., 2021; Yao et al., 2021; Park et al., 2024; Gonçalves et al., 2025).

The synthesis does not treat these constructs as synonymous. Instead, it uses them to identify an individual resource portfolio while separating team-level competence, venture-level capability, and ecosystem conditions.

Table 1: Conceptualization of Entrepreneurial Talent and Competencies

Note for Tables 1–4: These tables report only peer-reviewed journal articles from the formal 2020–2026 Scopus corpus that are cited in the thematic synthesis. Foundational pre-2020 and non-journal contextual sources are restricted to the theoretical background and are excluded from thematic counts and outcome claims.

Ref. ID / Citation	Research Context	Methodology / Design	Key Findings Relevant to Theme 1	Strengths / Limitations
(Tsolakidis et al., 2020)	Greek start-up...	Survey; hierarchical regression	Managerial and entrepreneurial skills are predictors...	Links skill types...
(Hanchi & Kerzazi, 2020)	Start-up innovation...	Semi-structured literature review...	Conceptualizes start-up innovation capability as a...	Strong framework-building value...
(Okolie et al., 2021)	Undergraduate students...	Survey of 1,191...	Uses 13 entrepreneurial competencies; entrepreneurship education...	Large sample; mixed...
(Yao et al., 2021)	Digital venture...	Hierarchical linear regression...	Networking capabilities, IT capabilities, and prior...	Relevant to digital...
(Wei, 2021)	New entrepreneurial...	Questionnaire survey; descriptive...	New entrepreneurial talent is linked to...	Directly uses “entrepreneurial...
(Reese et al., 2021)	US new...	Multisource data using...	Introduces “sharedness” of competencies in founding...	Innovative measurement of...
(Park et al., 2024)	South Korean...	SEM; 638 government-supported...	IT competency and opportunity competency enhance...	Large start-up sample...
(Nag et al., 2024)	Grassroots entrepreneurs...	Bibliometric review; Scopus...	Synthesizes core competencies for grassroots entrepreneurs...	Strong review perspective...

(Gonçalves et al., 2025)	Start-up management	Bibliometric-systematic review; 72...	Frames founder through capability KSAO: knowledge...	Comprehensive construct synthesis...
(Tibaingana et al., 2024)	Youth sustainable...	Cross-sectional survey; SPSS...	Not all skill dimensions matter equally...	Useful dimensional comparison...

Contemporary evidence shifts the emphasis from fixed endowment toward developable and deployable resources. Managerial and entrepreneurial skills, opportunity competence, networking and IT capability, self-efficacy, prior knowledge, and innovation capability are repeatedly associated with entrepreneurial action or venture development, although the underlying designs are often cross-sectional or self-reported (Tsolakidis et al., 2020; Hanchi & Kerzazi, 2020; Okolie et al., 2021; Yao et al., 2021; Park et al., 2024). These results support an associational, not universal causal, interpretation: the value of a capability depends on when and where it is mobilized.

Team-level evidence is analytically distinct from individual entrepreneurial talent. Reese et al. (2021), for example, show that the distribution and sharedness of competencies across founders matter for performance, which supports complementarity rather than simple accumulation. Digital and sustainability-oriented settings also broaden the relevant individual portfolio toward IT capability, opportunity competence, resilience, uncertainty management, and contextual adaptation (Yao et al., 2021; Park et al., 2024; Nag et al., 2024; Tibaingana et al., 2024). Overall, entrepreneurial talent is best interpreted as an individual resource portfolio whose usefulness is contingent on venture stage and whose deployment is conditioned by team and context.

Entrepreneurship Education, Training, and Talent Development

The second theme concerns how entrepreneurial talent is developed. Formal-corpus evidence indicates a shift from classroom-only provision toward experiential, challenge-based, venture-creation, coaching, mentoring, and technology-supported approaches. Hackathons and action-based models emphasize experimentation and self-efficacy (Szymanska et al., 2020; Lackéus, 2020), while structured entrepreneurship education develops selected competencies rather than all dimensions uniformly (Okolie et al., 2021). More recent programmes extend this logic to biomedical translation, social innovation, vocational coaching, and postgraduate contexts (Schweickart et al., 2023; Feijóo-Quintas et al., 2024; Wijaya et al., 2025; Chagi & Ncanywa, 2026).

Table 2: Entrepreneurship Education, Training, and Talent Development

Ref. ID / Citation	Educational Context / Population	Pedagogical Mechanism / Intervention	Competency or Talent Focus	Main Findings Relevant to Theme 2	Critical Notes
(Szymanska et al., 2020)	Hackathon participants	Hackathon pedagogy; pre/post...	Skills, self-efficacy, entrepreneurial...	Hackathons can improve entrepreneurial skillsets and...	Short-term evaluation; limited...
(Lackéus, 2020)	Experiential entrepreneurship...	Comparison of IACP...	Value creation, action...	Experiential models differ in how they...	Strong comparative framework...
(Okolie et al., 2021)	1,191 final-year...	Compulsory entrepreneurship education	13 entrepreneurial competencies	EE improved five competencies, including opportunity...	Large sample; mixed...
(Gaspar & Mota, 2021)	Final-year university...	Entrepreneurship education improvement...	Entrepreneurial skills, perceived...	Students refusing entrepreneurship trust their skills...	Useful counter-perspective; intention-focused.

(Souto & Rodríguez-López, 2021)	Bachelor thesis...	Business plan as...	Competency training, venture...	Business-plan-based thesis work can function as...	Focused on educational...
(Msosa, 2022)	Higher education...	Survey based on...	Attitude, perceived behavioral...	Entrepreneurial intention is shaped by self-efficacy...	Intention-based rather than...
(Bendickson et al., 2023)	STEAM undergraduate...	Engaged learning exercise...	Analytical thinking, decision-making...	Multidisciplinary students can learn to distinguish...	Pedagogical innovation; outcome...
(Adeel et al., 2023)	Higher education...	Multi-group analysis	Entrepreneurial skills, alertness...	Entrepreneurship education affects skills, alertness, opportunity...	Stronger behavioral orientation...
(Schweickart et al., 2023)	Biomedical entrepreneurship...	BEEP programme for...	Research translation, commercialization...	Scientist-targeted programmes can support translation of...	Sector-specific; time-to-product challenges...
(Tibaingana et al., 2024)	Ugandan youth...	Government-supported business skills...	Management, technical, entrepreneurial...	Management, technical, and personal maturity skills...	Developing-economy context; cross-sectional...
(Feijóo-Quintas et al., 2024)	Senior Innovation...	Challenge-based learning, design...	Motivation, perseverance, opportunity...	HEIs can develop social innovation and...	Small sample; specialized...
(Wijaya et al., 2025)	Vocational higher...	Business coaching, entrepreneurial...	Entrepreneurial competencies and...	Coaching and experience strengthen entrepreneurial mindset...	Vocational focus; longer-term...
(Chagi & Ncanywa, 2026)	Postgraduate students...	Qualitative case study...	Experiential learning, mentorship...	Postgraduate programmes need practical resources, mentorship...	Rich qualitative evidence...
(Yordudom et al., 2026)	Generation Z...	PLS-SEM; dynamic capabilities...	AI literacy, creativity...	AI literacy and dynamic capabilities contribute...	Readiness outcome; not...
(Christou et al., 2026)	Engineering sustainability...	GreenComp, EntreComp, TPB...	Sustainability entrepreneurship, intention...	Engineering entrepreneurship education can integrate sustainability...	Emerging sustainability focus...

Higher education remains the dominant setting, but the formal evidence spans engineering, business, biomedical science, vocational education, social innovation, and sustainability-oriented learning. Across these contexts, experiential learning is associated with opportunity recognition, self-efficacy, customer discovery, analytical judgement, financial planning, and pitching, but these are not equivalent outcome levels. Knowledge and competency gains should be distinguished from intention, entrepreneurial action, and actual venture performance (Lackeus, 2020; Szymanska et al., 2020; Souto & Rodríguez-López, 2021; Bendickson et al., 2023).

Programme effects are mixed. Some studies report positive associations between entrepreneurship education and skills, alertness, self-efficacy, or entrepreneurial behaviour, while others show that confidence, perceived barriers, programme design, and contextual support condition these relationships (Adeel et al., 2023; Okolie et al., 2021; Msosa, 2022). Sector-specific programmes may support research translation or social innovation, but evidence based on student perceptions or short-term outcomes should not be interpreted as proof of venture survival or scaling (Schweickart et al., 2023; Feijóo-Quintas et al., 2024).

AI- and technology-related evidence is emerging and should be interpreted by maturity. Formal empirical studies increasingly examine AI literacy, digital capability, creativity, and entrepreneurial readiness, but many outcomes remain proximal rather than objective venture measures (Yordudom et al., 2026). Prototype, curriculum-roadmap, conference, and teaching-case publications are treated as contextual rather than formal evidence in the revised synthesis. Accordingly, the review identifies AI-enabled entrepreneurship education as a promising direction, not an established effectiveness claim.

Entrepreneurial Competencies and Start-Up Outcomes

The third theme examines the relationship between entrepreneurial resources and start-up outcomes. To avoid combining unlike endpoints, the synthesis distinguishes four outcome levels: (1) cognitive and proximal outcomes such as self-efficacy, intention, and readiness; (2) entrepreneurial action and venture launch; (3) market and resource outcomes such as first sales, financing, innovation, and internationalization; and (4) durability outcomes such as survival, revenue growth, scaling, and longer-term performance. Contemporary studies link managerial, technical, networking, digital, opportunity, and strategic competencies to different parts of this sequence, but the strength of inference varies by design (Tsolakidis et al., 2020; Faroque et al., 2020; Reese et al., 2021; Park et al., 2024; Botella-Carrubi et al., 2024; Gonçalves et al., 2025).

Table 3: Entrepreneurial Competencies and Start-Up Outcomes

Ref. ID / Citation	Sample / Case / Population	Variables / Concepts Examined	Outcomes / Key Results	Critical Notes
(Tsolakidis et al., 2020)	Greek start-up...	Managerial skills, entrepreneurial...	Managerial and entrepreneurial skills predicted entrepreneurial...	Cross-sectional design; innovation...
(Kolade et al., 2020)	331 undergraduate...	Entrepreneurial training, skills...	Skills mediated training-performance and moderated turbulence-performance...	Important crisis-context evidence...
(Xia et al., 2020)	140 Chinese...	Effectuation, organizational entrepreneurial...	Organizational entrepreneurial capability mediated effectuation-performance; passion...	Strong moderated mediation...
(Faroque et al., 2020)	354 Bangladeshi...	Entrepreneurial capability, export...	Capability and market orientation supported international...	International entrepreneurship focus...
(Fadzil et al., 2020)	Malaysian e-commerce...	Cognition, entrepreneurial competencies...	Entrepreneurial cognition and competencies supported successful...	Relevant to digital...
(Yao et al., 2021)	Digital venture...	Networking capabilities, IT...	Networking and IT capabilities supported generation...	Idea-generation outcome; not...
(Shahzad et al., 2021)	416 Pakistani...	Skills, risk propensity...	Skills, risk propensity, and innovativeness mediated...	Intention-based; student sample.
(Reese et al., 2021)	1,863 US...	Shared entrepreneurial competencies...	Shared entrepreneurial competencies improved performance, while...	Innovative LinkedIn-based skill...
(Kim, 2023)	Senior entrepreneurs	Entrepreneurial competency, human...	Human capital mediated the effect of...	Addresses senior entrepreneurship...
(Darmanto et al., 2023)	184 digital...	Digital competence, career...	Digital competence and career maturity mediated...	Strong local digital...
(Tibaingana et al., 2024)	254 Ugandan...	Management, technical, entrepreneurial...	Management, technical, and personal maturity skills...	Developing-economy evidence; cross-sectional.

(Park et al., 2024)	638 South...	IT competency, opportunity...	IT and opportunity competencies enhanced competitive...	Large sample; satisfaction...
(Nag et al., 2024)	Grassroots entrepreneurship...	Competencies for initiation...	Competencies support start-up initiation, growth, and...	Review-based; grassroots context...
(Adeniyi et al., 2024)	289 Nigerian...	Innovativeness, proactiveness, risk-taking...	Innovativeness and proactiveness predicted readiness; risk-taking...	Readiness outcome; student...
(Gonçalves et al., 2025)	Start-up management...	KSAO, strategy, resilience...	KSAO variables shaped strategic decisions, resilience...	Comprehensive review; heterogeneous...
(Botella-Carrubi et al., 2024)	Spanish start-ups	Entrepreneurial skills, proactivity...	Skills configurations influenced sales growth and...	Configurational method; contextual...
(Shojaei et al., 2025)	Iranian start-ups...	Obstacles, entrepreneurial skills...	Lack of entrepreneurial skills was a...	Useful decision framework...
(Lei, 2026)	Start-up competency...	Competency clusters, survival-driven...	Different competency clusters are required for...	Conceptual matching model...
(Rizky et al., 2026)	360 SME...	Entrepreneurial competencies, motivation...	Competencies, motivation, and social capital influenced...	SME sample extends...
(Elfghi et al., 2026)	322 Turkish...	Improvisation, self-efficacy, learning...	Improvisation, self-efficacy, and learning orientation influenced...	Founder-level evidence; cross-sectional.
(Ny Avotra et al., 2026)	750 Malaysian...	Entrepreneurial competencies, proactive...	Competencies and proactive sales orientation moderated...	Large SME sample...

The evidence does not support a universal competence–performance equation. Opportunity recognition and self-efficacy are more salient in pre-launch and launch phases; commercial, financial, technical, and networking capabilities become more relevant around market entry; and leadership, strategic adaptation, digital integration, and resource orchestration gain importance during survival and growth. Team complementarity can broaden problem solving and market coverage, whereas redundant competence may offer diminishing value. Because much of the evidence is cross-sectional, these patterns are interpreted as stage-contingent associations rather than deterministic causal pathways.

A persistent limitation is outcome heterogeneity. Intention, perceived readiness, idea generation, satisfaction, and self-reported success are frequently reported alongside objective indicators such as launch, first sales, financing, revenue, survival, and internationalization. The revised synthesis therefore does not use a single generic “performance” category. Table 5 translates the stage-contingent pattern into an outcome hierarchy and identifies objective milestones that can be used in future evaluation.

Table 5: Stage-specific entrepreneurial talent development and evaluation map

Venture stage	Priority entrepreneurial resources / processes	Outcome interpretation	Suggested objective milestone
Pre-launch / emergence	Opportunity recognition; self-efficacy; experimentation; initial team formation	Intention and readiness are proximal indicators, not venture outcomes	Validated problem/opportunity; prototype or testable value proposition; defined founder roles
Launch	Opportunity action; customer discovery; technical and networking capability	Action should be distinguished from stated intention	Venture launch/registration; customer interviews; pilot or first transaction

Venture stage	Priority entrepreneurial resources / processes	Outcome interpretation	Suggested objective milestone
Market entry	Commercial, financial, technical and regulatory capability; resource mobilization	Market and resource outcomes provide stronger evidence than perceptions	Customer validation; first sales; investment readiness; initial financing
Early survival	Resource discipline; resilience; networking; adaptation; team coordination	Durability requires repeated market evidence	Repeat customers; revenue continuity; financing runway; survival over a defined period
Growth / scaling	Leadership; governance; digital integration; dynamic capability; resource orchestration	Growth outcomes are distinct from launch and early survival	Revenue and employee growth; innovation outputs; internationalization; scaling milestones

Note: The table is an interpretive synthesis of the reviewed evidence and is intended to separate proximal indicators from objective venture outcomes; it does not imply a deterministic sequence.

Ecosystem, Digital, and Contextual Support for Start-Up Development

The fourth theme treats ecosystem support as contextual enablement rather than as part of entrepreneurial talent. Universities, incubators, accelerators, technology-transfer offices, mentors, investors, policy actors, digital platforms, and networks can provide legitimacy, knowledge, finance, market access, and commercialization support. Formal-corpus studies indicate that the usefulness of such support depends on founder capability, sector, institutional coordination, and venture stage (Shekhar & Bodnar, 2020; Yao et al., 2021; Hahn et al., 2022; Dabić et al., 2023; Hayter et al., 2025).

Table 4: Ecosystem, Digital, and Contextual Support for Start-Up Development

Ref. ID / Citation	Discipline / Domain	Methods / Tools Used	Key Findings Relevant to Theme 4	Future Directions / Implications
(Chagi & Nanywa, 2026)	Postgraduate entrepreneurship...	Qualitative case study...	Entrepreneurship programmes lack practical resources, mentorship...	Build stronger university-based...
(Dabić et al., 2023)	Serial entrepreneurship	Literature review; multiple...	Identifies entrepreneurial ecosystem, technological development, resources...	Develop deeper ecosystem-based...
(Dam & Pillai, 2021)	Social entrepreneurship...	Case study linked...	Facebook-based community enabled women and indigenous...	Examine measurable performance...
(Hogeboom et al., 2025)	Sustainable start-up...	Action research using...	Entrepreneurs need facilitated opportunities and minimum...	Integrate sustainability-as-flourishing methods...
(Yao et al., 2021)	Digital entrepreneurship	Quantitative study; hierarchical...	Networking capabilities, IT and prior...	Examine how digital...

(Mumi et al., 2025)	AI and...	Bibliometric analysis of...	AI entrepreneurship research clusters around venture...	Explore underdeveloped AI...
(Shojaei et al., 2025)	Start-ups in...	Rough-BWM and rough-WASPAS...	Lack of entrepreneurial skills and weak...	Use uncertainty-based decision...
(Feijóo-Quintas et al., 2024)	Social innovation...	Challenge-based learning, design...	HEIs can act as strategic centers...	Expand entrepreneurial approaches...
(Kanayo et al., 2021)	Entrepreneurship success...	Two-way probit approach	Contextual factors influence entrepreneurship success and...	Improve policy sensitivity...
(Hahn et al., 2022)	Entrepreneurial university	Broader impact analysis	Entrepreneurial universities affect more than new...	Move beyond start-up...
(Shekhar & Bodnar, 2020)	University entrepreneurial...	Mediation analysis	University entrepreneurial ecosystem mediates students' entrepreneurial...	Examine ecosystem differences...
(Nespoli et al., 2022)	Crowdfunding and...	Case study; entrepreneurial...	Crowdfunding provides financial and non-financial value...	Study crowdfunding as...
(Fox et al., 2025)	Africa–Europe transnational...	Programme analysis	Transnational education programmes expand engagement across...	Strengthen cross-border entrepreneurial...
(Hayter et al., 2025)	Scientist entrepreneurship...	Early-stage entrepreneurship development...	Lean entrepreneurship programmes can support scientists...	Evaluate how research-based...

Digital platforms and AI can extend ecosystem capacity through online venture creation, crowdfunding, market reach, data-informed support, and access to distributed networks. The evidence, however, is uneven in maturity: bibliometric and conceptual studies identify emerging directions, whereas relatively fewer studies connect digital or AI-enabled ecosystem mechanisms to objective start-up outcomes (Mumi et al., 2025). Sector-specific evidence also indicates that biomedical, technology-intensive, social, and sustainability-oriented ventures require different combinations of knowledge, capital, regulation, infrastructure, and stakeholder engagement.

Contextual access is also uneven. Gender, socioeconomic background, geography, institutional affiliation, and digital infrastructure may shape access to mentoring, finance, networks, and legitimacy-building opportunities. The current corpus does not provide a complete country-coded distribution that would justify quantitative geographic prevalence claims, so transferability across national and ecosystem settings should be interpreted cautiously. Future reviews should map region, national-income level, sector, gender composition, and ecosystem maturity systematically rather than infer generalizability from heterogeneous contexts.

DISCUSSION

This review supports a more bounded definition of entrepreneurial talent. Entrepreneurial talent is an individual-level portfolio of developable resources, while founding-team competence, venture-level dynamic capability, and ecosystem enablement are separate levels that affect how those resources are mobilized. This distinction clarifies the review's central contribution: start-up outcomes cannot be explained by founder traits alone, but neither should team and ecosystem conditions be folded into the talent construct itself. Figure 2 represents these levels as dynamically connected rather than conceptually interchangeable.

The strongest convergence concerns experiential development, but the evidence is more cautious than a simple claim that programmes “improve” entrepreneurship. Mentoring, coaching, simulations, venture-creation activities, and challenge-based learning are associated with competence, self-efficacy, and action-oriented learning, yet the durability of these effects depends on programme quality, participant readiness, sectoral relevance, practical exposure, and access to finance, networks, markets, and institutional support. The intention–action gap is therefore best understood as an activation problem, while actual venture outcomes require evidence beyond student intention or perceived readiness.

The stage-specific synthesis offers a practical explanation for the absence of a universal founder profile. Pre-launch development emphasizes opportunity recognition, self-efficacy, experimentation, and team formation; market entry increases the importance of commercial, financial, technical, and networking capabilities; survival requires resource discipline, resilience, and contextual adaptation; and growth increases demands for leadership, governance, digital integration, and resource orchestration. These patterns are associations across heterogeneous studies, not deterministic sequences.

Theoretical integration also requires acknowledging differences among perspectives. Human capital explains resource accumulation; social cognitive theory explains perceived capability and agency; effectuation explains action under uncertainty; resource orchestration and dynamic capability explain deployment and reconfiguration; and ecosystem theory explains institutional opportunity and constraint. These perspectives overlap but do not make identical predictions. The framework therefore uses them to explain different mechanisms and levels, rather than treating theoretical accumulation as evidence of convergence.

Practical Implications: A Stage-Based Founder-Development Sequence

For educators, incubators, and policymakers, the synthesis supports stage-specific intervention rather than standardized training. Programmes can begin with diagnostic assessment of individual resource gaps, move to opportunity testing and customer validation, then add commercial and financial capability, team-gap analysis, digital capability, mentoring, and ecosystem referral as the venture progresses. Evaluation should prioritize objective milestones where feasible—venture launch, customer validation, first sales, investment readiness, revenue continuity, survival, employee growth, innovation outputs, internationalization, and scaling—while treating intention and readiness as proximal indicators rather than final outcomes.

Limitations

This review is bounded by a single database (Scopus), a focused search string, an English-language restriction, and a 2020–30 June 2026 formal publication window. The query did not use every adjacent label identified during synthesis, such as founder human capital, entrepreneurial self-efficacy, founding-team competence, or scale-up, so studies framed exclusively through those terms may have been missed. The contemporary window improves relevance to digital and AI-enabled entrepreneurship but limits historical coverage; foundational pre-2020 sources are therefore used only for theory, not as formal evidence. These decisions introduce database, language, publication-period, and search-term bias.

The corpus is also methodologically heterogeneous. Many studies are cross-sectional, self-reported, student-based, or focused on intention and readiness, which limits causal inference about venture launch, survival, or growth. The review uses narrative rather than meta-analytic synthesis and does not claim a common cross-design

risk-of-bias score; publication bias cannot be quantified from the available evidence and positive findings may be overrepresented. The current evidence base also does not support a complete quantitative geographic profile across all formal records, so generalization across national, sectoral, and ecosystem settings should remain cautious. Future updates should use broader database coverage, expanded search terms, design-specific appraisal, independent dual-reviewer screening and appraisal where feasible, and a complete supplementary evidence matrix.

CONCLUSION

Entrepreneurial talent contributes to competitive start-up development when individual entrepreneurial resources are developed, activated, and matched to venture-stage demands. The review does not identify one universal founder profile. Instead, it shows a contingent pattern in which opportunity recognition, self-efficacy, experimentation, commercial and financial capability, networking, digital fluency, resilience, and strategic judgement become more or less salient as ventures move from emergence to market entry, survival, and growth.

The principal conceptual contribution is multilevel separation. Entrepreneurial talent is located at the individual level; team complementarity concerns how individual portfolios are distributed and coordinated; venture-level dynamic capability concerns resource orchestration and reconfiguration; and ecosystem enablement provides external opportunities and constraints. This distinction makes the proposed framework more precise and prevents external conditions from being defined as talent.

For practice, founder-development programmes should use stage-specific diagnostics and measurable milestones rather than relying on standardized classroom provision or intention alone. For research, the Scopus-bounded and heterogeneous evidence base requires cautious interpretation. Longitudinal, multilevel, and objective outcome-based designs are needed to determine when entrepreneurial resources contribute to venture launch, first sales, financing, survival, innovation, internationalization, and scaling.

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