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The Rise of the One-Person Startup in India: Examining How Generative AI Reduces Entrepreneurial Resource and Capability Barriers

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Abstract—The emergence of generative artificial intelligence (GenAI) is changing how individuals identify opportunities, develop products, communicate with customers and organize new ventures. Conventional startups often depend on teams with complementary skills in market research, content creation, design, software development, marketing and administration. GenAI can provide on-demand assistance across many of these functions, potentially allowing a single entrepreneur to operate with fewer human and financial resources. Recent reviews suggest that GenAI can automate tasks, augment skills and support innovation, while its benefits depend strongly on task characteristics, user expertise and human oversight [1], [4]. This paper examines the rise of the one-person startup and develops a framework for understanding how GenAI can strengthen entrepreneurial capability, reduce perceived resource barriers and improve operational efficiency. The proposed study connects GenAI adoption with entrepreneurial capability, perceived resource reduction, productivity and entrepreneurial intention. The paper argues that GenAI should be viewed not merely as an automation technology but as a capability multiplier that can expand the range of activities an individual entrepreneur can undertake [2], [5]. At the same time, limitations relating to accuracy, privacy, intellectual property, overdependence and human judgment must be considered [8], [9]. The framework provides a basis for future empirical investigation of AI-enabled solo entrepreneurship, particularly in the Indian context.

Index Terms—Generative Artificial Intelligence, Solo Entrepreneurship, One-Person Startup, Entrepreneurial Capability, AI Adoption, Digital Entrepreneurship

I. INTRODUCTION

Entrepreneurship has traditionally involved the mobilization of financial, human, technological and informational resources. An individual starting a business commonly requires capabilities in market research, business planning, marketing, design, software development, customer communication and data analysis. When these capabilities are not available within the founder's skill set, the entrepreneur may need employees, co-founders or external service providers. This creates both financial and coordination costs: the founder must either acquire skills through training or purchase access to specialized labor. From a resource-based perspective, the ability to combine valuable and difficult-to-replicate resources has traditionally influenced competitive advantage. GenAI introduces a different mechanism because sophisticated digital capabilities can increasingly be accessed as services rather than owned as permanent organizational resources [2].

Generative artificial intelligence is changing this resource equation. Modern AI systems can generate text, images, computer code, summaries, analytical suggestions and other digital outputs. Consequently, one entrepreneur can obtain on-demand assistance across multiple business functions. Evidence from workplace experiments also indicates that AI assistance can raise productivity, particularly for less experienced users, although effects are heterogeneous [4]. In entrepreneurship, the implication is not that AI independently performs entrepreneurship; rather, it can extend the entrepreneur's ability to perform tasks, evaluate alternatives and move from an idea toward implementation. Recent entrepreneurship research similarly emphasizes AI-enabled capability enhancement, resource transformation and lower experimentation costs [2], [5].

The resulting model can be described as the one-person startup: a venture in which one human entrepreneur remains the principal decision maker and operator while a collection of AI tools provides digital assistance. This model raises an important research question: can generative AI allow an individual to perform a wider set of entrepreneurial functions that previously required a small team?

The issue is particularly relevant in India, where the startup ecosystem has expanded substantially and digital infrastructure has made online venture creation more accessible. Startup India reported more than 157,000 startup-recognition certificates issued by December 2024, illustrating the scale of the broader entrepreneurial ecosystem, although these figures include approved, cancelled and expired certificates [11]. Recent Indian scholarship has also begun to examine how GenAI is influencing entrepreneurial innovation and policy [12]. Understanding whether GenAI actually reduces barriers to entry, rather than simply generating enthusiasm about AI, therefore deserves systematic study. The key distinction is between perceived resource reduction and actual resource elimination: AI may lower the time and skill needed for some activities while leaving financing, compliance, customer acquisition and accountability largely unchanged.

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II. LITERATURE REVIEW

A. AI and Entrepreneurship

Artificial intelligence has increasingly been examined as a resource for opportunity recognition, decision support, automation and innovation. Earlier AI applications were often designed for specific business tasks. Generative AI differs because a general-purpose model can support many activities through natural-language interaction. This flexibility makes it particularly relevant to entrepreneurs who cannot afford specialized teams. OECD evidence synthesizing recent experiments describes GenAI as capable of automating tasks, augmenting skills and transforming business processes, while stressing that effectiveness varies by task and user experience [1]. This supports the paper's focus on capability rather than simple automation.

B. Generative AI and Opportunity Recognition

Opportunity recognition is a central entrepreneurial activity. Generative AI can assist entrepreneurs in brainstorming alternatives, summarizing market information, identifying customer problems and exploring possible business models. Recent work shows that GenAI can reduce information asymmetry during early-stage entrepreneurial exploration, particularly when users provide domain context and apply effective prompting and verification [5]. Research on ChatGPT adoption also links AI use with opportunity recognition, digital entrepreneurial knowledge, self-efficacy and entrepreneurial intentions [3]. These findings suggest that GenAI may influence entrepreneurship indirectly by strengthening the cognitive and informational conditions under which opportunities are evaluated.

C. AI-Enabled Solo Entrepreneurship

The concept of AI-enabled individual entrepreneurship considers AI as a resource that can augment an individual's capabilities. Ganuthula's AI-enabled individual entrepreneurship theory explicitly connects AI with capability enhancement, resource transformation and risk reduction for individual entrepreneurs [2]. Other recent research identifies GenAI applications across information gathering, problem solving and entrepreneurial decision-making [5]. However, the literature is still developing, particularly regarding the combined effect of multiple AI capabilities across the complete venture-creation process. There is therefore value in examining the entrepreneur as the integrating layer between several AI functions rather than evaluating one tool or one task in isolation.

D. One-Person Startup Model

A one-person startup should not be understood simply as a business with no employees. It represents an operating model in which digital tools, platforms, automation and AI reduce the amount of routine human labor needed to execute core functions. The entrepreneur remains responsible for judgment, accountability, customer relationships and strategic direction, while AI assists with selected tasks.

III. RESEARCH GAP

Existing research has considered AI adoption, entrepreneurial intention, opportunity recognition and individual entrepreneurship from different perspectives. Nevertheless, there is scope for a more integrated examination of how GenAI combines knowledge support, content generation, automation and decision assistance to expand the functional capacity of one individual. In particular, empirical evidence on whether GenAI reduces perceived resource and skill barriers for aspiring and existing solo entrepreneurs remains limited. The present study addresses this gap by connecting GenAI adoption with entrepreneurial capability, perceived resource reduction, productivity and entrepreneurial intention.

IV. RESEARCH OBJECTIVES

- To identify the major entrepreneurial activities in which GenAI can support solo entrepreneurs.
- To examine the relationship between GenAI adoption and entrepreneurial capability.
- To determine whether GenAI reduces perceived resource and skill barriers to venture creation.
- To examine the perceived effect of GenAI on entrepreneurial productivity and decision-making.
- To develop a conceptual framework explaining AI-enabled solo entrepreneurship.
- To identify important risks and limitations associated with dependence on GenAI.

V. RESEARCH QUESTIONS AND HYPOTHESES

RQ1: What entrepreneurial activities can be effectively supported by generative AI?

RQ2: How does GenAI influence the perceived capability of solo entrepreneurs?

RQ3: Does GenAI reduce perceived barriers to starting a business?

RQ4: How does AI adoption affect entrepreneurial productivity and decision-making?

RQ5: What challenges limit effective GenAI use by solo entrepreneurs?

H1: GenAI adoption positively influences entrepreneurial capability.

H2: GenAI adoption positively influences perceived reduction in entrepreneurial resource requirements.

H3: Perceived resource reduction positively influences entrepreneurial intention.

H4: Entrepreneurial capability positively influences entrepreneurial intention.

H5: GenAI adoption positively influences entrepreneurial productivity.

VI. RESEARCH METHODOLOGY

A. Research Design

The proposed study follows a quantitative, cross-sectional research design. Primary data can be collected through a structured questionnaire from aspiring entrepreneurs, existing entrepreneurs and individuals operating small or solo businesses. A five-point Likert scale may be used to measure perceptions from Strongly Disagree to Strongly Agree. The design is intentionally framed as a proposed empirical study because no primary dataset is available in the present draft; therefore, no numerical findings are claimed.

B. Population and Sample

The target population consists of individuals with an interest in entrepreneurship, including students with entrepreneurial intentions, early-stage founders, freelancers and existing small-business operators. The final paper should

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report the actual sample size and sampling method rather than using assumed data.

C. Research Instrument

The questionnaire can cover GenAI usage, entrepreneurial capability, perceived resource reduction, productivity, entrepreneurial intention and perceived risks. Items should be pilot-tested before full data collection.

D. Data Analysis

Descriptive statistics can summarize respondent characteristics and item responses. Reliability can be assessed using Cronbach's alpha. Pearson correlation can examine relationships among constructs, while regression analysis or structural equation modelling can be used to test the proposed hypotheses, depending on sample size and research design.

VII. PROPOSED CONCEPTUAL FRAMEWORK

The proposed framework treats GenAI adoption as an enabling factor rather than a direct substitute for the entrepreneur. GenAI can provide knowledge support, content generation, automation and decision assistance. These capabilities are expected to strengthen entrepreneurial capability and reduce perceived resource requirements. Improved capability and resource accessibility may contribute to productivity, entrepreneurial confidence and intention to establish or expand a venture.

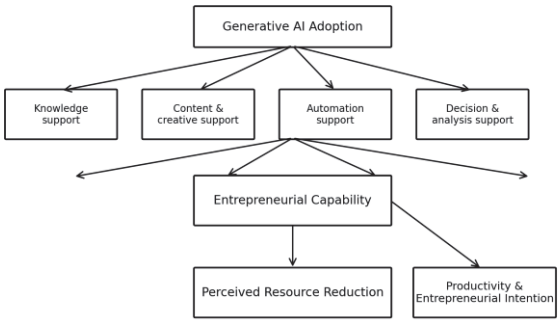


Fig. 1. Expanded conceptual framework for AI-enabled one-person startup development.

VIII. ROLE OF GENERATIVE AI IN ONE-PERSON STARTUPS

A. Idea Generation

GenAI can assist an entrepreneur in producing and comparing business ideas, customer problems and possible value propositions. Its usefulness is greatest when the entrepreneur supplies relevant context and critically evaluates the generated alternatives.

B. Market Research

AI can help organize publicly available information, summarize reports, compare competitors and formulate research questions. Entrepreneurs can therefore reduce time spent on preliminary information processing, although important facts should be verified through reliable sources.

C. Product and Prototype Development

AI coding assistants and generative design systems can support prototype development, website creation, documentation and iterative product improvement. This can be valuable for founders with limited programming or design expertise.

D. Marketing and Branding

A solo entrepreneur can use GenAI to draft social-media content, advertising copy, product descriptions, email campaigns and branding concepts. AI can therefore reduce dependence on external content-production services.

E. Customer Support

AI chatbots and automated response systems can handle routine customer questions and provide information outside normal working hours. Human intervention remains necessary for sensitive, complex or high-value interactions.

F. Decision Support

GenAI can help entrepreneurs compare alternatives, structure business problems and explore scenarios. The final decision should remain with the entrepreneur because AI-generated recommendations may contain errors, omissions or inappropriate assumptions.

IX. COMPARATIVE ROLE OF AI ACROSS STARTUP ACTIVITIES

TABLE I

Startup Activity	Traditional Requirement	Possible GenAI Support
Idea generation	Founder/team brainstorming	Idea alternatives and refinement
Market research	Researcher/consultant	Information synthesis and comparison
Prototype development	Developer/designer	Code and design assistance
Marketing	Marketing/content team	Campaign and content drafting
Customer support	Support staff	Routine conversational assistance
Data analysis	Analyst	Analysis and interpretation support
Decision support	Founder/consultant	Scenario comparison and structured reasoning

X. EXPECTED RESULTS AND ANALYSIS PLAN

Because primary data have not yet been collected, numerical findings are intentionally not fabricated in this draft. After data collection, the study can report respondent demographics, AI usage patterns, descriptive statistics, reliability values, correlations and hypothesis-testing results. Tables and figures should be created from the actual dataset. This approach preserves research integrity and allows the conclusions to be based on evidence. The literature nevertheless provides a rationale for the expected direction of several relationships. For example, experimental evidence indicates productivity gains from AI assistance, while entrepreneurship studies associate AI adoption with self-efficacy and digital entrepreneurial intention [3], [4], [6]. These prior findings are treated as theoretical support, not as results of the present study.

XI. DISCUSSION

The central proposition of this study is that GenAI may function as a capability multiplier for solo entrepreneurs. Instead of measuring AI only through automation or cost reduction, the framework considers the wider effect of AI on the range of activities an individual can perform. If empirical results support the proposed relationships, the findings would indicate that AI can lower some barriers associated with starting and operating a small venture. This interpretation is

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consistent with recent work that conceptualizes AI-enabled individual entrepreneurship as a reconfiguration of capability, capital access and risk rather than a simple replacement of human labor [2]. At the same time, evidence on AI-supported startup evaluation shows that LLM outputs can be influenced by information exposure and heuristics, reinforcing the need for verification and human judgment in entrepreneurial decisions [7].

AI-assisted entrepreneurship should nevertheless not be equated with automated entrepreneurship. Entrepreneurial success depends on market demand, execution, financial resources, customer relationships, domain expertise and many other factors. AI is therefore best understood as an enabling resource within a broader entrepreneurial system.

XII. CHALLENGES AND RISKS

• Accuracy and hallucination: AI-generated information can be incorrect and requires verification.

• Overdependence: Excessive reliance on AI may weaken independent analysis and judgment.

• Data privacy: Entrepreneurs must avoid exposing confidential customer or business information.

• Intellectual property: AI-assisted content can raise questions concerning originality, ownership and permitted use.

• Skill requirements: Effective AI use requires the ability to formulate suitable prompts and evaluate outputs.

• Loss of differentiation: Easy access to similar AI-generated content may increase competition and reduce uniqueness.

XIII. IMPLICATIONS

A. Theoretical Implications

The study extends discussion of digital entrepreneurship by positioning GenAI as a capability-enhancing resource available to individual entrepreneurs. It also encourages entrepreneurship research to consider organizational size and human-resource requirements in the context of increasingly capable digital systems.

B. Practical Implications

Entrepreneurs can use the framework to identify tasks suitable for AI assistance while retaining human oversight for strategic, ethical and customer-sensitive decisions. Entrepreneurship educators and incubators can incorporate AI literacy, verification practices and responsible-use principles into training programmes.

XIV. LIMITATIONS

The proposed study is expected to face limitations related to sample size, self-reported measures and the rapidly changing nature of GenAI technologies. Perceived productivity may differ from objectively measured business performance. Findings obtained from a particular group or geographical area may also not generalize to all entrepreneurs or industries.

XV. FUTURE SCOPE

Future research can compare AI-assisted and non-AI-assisted entrepreneurs, examine actual business performance and investigate the long-term survival of one-person ventures. Studies may also examine AI agents capable of executing multi-step workflows, sector-specific differences and the role of AI in rural and emerging-market entrepreneurship. Longitudinal research would be particularly valuable for determining whether early productivity benefits translate into sustainable venture growth.

XVI. CONCLUSION

Generative AI is creating a new possibility for individual entrepreneurship by expanding the range of business functions that one person can perform with digital assistance. The one-person startup therefore represents more than a reduction in employee count; it reflects a potential change in how entrepreneurial resources are assembled and accessed. GenAI can assist with ideation, research, product development, marketing, customer communication and decision support, potentially lowering some of the time, skill and financial barriers associated with venture creation.

The entrepreneur nevertheless remains central to opportunity evaluation, strategic judgment, accountability and execution. The future of solo entrepreneurship is therefore unlikely to be a model of humans working without support. A more plausible model is one human entrepreneur working with an AI-enabled digital workforce. Empirical testing of this proposition, especially among Indian entrepreneurs, can provide valuable evidence about the extent to which GenAI is transforming entrepreneurial capability.

provide stronger evidence about how and under what conditions GenAI contributes to sustainable one-person entrepreneurship.

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