

GENERATIVE AI AND STARTUP PERFORMANCE: THE ROLE OF ENTREPRENEURIAL CAPABILITIES

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ABSTRACT

The ongoing development of technology is essential to the progress of entrepreneurship in today's fast-paced commercial environment. Artificial Intelligence (AI) is one such technology that has the ability to completely transform how businesses and lone proprietors operate by automating and expediting a number of laborious operations. The function of AI in entrepreneurship and how it might greatly boost individual productivity will be examined in this essay. Recent research suggests that AI can improve opportunity recognition and entrepreneurial decision processes, but may also create problems relating to novelty, contextual sensitivity, and judgment. This creates a useful research opportunity

Keywords: Artificial Intelligence, Entrepreneurs, Industry Revolution

INTRODUCTION

The field of entrepreneurship has undergone a paradigm shift as a result of artificial intelligence (AI), bringing with it both new potential and difficulties. Entrepreneurs are at the vanguard of a constantly evolving business climate as AI technologies continue to advance across multiple industries. AI has the ability to greatly increase efficiency, simplify operations, and spur innovation—from transforming established sectors to opening up completely new markets. But there are also significant concerns about employment displacement, moral ramifications, and fair benefit distribution brought up by this technical breakthrough. Therefore, navigating the challenges of the digital era and utilizing AI's transformative potential for sustainable economic growth require an understanding of how AI affects entrepreneurship.

AI has the ability to change and create jobs in areas like AI validation and verification, creating businesses around easing AI integration, and addressing new responsibilities in the changing AI landscape, even though it may also displace some jobs. Among the key applications of AI include consulting, big data analytics, coding, and other technical abilities. AI is also being used by micro-entrepreneurs to create marketing and social media posts, as well as to help with grant applications and financing requests. Understanding how to use AI-related resources efficiently to reduce costs, save time, and increase productivity is what makes them valuable.

Ten Artificial intelligence startup ideas

1. Artificial Intelligence for Predictive Maintenance
2. AI-powered Virtual Assistants
3. AI-driven Customer Service and Support
4. AI-powered Inventory Management
5. AI-based Fraud Detection
6. AI-powered Language Translation

7. AI-driven Personalized Marketing
8. AI for Supply Chain Optimization
9. AI-based Predictive Sales and Lead Scoring
10. AI-powered Cybersecurity

AI technology will open up new growth opportunities for businesses, such as new products and services, new markets, and new revenue streams

Strategies for Utilizing AI in Entrepreneurship Creativity

Emphasize the Human Touch: Entrepreneurs should recognize that AI can augment, not replace, human ingenuity. By incorporating human values and intuition into AI systems, entrepreneurs may preserve their creative character. A balanced strategy integrates and personalizes products and experiences.

Continuous Learning and Adaptation: Successful integration of AI into entrepreneurship requires proactive awareness of algorithms, big data analytics, and developing technologies while maintaining creativity.

Fostering an AI-Enabled Ecosystem: Governments, educational institutions, and industry leaders should work together to develop supportive environments for ethical AI use in entrepreneurship. This includes fostering entrepreneurship programs with AI education and training to ensure comprehensive data.

The Benefits of AI in Entrepreneurship

Enhanced Decision Making: AI-powered tools and software can enhance decision-making by analyzing massive amounts of data and extracting relevant insights. Data-driven insights enable informed decision-making and improve company outcomes. **Improved Customer Experience:** Entrepreneurs prioritize providing exceptional customer service. AI-powered chatbots enable faster response times and tailored consumer experiences. AI can help solo businesses improve customer service, leading to improved happiness and loyalty.

Automation of Routine duties: Solo entrepreneurs generally handle many duties at once, which can be time-consuming. AI automates regular chores like appointment scheduling, invoice processing, and email management, allowing entrepreneurs to focus on building their businesses. **Cost and Time Efficiency:** AI-powered technologies can streamline corporate processes, saving businesses both money and time. By automating tasks, solitary entrepreneurs can reduce personnel needs, lower operational expenses, and improve productivity.

Integrating AI into your business plan might give you a competitive advantage and increase efficiency. Automating daily processes and streamlining operations can free up time and resources to focus on improving your product or service, networking with possible partners, and expanding your customer base.

The Drawbacks of AI for Entrepreneurs

Initial investment: Implementing AI in your firm may involve significant hardware, software, and training costs. **Ethical considerations:** AI systems can be biased. Monitor for bias and ensure equitable treatment for all. **Lack of human touch:** While AI-powered systems can offer tailored service, some clients may prefer human interaction.

REVIEW OF LITERATURE:

Nguyen and Nguyen (2026) A recent study by Nguyen and Nguyen examined **entrepreneurial orientation, dynamic capabilities, AI adoption, and startup performance** in Vietnamese startups. Based on data from 315 founders, CEOs, and senior managers, the study found that entrepreneurial orientation and dynamic capabilities contribute to performance through innovation capability. Importantly, AI adoption intensity strengthened the relationships between entrepreneurial orientation, innovation capability, dynamic capabilities, and startup performance. This study is particularly close to your research model because it directly connects AI adoption, entrepreneurial capabilities, innovation, and startup performance.

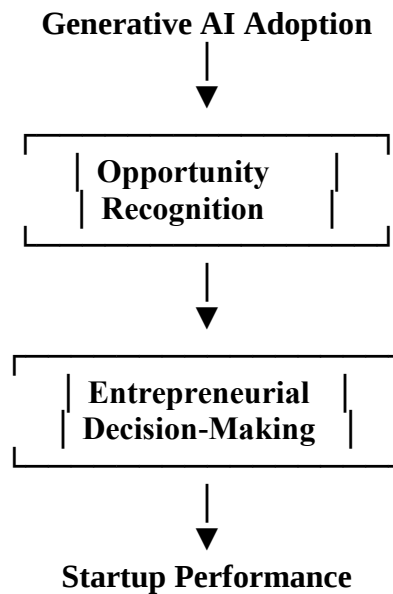
Liu and Wang (2024) examined the relationship between **Generative Artificial Intelligence (GenAI) resources and entrepreneurial performance** using the Resource-Based Theory (RBT). The study focused on tangible, intangible, and human resources associated with GenAI and investigated how these resources contribute to entrepreneurial performance. Using data from 491 university students who had established startups in China, the study employed Partial Least Squares Structural Equation Modeling (PLS-SEM). The findings indicate that GenAI resources can improve entrepreneurial performance through internal integration and external collaboration. This study is particularly relevant because it demonstrates that simply possessing GenAI resources are insufficient; entrepreneurs need the capability to integrate and utilize these resources effectively to achieve better venture outcomes.

Mikalef and Gupta (2021) developed and empirically tested the concept of AI capability, defining it as a firm's ability to select, orchestrate, and leverage AI-specific resources. Drawing on the Resource-Based Theory, the study identified tangible resources, human skills, and intangible resources as important components of AI capability. Based on a survey of 143 senior technology managers, the study found that AI capability positively influences organizational creativity and firm performance. The study suggests that technology itself does not automatically generate competitive advantage; rather, firms must develop organizational and human capabilities to effectively exploit AI. This provides an important theoretical foundation for examining entrepreneurial capabilities as a mechanism through which GenAI can influence startup performance.

RESEARCH GAP

Overall, the literature indicates that GenAI can improve startup and entrepreneurial performance, but its impact is not automatic. GenAI resources and capabilities need to be combined with entrepreneurial skills, strategic decision-making, innovation capability, and the ability to integrate resources. Liu and Wang emphasize GenAI resources and organizational integration, while Mikalef and Gupta establish the broader relationship between AI capability and firm performance. More recent evidence highlights innovation ambidexterity as a mechanism through which GenAI capabilities translate into entrepreneurial performance. A potential research gap is that relatively limited research directly examines entrepreneurial capabilities as a mediating or moderating factor between GenAI adoption and startup performance, particularly among startups in emerging economies. This provides a strong justification for your proposed study.

PROPOSED CONCEPTUAL MODEL



OBJECTIVE OF THE STUDY

1. To analyse the effect of opportunity recognition on startup performance.
2. To examine the effect of entrepreneurial decision-making on startup performance.
3. To test the mediating roles of opportunity recognition and entrepreneurial decision-making.

SCOPE OF THE STUDY

The present study focuses on examining the relationship between Generative Artificial Intelligence (GenAI) adoption and startup performance among startup founders and entrepreneurs in India. Specifically, the study investigates whether the adoption and use of GenAI tools for business activities influence startup performance through two important entrepreneurial processes: opportunity recognition and entrepreneurial decision-making.

The scope of the study is limited to founders, co-founders, startup owners, and entrepreneurs who are actively involved in strategic and operational decision-making. The study considers the use of GenAI tools for activities such as idea generation, market analysis, information processing, problem-solving, customer engagement, business planning, and decision support.

The study is expected to contribute to the growing literature on AI and entrepreneurship by providing empirical evidence on how GenAI may influence opportunity recognition and entrepreneurial decision-making. Recent research has examined AI's role in entrepreneurial decision-making and opportunity recognition, while studies of GenAI in entrepreneurship remain fragmented and are still developing, particularly regarding its effects across the entrepreneurial process and in specific contexts.

RESEARCH DESIGN-SOURCES OF DATA:

Primary Data: Primary data has been collected through structured questionnaire consisting of close ended multiple choice questions.

Secondary Data: The sources of secondary data are various research journals, books, and research papers and banks websites.

Sampling Method: The sampling method adopted for the study is “Random sampling”.

Sample Size: The sample size for the study is 50 to be collected from customers having accounts in various banks.

Data Collection Instrument: A structured questionnaire was used on data collection. The reason for using close ended questions was to get objective answers from the respondents.

Data Collection Method: A structured questionnaire with close ended questions was circulated and 80 responses were collected out of which 50 were used to analyse ignoring the incomplete responses.

Statistical Tools Used Or Applied: The following statistical tools were applied in order to analyses the data and interpret the same in order to draw conclusions with respect to the objectives set.

- Kaiser-Myer-Olkin (KMO) measure of sampling adequacy and Bartlett's test of Sphericity.
- T test and Paired T test - is used to ascertain the exact opinion of overall respondents.

RESULTS AND DISCUSSION

Table 1: KMO and Bartlett's Test Results

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.585
Bartlett's Test of Sphericity	Approx.Chi-Square	1932.113
	Df	28
	Sig.	0.000
Cronbach's Alfa = 0.956		

The questionnaire composed of nine sections, with factors of adoption of AI, Start-up Performance of the entrepreneurs. 10 questions on adoption of AI, 6 questions on Entrepreneurial creativity, 5 questions on Opportunities and recognition of entrepreneurs, and 8 questions on Start-up performance. Table 1 highlights the results of factor analysis which was tested using Kaiser-Meyer-Olkin (KMO) and Bartlett's test of sphericity. The KMO test measure of sampling adequacy (0.585) vividly reveals that the data is fit for factor analysis. The Bartlett's test of sphericity (1932.113) further corroborates our findings. The value of Cronbach's alfa (0.956) also corroborates the reliability of data.

Table: 2 t test showing Entrepreneurs start up performance

	N	Mean	Std. Deviation	Std. Error Mean	t	Sig. (2-tailed)	Rank
EP1	519	3.9403	.97374	.04274	21.999	.000	1
EP2	519	3.7495	1.08289	.04753	15.768	.000	5
EP3	519	3.4740	1.17519	.05159	9.188	.000	9
EP4	519	3.7784	1.09361	.04800	16.216	.000	4
EP5	519	3.8728	1.10946	.04870	17.923	.000	2
EP6	519	3.4990	1.05975	.04652	10.728	.000	7
EP7	519	3.6069	1.10964	.04871	12.461	.000	6

EP8	519	3.4181	1.12386	.04933	8.475	.000	10
EP9	519	3.4855	1.22367	.05371	9.040	.000	8
EP10	519	3.8343	1.14216	.05014	16.641	.000	3

The above table indicates that the mean values of ten variables of employees' potential identification range from 3.4181 to 3.9403. Similarly the t values, standard deviation and standard error mean range from 8.475 to 21.999, 0.97374 to 1.22367 and 0.04274 to 0.05371 respectively. This shows the existence of ranks among the mean values. This indicates that the entrepreneurs are moderately agree startup ideas and their performance. In depth knowledge, individual performance, active participation in the work group, feedback, right mix of goal and task

FINDINGS OF THE STUDY

- ✓ Based on the results presented in Tables 1 and 2, the following major findings were identified:
- ✓ The Kaiser-Meyer-Olkin (KMO) value of 0.585 indicates that the sample and data are adequate for factor analysis.
- ✓ Bartlett's Test of Sphericity was statistically significant ($\chi^2 = 1932.113$, $df = 28$, $p < 0.001$), confirming that significant correlations exist among the variables and that the data are suitable for factor analysis.
- ✓ The questionnaire demonstrated high reliability, with a Cronbach's alpha value of 0.956. This indicates excellent internal consistency among the measurement items.
- ✓ The respondents generally reported a positive perception of start-up performance, with the mean scores of the ten performance items ranging from 3.4181 to 3.9403.
- ✓ EP1 recorded the highest mean score (3.9403) and was ranked first, indicating that this aspect of start-up performance received the strongest level of agreement from entrepreneurs.
- ✓ EP5 (3.8728) and EP10 (3.8343) were ranked second and third respectively, showing relatively strong agreement with these aspects of entrepreneurial start-up performance.
- ✓ EP8 recorded the lowest mean score (3.4181), followed by EP3 (3.4740) and EP9 (3.4855). Although these were the lowest-rated items, their mean values were still above the neutral level.
- ✓ The t-values ranged from 8.475 to 21.999, and all ten items were statistically significant at $p < 0.001$. This confirms that the respondents' perceptions of the individual start-up performance dimensions were significantly different from the hypothesized neutral value.
- ✓ Overall, the findings suggest that entrepreneurs perceive their knowledge, individual performance, participation, feedback, goals, and task-related capabilities as important elements of start-up performance.
- ✓ In relation to the broader study, the findings provide preliminary evidence that entrepreneurial capabilities may play an important role in converting the use of AI and Generative AI into improved start-up performance.

SUGGESTIONS:

1. Startup founders should use Generative AI strategically for activities such as market research, idea generation, customer analysis, content development, and business planning. AI adoption should be integrated into entrepreneurial processes rather than used only occasionally.
2. Training programmes should be provided to startup founders to improve their understanding of AI tools, prompting skills, data interpretation, and responsible AI use. Simply having access to AI may not produce better outcomes unless entrepreneurs possess the capability to use it effectively.
3. Entrepreneurs should combine Generative AI insights with their own market knowledge and experience to identify emerging customer needs, market gaps, trends, and potential business opportunities. Research in entrepreneurship has increasingly linked AI use with opportunity recognition and entrepreneurial decision processes.
4. Incubators, accelerators, universities, and entrepreneurship development institutions should conduct programmes that help founders interpret AI-generated information and convert it into effective business decisions.
5. Government agencies, startup incubators, and entrepreneurship support organizations can facilitate AI adoption through training, mentoring, affordable access to AI infrastructure, and awareness programmes.

RECOMMENDATION FOR FUTURE RESEARCH

1. Conduct longitudinal studies to examine the long-term effect of Generative AI on startup performance.
2. Compare different industries, such as technology, healthcare, manufacturing, retail, and services.
3. Compare early-stage and mature startups.
4. Conduct cross-country studies comparing Indian entrepreneurs with entrepreneurs in other emerging economies.
5. Include moderators such as AI literacy, trust in AI, technology anxiety, or environmental dynamism.
6. Use mixed methods, combining surveys with interviews.

CONCLUSION:

Generative Artificial Intelligence (AI) is emerging as an important technological resource for entrepreneurs and startup founders. Its growing use in activities such as market analysis, idea generation, customer engagement, business planning, content creation, and decision support has the potential to influence how startups identify opportunities and improve their overall performance.

The proposed study examines the relationship between Generative AI Adoption and Startup Performance, with particular attention to the roles of Opportunity Recognition and Entrepreneurial Decision-Making. The study is based on the argument that the adoption of Generative AI alone may not automatically lead to improved startup performance. Rather, its value may be realised when entrepreneurs effectively use AI-generated information and insights to recognize new business opportunities and make better entrepreneurial decisions.

Using a quantitative research approach and PLS-SEM, the study can empirically examine both the direct and indirect relationships among the proposed constructs. The

findings are expected to contribute to the entrepreneurship and technology literature by explaining the mechanisms through which Generative AI adoption may influence startup outcomes. The study can also provide practical insights for startup founders, incubators, policymakers, and entrepreneurship-support institutions regarding the effective and responsible use of Generative AI.

Overall, Generative AI has the potential to become an important complementary resource for entrepreneurial activity. However, successful adoption requires more than access to AI tools. Entrepreneurs need appropriate AI literacy, critical thinking, market knowledge, and human judgment to evaluate and apply AI-generated outputs effectively. Therefore, the study emphasizes that the combination of Generative AI capabilities and entrepreneurial capabilities may play an important role in enhancing opportunity recognition, improving decision-making, and ultimately strengthening startup performance.

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