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Generative AI and Startup Marketing: Opportunities, Challenges and Its Impact on Entrepreneurial Performance

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Abstract—Generative Artificial Intelligence (GenAI) has emerged as a transformative technology with significant implications for entrepreneurial ventures and startup marketing. Unlike conventional artificial intelligence applications that primarily focus on prediction, classification and automation, GenAI can generate text, images, videos, ideas and other forms of content, thereby enabling startups to undertake marketing activities with relatively limited financial and human resources. This paper examines the opportunities and challenges associated with the use of GenAI in startup marketing and develops a conceptual framework explaining how GenAI adoption can influence entrepreneurial performance. Drawing upon the Resource-Based View (RBV) and Dynamic Capabilities perspective, the paper proposes that GenAI can strengthen startup marketing capabilities through content creation, personalization, customer engagement, market intelligence and marketing automation. These capabilities may subsequently contribute to entrepreneurial performance through improved marketing efficiency, customer acquisition, innovation and competitive responsiveness. However, the benefits of GenAI are not automatic. Data privacy, content quality, algorithmic bias, lack of human expertise, ethical concerns, overdependence on AI and difficulties in maintaining brand authenticity may constrain its effectiveness. Existing research also indicates that the effects of GenAI on entrepreneurial performance may be uneven and depend on the entrepreneur's capabilities and ability to select, evaluate and implement AI-generated recommendations. The paper proposes a conceptual framework and research propositions for future empirical investigation. The study contributes to the emerging literature on AI-enabled entrepreneurship by positioning GenAI-enabled marketing capability as a potential mechanism through which startups can convert technological resources into entrepreneurial performance.

Index Terms—AI Adoption, Customer Engagement, Entrepreneurial Performance, Entrepreneurship, Generative Artificial Intelligence, Marketing Capability, Startup Marketing

I. INTRODUCTION

Startups operate in highly uncertain and resource-constrained environments where entrepreneurs must simultaneously develop products, identify customers, build brands, acquire market knowledge and generate revenues. Marketing is particularly challenging for startups because they often operate with limited financial resources, small teams and relatively low brand recognition. Consequently, startups increasingly depend on digital technologies to reduce marketing costs, accelerate customer acquisition and improve market responsiveness.

The emergence of Generative Artificial Intelligence (GenAI) has created a new technological opportunity for startups. GenAI systems based on large language models and related technologies can generate marketing copy, social media posts, product descriptions, advertising content, images, videos, customer responses and market insights. Consequently, GenAI has the potential to alter how entrepreneurial firms perform marketing activities.

Recent research identifies marketing as one of the organizational functions most significantly affected by GenAI. GenAI can support content generation, personalization, customer engagement, sales lead generation and marketing productivity [1]. Similarly, recent research on digital marketing indicates that GenAI is increasingly being applied to content creation, customer experience, marketing automation and personalization.

The relevance of GenAI is particularly significant for startups. Unlike large organizations, startups cannot always afford specialized teams for copywriting, graphic design, market research, customer analytics and advertising. GenAI may therefore reduce some of the resource constraints traditionally faced by entrepreneurial firms. Research on startups and scaleups indicates that GenAI is already being used in product-led growth, sales-led growth and operational-efficiency-oriented growth strategies, including content creation, content repurposing, personalization, market research and customer engagement [2].

However, the assumption that GenAI automatically improves entrepreneurial performance requires critical examination. AI-generated outputs can contain factual errors, bias and inappropriate recommendations. Startups may also face challenges related to data privacy, intellectual property, cybersecurity, ethical use and brand authenticity. Moreover, the value obtained from AI may depend upon the entrepreneur's ability to interpret and implement AI-generated recommendations.

Evidence from entrepreneurial contexts demonstrates this issue. Otis et al. [3] found that the effect of AI assistance on entrepreneurial performance was uneven: high-performing entrepreneurs benefited substantially, whereas lower-performing entrepreneurs could experience negative effects. This suggests that access to AI alone may not generate superior performance; rather, entrepreneurial capabilities and the quality of human-AI interaction may determine the

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outcomes.

Therefore, this paper seeks to answer the following central question:

How can Generative AI-enabled marketing capabilities influence entrepreneurial performance in startups, and what opportunities and challenges shape this relationship?

The study contributes to the emerging literature by developing a conceptual framework that connects GenAI adoption, startup marketing capabilities and entrepreneurial performance.

II. OBJECTIVES OF THE STUDY

The study has the following objectives:

- To examine the emerging role of Generative AI in startup marketing.
- To identify major marketing opportunities created by GenAI for startups.
- To examine the key challenges associated with GenAI adoption in startup marketing.
- To develop a conceptual framework explaining the relationship between GenAI adoption and entrepreneurial performance.
- To examine the role of GenAI-enabled marketing capabilities as a mechanism linking GenAI adoption with entrepreneurial performance.
- To propose research propositions for future empirical investigation.

III. RESEARCH QUESTIONS

The study addresses the following research questions:

RQ1: How is Generative AI transforming marketing activities in startups?

RQ2: What major opportunities does GenAI provide to startup marketing?

RQ3: What challenges constrain the effective adoption of GenAI in startup marketing?

RQ4: How can GenAI-enabled marketing capabilities influence entrepreneurial performance?

RQ5: What organizational and entrepreneurial factors determine whether startups can successfully convert GenAI resources into performance outcomes?

IV. LITERATURE REVIEW

A. Generative Artificial Intelligence

Generative AI refers to artificial intelligence systems capable of producing new content based on patterns learned from existing data. These systems can generate textual, visual, audio and other forms of content. The rapid development of large language models has significantly expanded the accessibility of generative technologies to individuals, entrepreneurs and organizations.

Unlike traditional AI applications that are frequently designed to classify, predict or recommend, GenAI can participate directly in creative and communicative activities. This distinction is particularly important for marketing because marketing involves content generation, storytelling, customer interaction, personalization and creative experimentation.

Dwivedi et al. [4] highlight the broad implications of generative AI for business and society, while Kshetri et al. (2024) specifically emphasize its potential to transform marketing activities through content generation, personalization and customer engagement.

The growing relevance of GenAI is also reflected in research on productivity. Brynjolfsson et al. [5], examining more than 5,000 customer-support agents, found that access to a generative AI conversational assistant increased productivity by approximately 14%, with particularly large gains among less experienced workers. This evidence suggests that GenAI can augment human capabilities rather than simply replace human workers.

V. GENAI IN STARTUP MARKETING

Startup marketing generally involves activities such as market research, segmentation, branding, content creation, advertising, customer relationship management, social media management and customer engagement. GenAI can potentially support each of these activities.

A. AI-Enabled Content Creation

One of the most immediate applications of GenAI is automated content generation. Startups can use GenAI to create:

- social media posts;
- blogs and articles;
- email campaigns;
- product descriptions;
- advertising copy;
- video scripts;
- website content;
- promotional messages; and
- visual marketing materials.

This can reduce the time and cost associated with producing marketing content. Kshetri et al. (2024) argue that GenAI can improve marketing productivity by accelerating content development and enabling marketers to generate more personalized content.

For startups with small marketing teams, this capability can be particularly valuable because a single entrepreneur or small team can undertake activities that traditionally required several specialized employees.

B. Personalized Marketing

Personalization has become an important component of digital marketing. GenAI can assist startups in developing customized messages based on customer characteristics, preferences and interactions.

For example, a startup can use GenAI to generate different advertising messages for different customer segments. Similarly, AI-generated recommendations can support personalized email communication, product descriptions and customer responses.

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Kshetri et al. (2024) identify personalization as one of the important marketing opportunities associated with GenAI. Recent literature also suggests that GenAI-enabled personalization can improve customer engagement, although concerns regarding authenticity and transparency remain important.

C. Customer Engagement

GenAI can facilitate real-time interaction between startups and customers through AI-powered chatbots and conversational interfaces.

Startups can use GenAI to:

- answer frequently asked questions;
- provide product information;
- recommend products;
- assist customers during purchase decisions;
- respond to complaints;
- collect customer feedback; and
- provide post-purchase support.

Such applications can improve responsiveness while reducing the burden on small startup teams.

Evidence from customer-support settings demonstrates the productivity potential of generative AI. Brynjolfsson et al. [5] found that AI assistance increased the number of customer issues resolved per hour while also improving outcomes for less experienced employees.

D. Market Research and Customer Insights

Market intelligence is critical for startups because entrepreneurs operate under conditions of uncertainty. GenAI can assist with the analysis of customer reviews, competitor information, online discussions and other textual data.

Entrepreneurs can use GenAI to identify:

- customer pain points;
- emerging market trends;
- competitor positioning;
- customer sentiment;
- product improvement opportunities; and
- potential market segments.

Rezazadeh et al. (2025) found that startups use GenAI for market research, market-entry strategies and customer engagement as part of growth-oriented strategies.

However, entrepreneurs should treat AI-generated insights as decision-support information rather than unquestionable facts because AI systems may generate inaccurate or incomplete information.

VI. OPPORTUNITIES OF GENERATIVE AI FOR STARTUP MARKETING

The major opportunities can be summarized into six dimensions.

1) Reduction in Marketing Costs

GenAI can reduce the cost of producing content and conducting routine marketing activities. This is particularly valuable for startups operating under financial constraints.

2) Marketing Productivity

Automation of repetitive activities can enable entrepreneurs and employees to devote greater attention to strategic activities. Research on workplace GenAI provides evidence of productivity improvements, particularly among less experienced workers (Brynjolfsson et al., 2025).

3) Faster Experimentation

Startups can generate multiple versions of advertisements, product descriptions or social media messages rapidly. This facilitates experimentation and A/B testing.

4) Improved Personalization

GenAI can help startups create customized communication for different customer groups.

5) Democratization of Marketing Capabilities

GenAI can provide small firms with access to capabilities that were traditionally available primarily to organizations with larger marketing budgets.

6) Enhanced Market Responsiveness

The ability to quickly analyze information and produce content may enable startups to respond more rapidly to market trends and customer needs.

VII. CHALLENGES OF GENERATIVE AI IN STARTUP MARKETING

Despite its opportunities, GenAI introduces several challenges.

A. Accuracy and Hallucination

Generative AI systems can produce plausible but incorrect information. Incorrect product claims, market information or customer responses can damage startup credibility.

B. Lack of Authenticity

Excessive dependence on AI-generated content may make brand communication appear generic. Startup brands often depend heavily on authenticity, founder stories and emotional connections. Therefore, excessive automation may weaken differentiation.

C. Data Privacy

Startups may process customer information through AI systems. Improper handling of personal data can create legal, ethical and reputational risks.

D. Intellectual Property Concerns

AI-generated content can create uncertainty regarding ownership, originality and copyright.

E. Algorithmic Bias

AI systems can reproduce biases present in training data. Biased recommendations or communication can negatively affect specific customer groups.

F. Overdependence on Technology

Excessive reliance on AI may reduce human judgment and creativity. Human oversight therefore remains important.

G. Skill and Knowledge Requirements

Simply acquiring access to GenAI does not guarantee effective outcomes. Entrepreneurs must know how to formulate prompts, evaluate outputs, verify information and

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integrate AI into organizational processes.

The OECD (2025) similarly emphasizes that the benefits of GenAI depend on user experience, task characteristics and human-AI collaboration, while identifying trust and understanding of AI limitations as continuing challenges.

VIII. THEORETICAL FOUNDATION

A. Resource-Based View

The Resource-Based View (RBV) argues that firms can obtain sustained competitive advantage through valuable, rare, difficult-to-imitate and non-substitutable resources [7].

From an RBV perspective, GenAI itself may not necessarily constitute a sustainable competitive advantage because competing startups may access the same publicly available AI tools. Instead, competitive advantage may emerge from the firm's ability to combine GenAI with proprietary data, entrepreneurial knowledge, marketing expertise, customer relationships and organizational processes.

Thus, the important question is not simply:

"Does the startup use GenAI?"

but rather:

"How effectively can the startup integrate GenAI with its existing resources and capabilities?"

Recent evidence supports this distinction. Research on startups indicates that early GenAI adoption does not universally produce competitive advantage; widespread adoption can sometimes reduce differentiation because competitors can access similar technologies.

B. Dynamic Capabilities Perspective

The Dynamic Capabilities perspective emphasizes the ability of firms to sense opportunities, seize them and transform organizational resources in response to changing environments [8].

GenAI can strengthen each of these dimensions.

Sensing:

GenAI can help startups identify customer needs, market trends and competitor information.

Seizing:

Startups can use GenAI to rapidly develop marketing campaigns, personalized offers and customer solutions.

Transforming:

Entrepreneurs can redesign marketing processes around AI-enabled automation and human-AI collaboration.

Therefore, GenAI can be conceptualized not simply as a technological tool but as an enabler of dynamic marketing capabilities.

IX. CONCEPTUAL FRAMEWORK

Based on the literature, this paper proposes the following conceptual model:

Generative AI Adoption

GenAI-Enabled Marketing Capabilities

- AI-enabled content creation
- Personalization capability
- Customer engagement capability
- Market intelligence capability
- Marketing automation

Marketing Outcomes

- Marketing efficiency
- Customer acquisition
- Customer engagement
- Innovation capability
- Market responsiveness

Entrepreneurial Performance

- Sales growth
- Customer growth
- Profitability
- Market expansion
- Competitive advantage

The relationship can be influenced by several contextual factors:

Moderating/Boundary Conditions

- Entrepreneurial AI literacy
- Human-AI collaboration
- Organizational readiness
- Data quality
- Startup age
- Resource availability
- Competitive intensity

1) Proposed Conceptual Model

Generative AI Adoption
↓
GenAI Marketing Capability
↓
Marketing Outcomes
↓
Entrepreneurial Performance

AI Literacy + Human-AI Collaboration + Organizational Readiness → strengthen/weaken the relationships

X. RESEARCH PROPOSITIONS

Based on the conceptual framework, the following propositions are proposed.

1) Proposition 1

P1: Generative AI adoption positively influences the development of marketing capabilities in startups.

GenAI can provide startups with tools for content creation, personalization, customer interaction and market intelligence. Therefore, greater integration of GenAI into marketing processes is expected to strengthen startup marketing capabilities.

2) Proposition 2

P2: GenAI-enabled marketing capabilities positively influence startup marketing performance.

Startups that effectively use GenAI for content generation, personalization and customer engagement are expected to achieve greater marketing efficiency and customer responsiveness.

3) Proposition 3

P3: GenAI-enabled marketing capabilities positively influence entrepreneurial performance.

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Improved marketing capabilities can contribute to customer acquisition, sales growth, market expansion and competitive responsiveness.

4) Proposition 4

P4: Marketing performance mediates the relationship between GenAI-enabled marketing capabilities and entrepreneurial performance.

GenAI may not directly create entrepreneurial performance. Instead, its effects may be transmitted through improved marketing activities and outcomes.

5) Proposition 5

P5: Entrepreneurial AI literacy positively moderates the relationship between GenAI adoption and marketing capability.

Entrepreneurs with greater understanding of AI limitations and opportunities are expected to use GenAI more effectively.

6) Proposition 6

P6: Human-AI collaboration positively moderates the relationship between GenAI-enabled marketing capabilities and entrepreneurial performance.

Human oversight can improve the relevance, accuracy, authenticity and strategic alignment of AI-generated marketing outputs.

7) Proposition 7

P7: AI-related challenges, including privacy concerns, content inaccuracy, ethical concerns and loss of authenticity, negatively influence the effectiveness of GenAI in startup marketing.

XI. DISCUSSION

The conceptual analysis suggests that GenAI represents an important opportunity for startups because it can reduce resource constraints traditionally associated with marketing. A startup with a small team can use GenAI to perform multiple marketing functions, including content generation, customer communication, market analysis and campaign development.

However, technological accessibility does not necessarily translate into competitive advantage. If every startup has access to similar AI tools, the technology itself becomes less rare and less difficult to imitate. Therefore, the competitive value of GenAI may increasingly depend on complementary resources such as proprietary customer data, marketing expertise, entrepreneurial creativity, brand identity and organizational learning.

This argument is consistent with the RBV. GenAI may be relatively accessible, but the capability to integrate it effectively into marketing processes can be more difficult to replicate.

The findings of recent entrepreneurial research further suggest that AI outcomes can be uneven. Otis et al. [3] reported that entrepreneurs with stronger baseline performance benefited more from AI assistance, while lower-performing entrepreneurs could experience negative effects. This suggests that GenAI should not be considered a substitute for entrepreneurial capability.

Similarly, research on startup growth strategies demonstrates that GenAI can support product-led, sales-led and operational-efficiency-driven growth. However, its effectiveness depends upon how startups develop and deploy AI capabilities across different growth challenges [2].

Therefore, the central argument of this paper is that GenAI should be viewed as an augmentation technology rather than an autonomous source of entrepreneurial success.

XII. MANAGERIAL IMPLICATIONS

The conceptual framework provides several implications for startup founders and managers.

First, startups should identify marketing activities where GenAI provides the greatest value rather than adopting AI simply because it is technologically fashionable.

Second, entrepreneurs should develop AI literacy among marketing employees. Employees need to understand prompt design, output evaluation, fact verification and responsible AI use.

Third, startups should maintain human oversight over customer-facing content. AI-generated content should be reviewed before publication, particularly where the content involves product claims, financial information, health information or sensitive customer communication.

Fourth, startups should establish internal guidelines concerning privacy, intellectual property, disclosure and ethical AI use.

Fifth, entrepreneurs should focus on developing complementary capabilities. AI tools can be easily copied, whereas customer knowledge, proprietary data, brand identity and entrepreneurial expertise can provide greater differentiation.

Finally, startups should measure the performance of GenAI-supported marketing using measurable indicators such as customer acquisition cost, conversion rate, engagement rate, customer retention, marketing productivity and revenue contribution.

XIII. THEORETICAL IMPLICATIONS

This paper contributes to the literature in three ways.

First, it extends the emerging literature on GenAI by focusing specifically on startup marketing rather than large established organizations.

Second, it integrates the Resource-Based View and Dynamic Capabilities perspective to explain how technological resources can be transformed into marketing capabilities and entrepreneurial outcomes.

Third, the paper highlights the importance of human-AI collaboration and entrepreneurial AI literacy. This moves the discussion beyond simple technology adoption and toward the question of how entrepreneurs create value from AI.

The conceptualization is particularly important because GenAI may be widely accessible while the ability to integrate it strategically remains uneven.

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XIV. FUTURE RESEARCH DIRECTIONS

Future studies can empirically test the proposed framework using survey data collected from startup founders, entrepreneurs and marketing professionals.

A quantitative study could operationalize:

1) Independent Variable

Generative AI Adoption

Dimensions:

- intensity of use;
- breadth of use;
- strategic integration;
- frequency of use.

2) Mediating Variable

GenAI-Enabled Marketing Capability

Dimensions:

- content creation;
- personalization;
- customer engagement;
- market intelligence;
- marketing automation.

3) Dependent Variable

Entrepreneurial Performance

Dimensions:

- sales growth;
- customer acquisition;
- profitability;
- market growth;
- competitive performance.

4) Moderating Variables

- AI literacy;
- human-AI collaboration;
- organizational readiness;
- startup age;
- competitive intensity.

Data could be analyzed using PLS-SEM/SmartPLS, particularly if the study focuses on prediction and involves a relatively complex conceptual model.

Future studies could also use a mixed-method design involving interviews with startup founders followed by a quantitative survey.

XV. CONCLUSION

Generative Artificial Intelligence is rapidly changing the way startups approach marketing. Its ability to generate content, personalize communication, support customer engagement and provide market insights creates significant opportunities for resource-constrained entrepreneurial firms. Recent evidence demonstrates that GenAI can enhance productivity and support startup growth activities, but its benefits are neither automatic nor uniformly distributed.

The present conceptual paper argues that the relationship between GenAI and entrepreneurial performance is primarily mediated by GenAI-enabled marketing capabilities. Startups can transform GenAI from a technological resource into a strategic capability when they integrate it with human expertise, proprietary knowledge, customer data and organizational processes.

At the same time, challenges related to accuracy, privacy, ethics, intellectual property, authenticity and overdependence cannot be ignored. The uneven entrepreneurial effects identified in recent research further demonstrate that AI access alone is insufficient to guarantee superior performance.

Therefore, the future of startup marketing is unlikely to be characterized by AI replacing entrepreneurs. Instead, it is more likely to involve entrepreneurs and marketing teams working collaboratively with AI. Startups that successfully combine GenAI with human creativity, strategic judgment and entrepreneurial capabilities may be better positioned to achieve marketing efficiency, customer engagement, innovation and sustainable entrepreneurial performance.

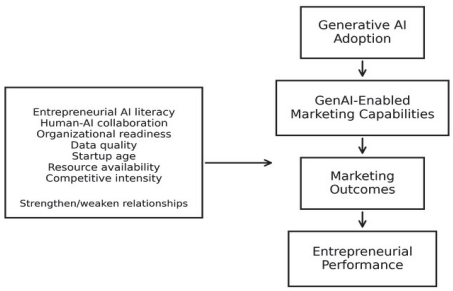


Fig. 1. Conceptual framework linking Generative AI adoption, GenAI-enabled marketing capabilities, marketing outcomes, and entrepreneurial performance.

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