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AI and Innovation a New Frontier for Entrepreneurship: Improving SMEs through Organizational Agility

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ABSTRACT

There has been a dramatic shift in the role of innovation and artificial intelligence (AI) in the success of entrepreneurs in the modern corporate world. Embracing AI-driven innovation is crucial for small and medium enterprises (SMEs) to improve their organizational agility, especially when faced with limited resources and competitive challenges. This study delves into how small and medium-sized enterprises (SMEs) can enhance their decision-making, operations, and agility through the use of AI technology in conjunction with strategic innovation. Small and medium-sized enterprises (SMEs) may improve productivity, through which today's youth can easily start their entrepreneurial activity in the market, and build long-term competitive advantages by combining automation powered by artificial intelligence (AI). In addition, SMEs can maximize their company performance, adapt swiftly to changing circumstances, and grab new possibilities with AI. The study offers insights into best practices for utilizing technology to propel entrepreneurial success, which also emphasizes important obstacles and possibilities in implementing AI for the expansion of SMEs. In conclusion, this research highlights how innovation and AI will shape SMEs' future and help create an entrepreneurial environment that is more resilient, nimble, and competitive also explains the post, pre-, and today's era of SMEs.

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Introduction

Artificial intelligence (AI) is changing industries and fostering innovation in the fast-paced corporate world. When it comes to improving efficiency, streamlining operations, and fostering sustainable growth, small and medium-sized firms (SMEs) have never had it so good with AI (Wu, 2024). Organizational agility is a critical component that helps firms adapt, develop, and prosper in a competitive environment.

Small Medium Enterprises

According to a report by SME chamber of India (2020) the Small and Medium Enterprises sector has grown to be a major economic player, generating jobs, exporting goods and services, and fostering inclusive economic growth. Micro, Small, and Medium-Sized Enterprises (MSME) are the backbone of our country's economic growth. Additionally, it contributes for forty percent in all of his exported goods, 45% in manufacturing sector's output, and an important share in GDP. The nation in which the firm operates determines the specific size of a SME. A range of factors including the location, size of an organisational or grouping as a SME can be influenced by a number of parameters. The parameters include the market value, the number of staff, the sum of capital retained by the company, yearly sales and any other combinations of above (Wu et al., 2025). Furthermore, the meaning of a small and medium-sized enterprise in the United States differs by industry. The Indian economy is largely attributed to its small, medium, and cottage industries, which are seen as a key pillar of the nation's economic development. Small-scale businesses are essential to the economy, which is why they are typically labour-intensive, create jobs, and present numerous chances to advance exports.

Background of AI & Innovation in Entrepreneurship:

Early The stages of AI's Development in Entrepreneurship (1950s–2000s): When AI research started in the middle of the 20th century, most start-ups and entrepreneurs were unable to afford it due to its high processing costs and limited technology. The 2010s experienced the rise of machine learning. AI became more widely available because to the development of data, developments in cloud computing, and enhanced algorithms. Democratization of AI (from the 2020s onward): Even non-technical entrepreneurs can use AI due to open-source AI models, AI-as-a-Service (AIaaS), and low-code platforms.

AI enhances consumer experiences, automates routine tasks, and takes knowledge from data sets to transform company operations and processes. 58 percent of employees believe that one of the most significant advantages of AI is greater innovation, referring to a Deloitte survey. Innovation is important for entrepreneurship, and artificial intelligence (AI) is revolutionizing the way companies are founded, grown, and run. Entrepreneurs can now automate tasks, obtain data-driven insights, improve customer experiences, and create ground-breaking goods and services through AI-driven tools and technologies (Mariani et.,al 2023)

The entrepreneurial sector has been completely transformed by artificial intelligence (AI), which allows companies to innovate, improve tasks, and open up new markets(Wu et al., 2025). The larger history of technical development, where developments in gadgets, machine learning, and automation have continuously influenced business models, is the foundation of the connection between AI and entrepreneurship. Artificial Intelligence effects on entrepreneurship dates back to the mid-1900s, when it first emerged as a technology for computing. AI was mostly a theoretical topic at first, but as machine learning and deep learning algorithms advanced, it started to be used practically by organizations. The late 20th century digital revolution made automation, cloud computing, and data processing more accessible, which opened the way for AI-driven the workplace(Yildiz & Aykanat, 2021). AI is implemented by entrepreneurs to improve customer service, create new products, and improve practices. AI boosts innovation in several important fields, including:

- **Products and Service Innovation:** By studying market trends, customer demands, and emerging technologies, AI enables businesses to generate new products and services. For instance, AI-powered design tools help entrepreneurs create tailored solutions, while AI-driven R&D accelerates product development.
- **Optimization of Processes:** Artificial intelligence (AI) optimises workflows, automates repetitive tasks, and improves supply chain management, all of which increase productivity. In order to improve efficiency and cut costs, SMEs can automate tasks related to inventory management, logistics, and predictive maintenance with the help of AI.
- **Maximizing Advertising and Revenue:** By facilitating automated email campaigns, personalized content development, and targeted advertising, AI improves digital marketing. In order to improve marketing tactics and boost conversion rates, AI-powered CRM systems examine client behaviour.

- **Innovation in Business Models:** Digital marketplaces, AI-driven platforms, and subscription-based services are just a few examples of the new types of businesses made possible by AI(Guo et al., n.d.). Artificial intelligence (AI) presents an opportunity for entrepreneurs to bring in new solutions while upending established markets.

Organisation Agility as a Key to SMEs:

Organizational agility is key to the success of small and medium-sized enterprises (SMEs) in the fast-paced, harsh commercial world of today. Long-term expansion and sustainable development are ensured by SMEs' capacity to swiftly adjust to shifting consumer demands, market conditions, and technology innovations. The ability of an organization to react quickly to changes while maintaining operational effectiveness and strategic focus is known as organizational agility(Arsawan et al., n.d.). Since SMEs are more flexible than huge organizations with inflexible structures, agility is a crucial component of their survival and growth. In an ever-evolving business environment, SMEs can handle uncertainty, grasp new possibilities, and maintain their competitiveness by cultivating flexibility, innovation, and adaptability(Daldiran, n.d.). Now discuss the key factor of Organization Agility that are important for SMEs and why these keys are important let discuss, following are the points of keys.

- **Changing with the Market:** When consumer tastes, market conditions, and competition all change, SMEs need to be nimble to stay afloat. The ability to swiftly change course, introduce new goods, or adjust services is a hallmark of an agile company.
- **Innovations in Decision-Making:** With agility, SMEs can prioritize customers and make decisions based on data. Analytics driven by AI and real-time insights help firms spot opportunities, reduce risks, and make better decisions.
- **Modernity and Opportunity in the Market:** A culture of continual innovation is fostered by agile SMEs. They may maintain a competitive edge and develop distinctive value propositions by fostering an environment that encourages innovation, collaboration, and incremental changes. Automation powered by AI and machine learning models streamline research and development and product development, further accelerating innovation.
- **Approach Focused on the Customer:** By providing customers with fast replies to their demands and tailored experiences, SMEs may strengthen their relationships with customers through agility. Catboats, customer relationship management software, and predictive analytics powered by AI help companies better understand and meet consumer expectations.

- **Expansion and Scalability:** In order to scale operations efficiently, SMEs need a business strategy that is both flexible and adaptive. Digital transformation, remote employment, and automation powered by artificial intelligence allow organizations to enter new markets at low cost.

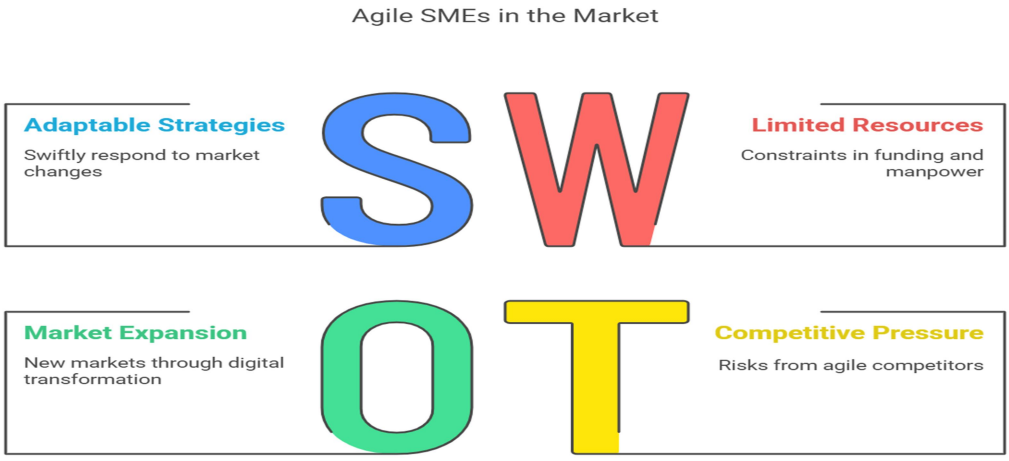

Figure 01: SWOT Analysis of SMEs

The main strength of the SMEs with Agile is to swiftly respond to market changes. If market introduce the new product or else the SMEs with agile can easily swift their mode to market needs. But there is the weakness of SMEs regarding funding and manpower, as the SMEs has low manpower where if we talk about the opportunities of SMEs so as todays era & market is concern SMEs now worked with the digital transformation for new market, but previously we know that they have less manpower so the SMEs always face the competition with new markets. This is a review paper hence its covered with ground existence literature so the main importance of this article is to explain and examine the role of AI and innovation in driving Entrepreneurship in SMEs.

Theoretical Framework:

The Theoretical Framework of this article is divided in to 4 stairs which are as follows:

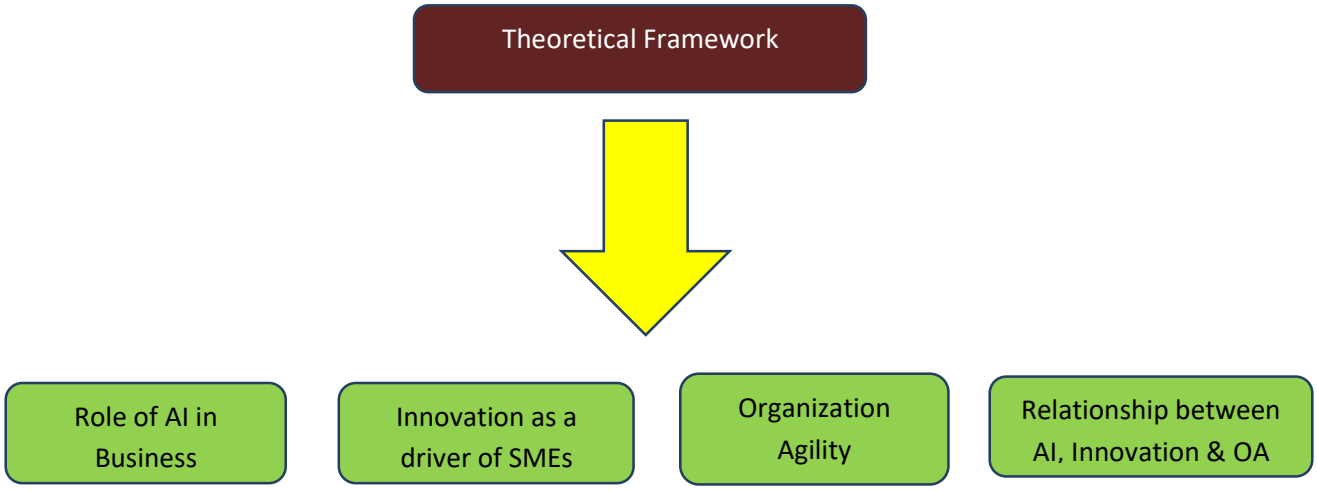

Figure 02: Theoretical Framework

- **Role of AI in Business:** AI is important for modern business because it improves decision-making, increases productivity, and changes the way customers interact with businesses. AI is used by businesses to automate repetitive processes, which lowers operating costs and minimizes errors By evaluating massive amounts of data to find patterns, improve marketing tactics, and improve financial projections, it facilitates data-driven decision-making (Soni et al., n.d.). AI-powered cybersecurity solutions aid in the detection and avoiding fraud, while chatbots and tailored recommendations enhance client interaction(Daldiran, n.d.). AI simplifies procedures, increases output, and stimulates creativity in sectors including healthcare, finance, supply chain, and human resources. Businesses that effectively integrate AI technology have a competitive edge as the technology grows further, opening up new avenues for efficiency and growth.
- **Innovation as a driver for SMEs:** Small and medium-sized businesses (SMEs) need significantly on innovation to stay productive, adjust to shifting market conditions, and achieve long-term growth. SMEs can set business apart from more established firms by adopting new technologies, enhancing their offerings, and optimizing their processes(Chan et al., 2019). Through innovative company structures, innovative marketing techniques, or digital transformation, innovation increases productivity, reduces expenses, and creates new revenue streams. Additionally, it creates resilience, which enables SMEs to react quickly to market changes and consumer needs. Because they understand how important creative SMEs are to job creation and economic growth, governments and investors frequently support them. SMEs can

increase their market presence, attract customers, and create long-term success in a changing business environment by always innovating.

- **Organisation Agility: concept & dimension:** The ability of an organization to swiftly adjust to shifting customer requirements, market conditions, and new opportunities while preserving stability and efficiency is known as organizational agility. It helps businesses to stay competitive in ever-changing settings, develop constantly, and react proactively to disturbances(Androutsopoulou et al., 2024). Strategic agility, which focuses on long-term vision and adaptability; structural agility, which ensures flexible processes and structures that facilitate change; process agility, which permits quick decision-making and execution; people agility, which emphasizes the development of a knowledgeable, flexible workforce; and technology agility, which makes use of digital tools and artificial intelligence to improve responsiveness, are the main components of organizational agility(*Gren, L. (2019). Learning More from Crossing... - Google Scholar*, n.d.). Organizations may enhance resilience, stimulate innovation, and maintain long-term success in a constantly changing business environment by cultivating agility across several dimensions.
- **Relationship b/w AI & Innovation & OA in SMEs:** Organizational agility (OA), innovation, and artificial intelligence (AI) are closely related in SMEs because AI fosters innovation and increases agility, which helps SMEs succeed in ruthless marketplaces. By automating procedures, enhancing decision-making, and opening up new business customers, AI-driven solutions allow SMEs to grow(Sewpersadh, 2025). By allowing SMEs to react quickly to changes in the market, improve operations, and improve customer experiences, this innovation in turn increases organizational agility. SMEs may successfully adopt AI-driven innovations via organizational agility, which also keeps them adaptable and sensitive to changes(Guo et al., n.d.). SMEs are positioned for long-term growth and success when AI, innovation, and agility work together to create a dynamic cycle in which AI drives creativity, innovation improves agility, and agility drives up AI adoption(Tai, 2020).

Participation of Government in AI Adoption

When it comes to encouraging SMEs to use AI, governments play a vital role. Government intervention may offer the essential support to SMEs, who frequently encounter obstacles including insufficient funds, a lack of technical knowledge, and ambiguity when it comes to using AI(Androutsopoulou et al., 2024). This support can help speed innovation powered by AI and economic growth.

Government Priorities for AI Adoption by SMEs: Following are the Priorities of government for the adoption of AI.

Aid and Financial Incentives
• To encourage SMEs to invest in artificial intelligence technologies, governments offer grants, subsidies, and low-interest loans.
• To encourage enterprises to integrate AI into their operations, tax incentives or R&D credits focused on AI are offered.
• Small and medium-sized enterprises (SMEs) and startups working on AI-driven solutions are backed by public funding schemes.

Establishing an AI Infrastructure
• To foster an environment conducive to the adoption of AI, governments pour resources into infrastructure like high-speed internet, cloud computing, and AI research centres.
• The use of artificial intelligence (AI), big data platforms, and supercomputing resources would be out of reach for small and medium-sized enterprises (SMEs) without public-private collaborations.

Education Training and Development
• Training programs, workshops, and certifications that focus on artificial intelligence (AI) enable employees of SMEs gain skills relevant to AI.
• Businesses and their employees can take advantage of AI upskilling and reskilling programs offered by governments, universities, and tech companies.
• Projects aimed at increasing people's AI literacy help spread the word about the pros and cons of AI.

Partnering between public and private sectors
• Companies in the SME sector have better access to AI-driven breakthroughs when the government, IT companies, and research institutions work together..
• Opportunities for mentorship and networking are provided via government-funded AI innovation hubs and incubators.
• When SMEs form partnerships with industry heavyweights in AI, they have access to cloud-based AI services and open-source AI technologies.

The government may help small and medium-sized enterprises (SMEs) use AI for innovation, efficiency, and competitiveness by getting involved in AI adoption activities. Small and medium-sized enterprises (SMEs) can prevail in an AI-driven economy with the correct combination of funding, digital infrastructure, skill development, and regulatory frameworks.

Case Studies Using AI in SMEs

Fresh works India: Fresh works India presents AI-Driven Customer Service. The sector is linked to AI chatbots for customer support, which are a SaaS application. Global SMEs can take use of Fresh works' AI-driven customer service solutions, offered by the Indian SaaS start-up. Freddy AI, their artificial intelligence chat bot, improves customer service by automating responses and reducing manual processes. AI-Powered Resolution in Automated AI chatbots answer frequently asked questions from customers in real time. Through the use of Natural Language Processing (NLP), AI is able to comprehend and address client requirements. Efficiently address critical consumer concerns with the use of AI-powered sentiment analysis.

Impact:

- Customer satisfaction has increased and response times have decreased.
- Saved money on operations by cutting down on human agents.
- Made customer support ticket handling more efficient.

Intelligent Automation in Retail – Thread, UK: Thread, UK-based Intelligent Automation in Retail with a Focus on Fashion Retail and the Use of AI to Create a Tailored Purchasing Experience. Thread, a clothes retailer located in the United Kingdom, utilizes artificial intelligence to offer customers tailored

garment suggestions. The business uses a combination of artificial intelligence algorithms and human stylists to provide customers with personalized outfit recommendations. Artificial intelligence (AI) uses consumer data (such as purchase history, style preferences, and comments) to provide outfit recommendations, it is the AI- Powered Resolution. Using data collected from encounters with customers, machine learning refines recommendations over time. The AI-human hybrid method guarantees that human stylists can improve AI insights.

Impact:

- Improved interaction with and happiness from customers.
- Enhanced conversion rates as a result of tailored suggestions.
- Intelligent demand forecasting powered by AI for streamlined inventory management.

Conceptual Framework

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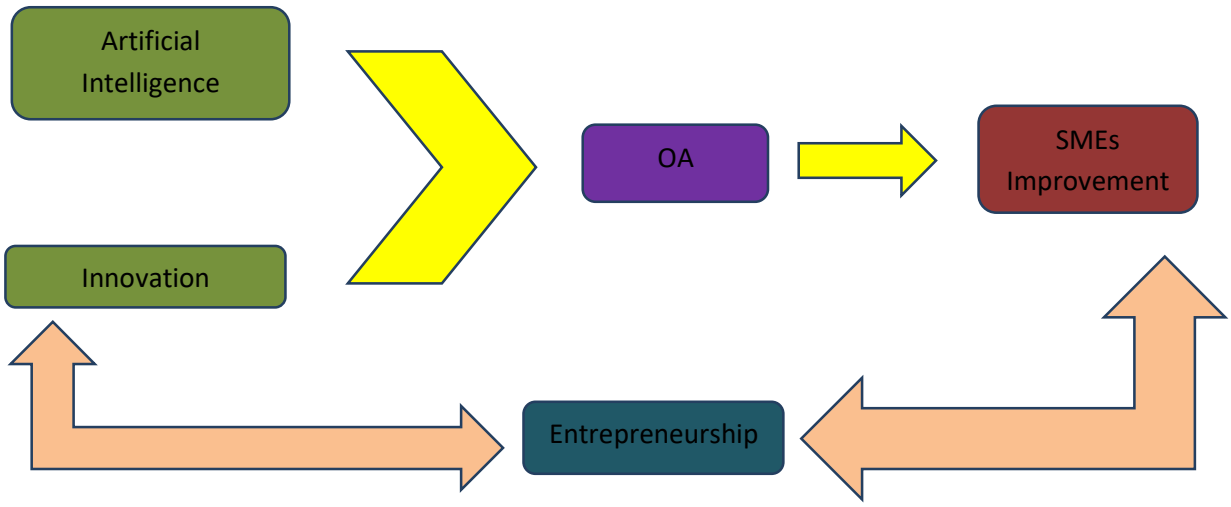

Figure 03: Conceptual Framework

Interpretation of Conceptual Framework:

This conceptual framework presents a systematic knowledge of how technologies powered by AI improve adaptability, creativity, and performance. It explains how artificial intelligence impacts SMEs, entrepreneurship, and organizational agility. Here the AI & Innovation are the Independent variable and Organization Agility is worked as a mediating variable that would help in giving outcomes by SMEs and

this outcome is commonly known as Dependant Variable when the independent variable associated with mediating variable then it comes in the form of outcomes and this outcomes will help in increasing the entrepreneurship that helped the society and SMEs youth to become or involved in entrepreneurial activity.

Discussion

The use of artificial intelligence (AI) in entrepreneurship is changing the way SMEs function, compete, and create. By utilizing AI-driven solutions, small and medium-sized enterprises (SMEs) can increase their organizational agility, response time to market changes, operational efficiency, and decision-making capabilities. Using AI-powered solutions like CRMs, process automation, and predictive analytics, SMEs can maximize their resources and stay ahead of the competition. Nevertheless, despite its many opportunities, high implementation costs, talent gaps, and ethical considerations are some of the problems that need to be addressed to ensure the sustainable adoption of AI. Whether or not SMEs are prepared to engage in digital transformation and foster an innovation-driven culture will determine how well they integrate AI. To keep small and medium-sized enterprises (SMEs) adaptable and competitive in the dynamic economic world, lawmakers and CEOs must work together to build ecosystems that encourage the use of artificial intelligence.

Conclusion

To conclude, small and medium-sized enterprises (SMEs) have a game-changing opportunity to increase their organizational agility and competitiveness through the integration of artificial intelligence (AI) into entrepreneurship. Automated processes, better decision-making, and faster adaptation to market changes are all possible for SMEs with the help of AI-driven insights, predictive analytics, and automation. In today's increasingly digital world, SMEs can compete with larger firms thanks to their agility, which also encourages innovation. Nevertheless, a well-planned strategy that incorporates technological investment, staff upskilling, and a mindset of flexibility is necessary for the effective implementation of AI. Artificial intelligence's (AI) growing importance in entrepreneurship will make it an indispensable tool for small and medium-sized enterprises (SMEs) to thrive in today's competitive market.

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