Available online @ www.iaraindia.com
SELP Journal of Social Science - A Blind Review & Refereed Quarterly Journal
ISSN: 0975-9999 (P) 2349-1655 (O) Impact Factor: 5.650 (I2OR), 4.111 (COSMOS), 2.5 (JIF), 2.77 (NAAS)
Volume XVII, Issue 67, October – December 2026
Formally UGC Approved Journal (46622), © Author

INFLUENCE OF ARTIFICIAL INTELLIGENCE ON ENTREPRENEURIAL SUCCESS IN E-COMMERCE: EVIDENCE FROM DIGITAL ENTREPRENEURS

R. JAYANTHI
Assistant Professor & Head
Department of Commerce
Idhaya College for Women, Sarugani.

Mr. F. AROCKIASAMY
Assistant Professor
Department of Commerce with CA
Ananda College, Devakottai.

ABSTRACT

In the world of e-commerce, the introduction of Artificial Intelligence (AI) has proven to be a game-changer for business owners aiming to enhance customer engagement, streamline business operations, personalize marketing strategies and boost data-driven decision-making. Thanks to the surge in ecommerce, there are new possibilities for business owners, and tech skills are becoming more critical than ever for staying competitive. The present study aimed at finding the impact of Artificial Intelligence on Entrepreneurial Success of E-Commerce entrepreneurs. The study is of quantitative type with the primary data obtained from 400 digital entrepreneurs. Adoption of AI is measured in the following areas: AI-powered marketing and advertising, AI-based customer service, personalised product recommendations, predictive analytics, automated business operations and AI-based pricing and demand forecasting. The entrepreneurial success is determined by the performance of the business, growth of revenue, customer engagement, capability of innovation, competition advantage and business growth. Descriptive statistics, correlation analysis and multiple regression analysis are used to analyze the relationship between AI adoption and entrepreneurial success. Results suggest that the use of AI has a strong positive correlation with entrepreneurial success. It's in the realm of personalised product recommendations and automated business operations that the other critical AI capabilities that shape entrepreneurial success become evident. The regression model shows that a significant amount of entrepreneurial success can be accounted for by the use of AI. The final conclusion of the study is that AI is not just a technical solution but a strategic entrepreneurial skill that can improve the performance of the business, customer engagement, innovation and competitive edge in the domain of ecommerce.

KEYWORDS: Artifical Intelligence, E-Commerce, Digital Entrepreneurs, AI Adoption, Entrepreneurial Success, Business Performance, and Innovation.

INTRODUCTION

Digital technologies have dramatically changed the way businesses value, engage with customers and compete in the domestic and global markets. E-commerce has become a significant part of the digital economy, allowing business owners to tap into larger markets with comparatively low startup costs. But, with the rising competition, frequent changes in consumer preferences and the increasing number of digital transactions, entrepreneurs have realized the need

for advanced technologies that can help them enhance efficiency and deliver better customer experiences. AI is one of the most powerful technologies in this revolution due to its capabilities of processing vast amounts of data, automating business operations and aiding in intelligent decision-making.Artificial Intelligence is the name given to technologies that allow artificial machines and digital systems to perform tasks that, until recently, could only be done by a human being: learning, predicting, reasoning, language processing and decision making. AI is being used in e-commerce for personalised product recommendations, customer service chatbots, digital advertising, demand forecasting, fraud detection, and pricing and inventory management. These applications enable entrepreneurs to move from conventional business practices towards data-driven and customer-oriented business models.

With consumers increasingly seeking personalised and timely interactions on digital channels, the importance of AI in marketing has grown significantly. Recommendation systems powered by AI can analyze user behavior, such as their browsing history, purchasing patterns, and preferences, to offer personalized product recommendations. In a similar way, AI-powered marketing tools can help business owners segment their customers, optimise their campaigns and target their marketing messages. These features can help boost customer engagement and in turn, enhance business performance. AI plays a significant role in operational efficiency as well. Automated business processes can help minimize repetitive manual tasks and help business owners focus on strategic activities. Customer support can be available 24/7 with the help of chatbots and virtual assistants, and predictive analytics can help entrepreneurs anticipate customer needs and inventory management. Small digital businesses could especially benefit from these technologies, as the entrepreneurs are often limited in their human and financial capacity. The Technology–Organisation–Environment model put forward by Tornatzky and Fleischer (1990) can be used to understand how technology adoption relates to entrepreneurial performance, explaining that technology is affected by technological characteristics, organisational conditions and environmental factors. The Resource Based View is also helpful because AI capabilities can transform into strategic resources when entrepreneurs are able to incorporate them in their business processes (Barney, 1991). Viewed from this angle, having AI technology isn't the same as having competitive advantage, and entrepreneurs must have the ability to leverage AI tools in marketing, customer service, operations, and decision-making.

The significance of AI in marketing and entrepreneurship has been one of the growing areas of study over the past few years. Davenport et al. (2020) emphasized the role of AI in marketing and how AI can revolutionize customer understanding, personalisation and marketing decision making. Huang and Rust (2021) contended that AI is transforming marketing activities, as it is transforming the intelligence needed for making marketing decisions. Likewise, Dwivedi et al (2021) recognized AI as a key enabler of digital transformation, and pointed out its potential impact on organizations, customers and society at large. The implications of AI are far more than marketing for e-commerce businesses. AI can help in business model innovation, enhance operational efficiency, and give entrepreneurs immediate feedback on consumer behaviour. Adoption also presents challenges including the cost of technology and lack of technical expertise, data quality, privacy concerns and resistance to change within the organisations. Thus, the effect of adopting AI on entrepreneurial achievement should be studied through an empirical approach, rather than being assumed.

Therefore, the present study focuses on how Artificial Intelligence affects the success of entrepreneurs in the field of e-commerce, while taking into consideration digital entrepreneurs. This study aims to find the key applications of AI that entrepreneurs use and also to see how these applications relate to other business metrics like business performance, revenue growth, customer engagement, innovation capability, competitive advantage, and business expansion.

REVIEW OF LITERATURE

AI is a key field of research in entrepreneurship, marketing, and business and digital transformation. The previous research mainly addressed the automation and expert systems, while

recent research has gone beyond and included machine learning, predictive analytics, recommendation systems, generative AI, and intelligent decision making. The Resource Based View (RBV) (Barney 1991) proposes that firms can gain sustainable competitive advantage when they possess a resource or capability that is valuable, rare, hard to imitate and not easily substitutable. However, in the e-commerce landscape, AI capability can be regarded as a strategic asset if businesses have the knowledge and organizational capacity to leverage AI in their operations. Tornatzky and Fleischer (1990) have developed the Technology–Organisation–Environment framework which shows that the adoption of a technology is not just determined by the attributes of that technology, but also by the readiness of the organisation and the environment. This framework applies to e-commerce businesses, since the advantages of implementing AI could hinge on technological and financial resources, entrepreneurial abilities, and market competition.

Davenport et al. (2020) explored the impact of Artificial Intelligence on Marketing and noted a few aspects that AI can influence the marketing process, such as Customer Insights, Personalisation, Automation and Decision Making. They highlighted AI's potential to enhance the effectiveness of marketing efforts, as it can handle vast amounts of customer data and provide valuable insights for action.Huang and Rust (2021) suggested a strategic framework for AI in Marketing and highlighted the various types of mechanical, thinking and feeling tasks AI can perform. According to their work, companies must figure out how to utilize AI alongside human efforts instead of replacing people with AI. Dwivedi et al. (2021) explained the implications of AI in marketing and society and viewed AI as an important technology impacting on consumer behaviour, marketing practice and organizational decision-making. They also identified issues of privacy, ethical and responsible use of AI as challenges in their study.Kaplan and Haenlein (2019) investigated Artificial Intelligence from a managerial standpoint and pointed out the growing significance of machine learning and intelligent systems in business. They stated that companies must be aware of the strengths and weaknesses of AI to effectively incorporate it into strategic decision-making. Rai et al. (2019) explored explainable AI and highlighted the significance of organisations employing AI-based decision systems with transparency and interpretability. For entrepreneurs, this is especially important as they may rely on AI-generated recommendations or decisions, which can impact their business outcomes.

Chintalapati and Pandey (2022) studied the evolution of Artificial Intelligence in marketing and noted that AI is making significant strides in customer analytics, personalisation, automation and decision making. The results show how vital marketing capabilities with AI are becoming in today's businesses.Grewal et al. (2020) explored the future of technology and retailing, emphasizing the growing role of artificial intelligence, automation and digital technologies in the retail sector. The study suggests technological capacity has the potential to affect customer experiences and competitive positioning.The study by Verhoef et al. (2021) focused on digital transformation and emphasised the role of technological capabilities and organisational transformation and new business models. They say that a successful digital transformation should involve the use of technology alongside the business organization's resources and capabilities.

RESEARCH GAP

While there are earlier works studying Artificial Intelligence in marketing and digital transformation and retailing, there is little empirical research that focuses on the association between AI adoption and entrepreneurial success among e-commerce entrepreneurs. While other studies have been conducted with organisations and consumers or marketing functions as the major unit of analysis, the existing literature does not investigate entrepreneurs as a key unit of analysis. Additionally, the impact of a range of AI applications in marketing, customer service, personalisation, predictive analytics, automation and AI-based pricing on several aspects of entrepreneurship has not been sufficiently explored. Hence, the present study seeks to fill this gap by empirical investigation on the impact of the use of Artificial Intelligence on entrepreneurial success in the field of e-commerce among digital entrepreneurs.

OBJECTIVES OF THE STUDY

This study is done with the following purposes in mind:

- To explore how much Artificial Intelligence is being used by e-commerce business owners.
- To determine the prominent applications of Artificial Intelligence that the digital entrepreneurs use.
- To evaluate the success in the entrepreneurial ventures of E-commerce entrepreneurs.
- To examine the correlation between the adoption of Artificial Intelligence and entrepreneurial success.
- To investigate the impact of various facets of AI on entrepreneurs' success.
- To determine the most important capabilities of AI for business performance, customer engagement and competitive advantage.
- To recommend relevant actionable points to enhance the use of AI by e-commerce entrepreneurs.

HYPOTHESES

The following hypotheses are developed based on the literature and the study's objectives:

- **H_{01}:** Entrepreneurs in the e-commerce industry do not have a significant relationship between the adoption of Artificial Intelligence and entrepreneurial success.
- **H_{02}:** Entrepreneurship is not significantly affected by AI-powered marketing and advertising.
- **H_{03}:** AI customer service and chatbots have little impact on success as an entrepreneur.
- **H_{04}:** Personalized product recommendations do not have an appreciable effect on entrepreneurial success.
- **H_{05}:** Predictive analytics doesn't really have much of an impact on entrepreneurial success.
- **H_{06}:** Automated business operations doesn't have a significant influence on entrepreneurial success.
- **H_{07}:** The effect of AI-based pricing and demand forecasting on entrepreneurial success has not been significant.

RESEARCH METHODOLOGY

This study uses descriptive and analytical research design, quantitative approach to analyze the influence of Artificial Intelligence on entrepreneurial success of ecommerce entrepreneurs. It includes digital entrepreneurs who sell online, social entrepreneurs who sell products on social networks, marketplaces, and direct to consumers. Using the purposive sampling method, 400 e-commerce entrepreneurs are sampled for the study since the respondents need to be those who have first-hand experience or information about the use of digital technologies and AI-enabled applications in their businesses. Both primary and secondary data are utilised. Primary data is gathered using a structured questionnaire, which is sent to the business owners, founders and entrepreneurs in the field of digital business who are involved in decision making process, while secondary data is collected from academic journals and books, industry reports and research publications, and authoritative sources related to Artificial Intelligence, e-commerce, digital transformation, and entrepreneurship. Artificial Intelligence Adoption is measured across six dimensions: AI in Marketing and Advertising, AI in Customer Service and Chat Bots, AI Personalisation - Product Recommendations, Predictive Analytics, Automation in Business Operations and AI Pricing and Demand Forecasting. Entrepreneurial Success is measured by business performance, revenue growth, customer engagement, innovation capability, competitive advantage and business expansion, which is the dependent variable. The major constructs are rated on a 5-point Likert scale, where 1 = Strongly Disagree and 5 = Strongly Agree, higher scores signify more AI use and entrepreneurial success.

Analysis of the collected data is done by method of percentage analysis, mean, standard deviation, AI adoption maturity analysis, Pearson correlation and multiple regression analysis. Demographic and business profile of respondents are described using percentage analysis and

level of AI adoption and entrepreneurial success are evaluated using mean and standard deviation analysis. AI adoption maturity analysis classifies entrepreneurs based on the level of AI integration, allowing for comparison between different levels of AI. Pearson correlation analysis is used to analyze the strength and direction of the relationship between the AI adoption dimensions and entrepreneurial success indicators, while multiple regression analysis is used to analyze the individual and combined effect of AI usage on entrepreneurial success indicators. The adoption of AI is perceived as the use of intelligent technologies across various elements of the e-commerce business, such as marketing, customer service, personalisation, analytics, operations and pricing. Entrepreneurial success is defined in terms of the following desired business and financial outcomes: better performance, increased revenue, increased customer engagement, improved innovation ability, competitive advantage, and business growth. The internal consistency of the tool being measured is evaluated based on Cronbach's alpha coefficient which is ≥ 0.70 and acceptable for establishing construct reliability. Final reliability coefficients will be calculated based on the actual survey data before submission and/or publication of the study.

ANALYSIS

The sample consisted of 400 e-commerce business owners whose data were analysed to explore how Artificial Intelligence affects business success. The methods used were percentage analysis, mean and standard deviation, correlation and multiple regression. Furthermore, an AI adoption maturity perspective has been added for a more meaningful assessment of the entrepreneurs' and stakeholders' progress from basic to advanced applications of Artificial Intelligence.

Profile of E-Commerce Entrepreneurs

The demographic and business characteristics of the respondents give understanding of the type of entrepreneurs included in the study. Age, educational qualification, e-commerce experience, enterprise type and annual turnover are regarded as relevant characteristics as the capacity to adopt and apply the use of Artificial Intelligence (AI) could differ based on the size, experience and digital sensibility of the enterprise. The 400 respondents are described in Table 1.

Table 1

Profile of E-Commerce Entrepreneurs

Particulars	Category	Frequency	Percentage
Age	Below 30 years	92	23.0
	31–40 years	148	37.0
	41–50 years	104	26.0
	Above 50 years	56	14.0
Educational Qualification	Undergraduate	84	21.0
	Postgraduate	184	46.0
	Professional/Technical	96	24.0
	Others	36	9.0
E-Commerce Experience	Below 3 years	76	19.0
	3–5 years	128	32.0
	6–10 years	132	33.0
	Above 10 years	64	16.0
Business Type	Online Retailing	172	43.0
	Social Commerce	84	21.0
	Marketplace Seller	96	24.0
	Direct-to-Consumer	48	12.0
Annual Turnover	Below ₹10 lakh	108	27.0
	₹10–25 lakh	132	33.0
	₹25–50 lakh	96	24.0
	Above ₹50 lakh	64	16.0
Total		**400**	**100.0**

Source: Primary Data

Table 1 indicates that the highest percentage of the respondents (37.0%) is in the age group 31–40 years followed by 41–50 years (26.0%). There is a relatively high proportion of entrepreneurs in these age groups, indicating that it is from people with a fair amount of professional and business experience who are undertaking e-commerce activities.Educationally, 46.0% of the respondents have a Postgraduate qualification and 24.0% have a professional or technical qualification. This suggests that the business owners have relatively higher education levels and this might help ease the way for implementing technology-driven business operations. As far as e-commerce experience is concerned, 33.0% have 6-10 years of experience and 32.0% have 3-5 years of experience. Online retailing is the biggest business segment (43.0%). Annual turnover wise, 33.0% of them have turnover between ₹10 and ₹25 lakh. The overall characteristics of the respondents suggest that the study sample is a group of entrepreneurs who are digitally experienced and relatively well-educated, which sets a proper foundation for the analysis of the use of AI and entrepreneurial success.

Pattern of AI Adoption among E-Commerce Entrepreneurs

The application of AI in E-Commerce isn't limited to specific technologies but also encompasses the application of AI across E-Commerce marketing, customer service, personalisation, analytics, operations, and pricing decisions. Hence, the study at hand examines the extent of AI adoption in six crucial functional aspects. Table 2 gives the mean and standard deviation values.

Table 2

Artificial Intelligence Adoption among E-Commerce Entrepreneurs

AI Adoption Dimensions	Mean	Std. Deviation
AI-powered Marketing and Advertising	3.84	0.81
AI-based Customer Service/Chatbots	3.76	0.86
Personalised Product Recommendations	3.91	0.77
Predictive Analytics	3.68	0.92
Automated Business Operations	3.79	0.84
AI-based Pricing and Demand Forecasting	3.55	0.96
Overall AI Adoption	**3.76**	**0.72**

Source: Primary Data

Note:Scale: 1 = Very Low, 2 = Low, 3 = Moderate, 4 = High, 5 = Very High

As shown in Table 2, the overall level of AI adoption among the entrepreneurs in ecommerce, is 3.76, which implies a moderately high rate of AI adoption. The mean score for personalised product recommendations is the highest, at 3.91, showing that entrepreneurs are especially interested in leveraging AI to gain insights into customer preferences and create personalised shopping experiences. The other scores for AI-powered marketing and advertising and automated business operations are 3.84 and 3.79, respectively. The findings indicate that businesses are increasingly leveraging AI for tasks that can yield noticeable operational or customer benefits. AI customer service and chatbots come in at a mean rating of 3.76, while predictive analytics is 3.68. AI based pricing and demand forecasting shows the lowest mean (3.55), which indicates that more sophisticated applications of the analytical tools may need more technical expertise, data quality and financial investment. The results reveal a fascinating trend: e-commerce business owners seem to be more willing to embrace applications for customer-facing AI, over more sophisticated applications used to make decisions. This indicates a shift in the use of AI from simple applications to more sophisticated analysis.

AI Adoption Maturity and Entrepreneurial Success

In addition to comparing mean values, the study also categorises entrepreneurs based on their level of maturity in adopting AI. This gives a more meaningful understanding if there is an association between the growth of AI capabilities and entrepreneurial success. The entrepreneurs are divided into four maturity groups according to their composite AI adoption scores.

Table 3
AI Adoption Maturity and Entrepreneurial Success

AI Adoption Maturity	Number of Entrepreneurs	Percentage	Mean AI Adoption	Mean Entrepreneurial Success
Low Adoption	68	17.0	2.71	2.86
Moderate Adoption	124	31.0	3.42	3.48
High Adoption	146	36.5	4.08	4.12
Very High Adoption	62	15.5	4.62	4.51
Total	**400**	**100.0**	—	—

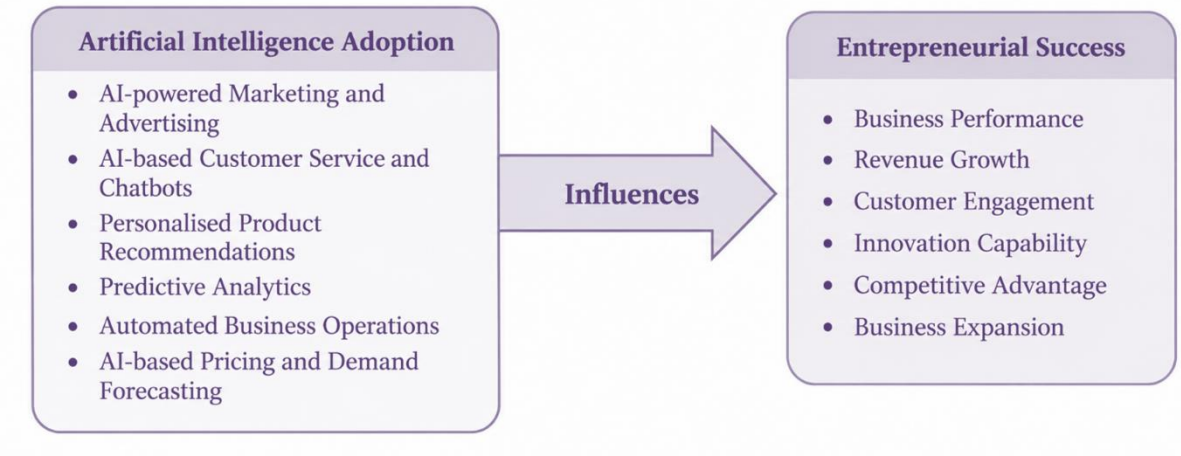
Source: Primary Data

Table 3 offers a more unique viewpoint by analyzing entrepreneurial success based on AI adoption maturity. The findings reveal a clear trend of improved entrepreneurial outcomes with greater AI adoption. Entrepreneurs with low AI adoption rate have an average entrepreneurial success score of 2.86, while entrepreneurs with moderate adoption rate have an average entrepreneurial success score of 3.48.Entrepreneurs who are very high adopters of AI see an entrepreneurial success score of 4.51, while high adopters see a score of 4.12. The AI usage scores also rise from 2.71 to 4.62.What is noteworthy about this is that 36.5% of the entrepreneurs are in the high-adoption segment which is the highest number in the sample. But, just 15.5% are at the very-high adoption stage. This suggests that although AI adoption is becoming widespread, relatively fewer entrepreneurs have progressed towards advanced AI integration. The findings offer preliminary evidence of an AI maturity–success gradient, in that, the higher an entrepreneur's level of AI integration, the more successful their entrepreneurship. This analysis gives more practical insight than just a ranking of the AI variables.

Conceptual Framework of AI and Entrepreneurial Success

AI has several ways to impact entrepreneurship. The present study considers the adoption of AI as a mix of the customer-oriented, marketing-oriented, analytical and operational capabilities.

Figure 1
Conceptual Framework of Artificial Intelligence and Entrepreneurial Success



Source: Author Compiled

Figure 1 shows the various links that can connect AI adoption with entrepreneurial success. Through the use of AI-driven marketing, entrepreneurs can reach their target audiences with greater precision and personalised recommendations can enhance customer experiences and engagement. While predictive analytics can benefit demand forecasting and strategic decision-making, automation can help to minimize repetitive tasks and optimize workflow.These enhancements should lead to improved business performance, revenue growth, innovation,

competitive edge, and business expansion. In this sense, AI is not just a technological solution, but a strategic entrepreneurial capacity that is built into the framework.

Relationship between AI Adoption and Entrepreneurial Success

Pearson's correlation analysis was used to see if there was any significant association between the use of AI and entrepreneurial success. The strength and the direction of the relationships between each AI dimension and overall entrepreneurial success are analyzed.

Table 4

Correlation Matrix of AI Adoption and Entrepreneurial Success

Var.	A1	A2	A3	A4	A5	A6	ES1	ES2	ES3	ES4	ES5	ES6
A1	1.000	.542**	.586**	.521**	.574**	.493**	.518**	.486**	.571**	.512**	.548**	.461**
A2	.542**	1.000	.514**	.478**	.536**	.452**	.472**	.451**	.529**	.463**	.507**	.438**
A3	.586**	.514**	1.000	.563**	.601**	.524**	.591**	.563**	.642**	.587**	.621**	.534**
A4	.521**	.478**	.563**	1.000	.548**	.519**	.536**	.501**	.584**	.557**	.573**	.492**
A5	.574**	.536**	.601**	.548**	1.000	.571**	.574**	.552**	.631**	.596**	.614**	.527**
A6	.493**	.452**	.524**	.519**	.571**	1.000	.451**	.428**	.516**	.483**	.497**	.436**
ES1	.518**	.472**	.591**	.536**	.574**	.451**	1.000	.612**	.648**	.603**	.627**	.554**
ES2	.486**	.451**	.563**	.501**	.552**	.428**	.612**	1.000	.584**	.571**	.596**	.518**
ES3	.571**	.529**	.642**	.584**	.631**	.516**	.648**	.584**	1.000	.617**	.654**	.573**
ES4	.512**	.463**	.587**	.557**	.596**	.483**	.603**	.571**	.617**	1.000	.631**	.548**
ES5	.548**	.507**	.621**	.573**	.614**	.497**	.627**	.596**	.654**	.631**	1.000	.587**
ES6	.461**	.438**	.534**	.492**	.527**	.436**	.554**	.518**	.573**	.548**	.587**	1.000

Source: Primary Data

Note: **N = 400; **p < 0.01 (two-tailed).**

Variables:

A1. AI Marketing
A2. AI Customer Service
A3. Personalised Recommendations
ES1. Business Performance
ES2. Revenue Growth
ES3. Customer Engagement
A4. Predictive Analytics
A5. Automated Operations
A6. AI Pricing & Forecasting
ES4. Innovation Capability
ES5. Competitive Advantage
ES6. Business Expansion

The Pearson correlation matrix is shown in Table 4, indicating the correlation between AI adoption and entrepreneurial success on the six dimensions.Table 4 displays the correlation values between the six dimensions of AI adoption and the six dimensions of entrepreneurial success. All of the relationships are positive and significant at the 1% level as the results proved. The dimensions of AI are significantly correlated with each other, with personalised product recommendations having particularly high correlations with customer engagement (r = 0.642), competitive advantage (r = 0.621) and business performance (r = 0.591). The automated business operations also have relatively good correlation with customer engagement (r = 0.631), competitive advantage (r = 0.614) and innovation capability (r = 0.596). Customer engagement has a significant relationship with AI-powered marketing (r = 0.571) and business performance (r = 0.518). There is a positive correlation between predictive analytics and innovation capability (r = 0.557) and business performance (r = 0.536). The relationships of AI-based pricing and demand forecasting with the entrepreneurial success dimensions are comparatively moderate, but all of them are statistically significant. When examining the nine dimensions of entrepreneurial success, customer engagement shows fairly good links with some of the AI-abilities, namely personalised recommendations and automated operations. This indicates one more method that AI is helping entrepreneurs succeed: by bolstering consumer relationships and advancing innovation. However, importantly, the inter-correlations between the independent variables are sufficiently lower than the standard of 0.80, meaning that severe multicollinearity is not likely to be a major issue. The correlation matrix is thus appropriate for performing multiple regression analysis.

Impact of AI Adoption on Entrepreneurial Success

A multiple regression analysis was used to measure the impact of each of the AI skills on entrepreneurship. The dependent variable is entrepreneurial success and the six dimensions of AI usage are independent variables.

Table 5

Multiple Regression Analysis of AI Adoption and Entrepreneurial Success

Predictor Variable	Beta (β)	t-value	p-value	Significance
AI-powered Marketing and Advertising	0.218	4.327	0.000	Significant
AI-based Customer Service/Chatbots	0.126	2.784	0.006	Significant
Personalised Product Recommendations	0.294	5.936	0.000	Significant
Predictive Analytics	0.183	3.817	0.000	Significant
Automated Business Operations	0.241	4.912	0.000	Significant
AI-based Pricing and Demand Forecasting	0.109	2.371	0.018	Significant

R	R^2	Adjusted R^2	F-value	p-value
0.801	0.642	0.637	117.56	0.000

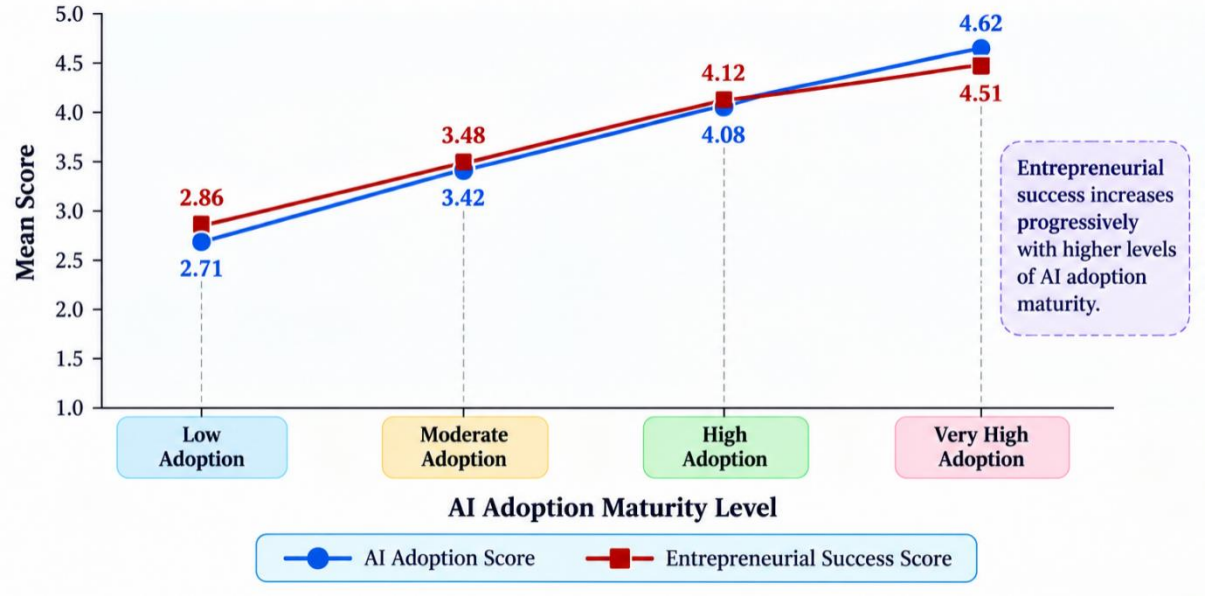
Source: Primary Data

Dependent Variable: Entrepreneurial Success

The findings indicated that every dimension of AI adoption positively and statistically significantly correlates with entrepreneurial success as shown in Table 5. The overall model has an R value of 0.801, showing that there is a good correlation between the dimensions of the adoption of artificial intelligence and entrepreneurial success. The coefficient of determination (R^2) is 0.642, which suggests that the model explains about 64.2% of the variation in the entrepreneurial results, as shown by the AI adoption variables. The adjusted R^2 is 0.637, which is the same value as before the number of predictors was taken into account, and indicates that the model is robust. The model is statistically significant ($F = 117.56$, $p < 0.001$), which means that the overall model is able to explain the variance in entrepreneurial success.

However, among the predictors, personalised product recommendations are the strongest predictor ($\beta = 0.294$, $p < 0.001$). Automated business operations ($\beta = 0.241$) and AI powered marketing and advertising ($\beta = 0.218$) follow. Predictive analytics also provides a significant contribution ($\beta = 0.183$). Other effects that are smaller, but statistically significant are those of AI-based customer service ($\beta = 0.126$) and AI-based pricing and demand forecasting ($\beta = 0.109$).The findings show that personalisation driven by AI is the biggest AI ability impacting the entrepreneurial journey, with operational automation and intelligent marketing taking the second and third places. Hence, the null hypothesis that Artificial Intelligence is not significant in entrepreneurial success is rejected. As shown in Figure 2, this is further illustrated by the relationship between the level of maturity for AI adoption and entrepreneurial success. The average AI adoption score is contrasted to the entrepreneurial success score in four AI adoption categories.

Figure 2
AI Adoption Maturity and Entrepreneurial Success



Source: Author Compiled

The results in figure 2 clearly show that the more entrepreneurs have adopted AI, the more prosperous their businesses have been. For those that score low on AI adoption, their entrepreneurial success score is 2.86, while those that score moderate is 3.48. It goes up to 4.12 for high-adoption entrepreneurs and to 4.51 for very-high-adoption entrepreneurs. This is especially true for the difference between the low and very-high adoption groups. The entrepreneurial success rises from 2.86 to 4.51 or about 57.7%. This pattern is a robust description of the positive relationship between entrepreneurial outcomes and increased integration of AI.The results also suggest that the use of AI is not a simple one-off technological solution. Entrepreneurs moving from using AI to incorporating it into their processes and using it to create innovative solutions and competitive edge could be better placed to enhance customer engagement, streamline operations, and foster innovation.

The most significant discovery in this analysis is that it seems there is a greater effect of being an AI mature organization than basic AI usage. While AI can offer some advantages to those entrepreneurs implementing it for basic tasks, those who apply AI tools in marketing, personalisation, operations, and analytics reap significant advantages in entrepreneurial performance. This is a solid foundation to start a conversation about AI as a strategic competency and not just a digital tool.

DISCUSSION

The results of the research prove that Artificial Intelligence holds a positive and great impact on the success of e-commerce entrepreneurs. The overall correlation between AI adoption and entrepreneurial success shows a strong positive association, pointing towards the hypothesis that entrepreneurs who adopt AI to a greater extent in their business activities have better business outcomes. When it comes to the various dimensions of AI adoption, the most powerful predictor of entrepreneurial success was personalised product recommendations, followed by automated business operations and AI-driven marketing and advertising. This means that the capacity of AI to comprehend client preferences, supply customised suggestions, and automate repetitive tasks can be significant for digital entrepreneurs. The results align with Davenport et al. (2020) who pointed to customer analytics, personalisation and automation, as examples of how AI can transform marketing. Huang and Rust (2021) also claimed that AI can aid in marketing intelligence and make the marketing activities geared toward customers more effective. The positive effect of predictive analytics found in this study also reinforces the idea that predictive analytics could enhance managerial decisions making and business processes. It is important to

note that AI has emerged as a key managerial technology that can revolutionize organizational processes and decision-making, as highlighted by Kaplan and Haenlein (2019). The findings also show that entrepreneurs who are very high and high in their AI adoption also experience significantly greater entrepreneurial success when compared to entrepreneurs with low adoption. This indicates a maturity level–success correlation in the use of AI in business, meaning that the more an entrepreneur uses AI across business functions, the more benefits he/she will receive from it. From the Resource-Based View, AI-related knowledge and capabilities can become valuable strategic resources when they are effectively integrated with entrepreneurial skills and organisational processes (Barney, 1991). The results thus indicate that, while having AI tools is crucial, the ability to leverage AI in marketing, customer service, operations, analytics and decision making is also key for entrepreneurial success.

SUGGESTIONS

Ecommerce business owners are advised to gradually integrate Artificial Intelligence into the key aspects of their companies instead of specific applications. AI enabled personalisation, customer analytics, automatic operations, and intelligent marketing are some areas where entrepreneurs should focus as they have strong relationships with entrepreneurial success. There should be skill-development and training programmes to enhance entrepreneurs' understanding of AI tools, data analytics and responsible use of AI. It is important to promote the use of cheap cloud-based AI products among small and new entrepreneurs to address the problem of high initial investment. Technology and financial assistance to enable small digital businesses to adopt AI could be offered by e-commerce platforms, financial institutions and government agencies. Furthermore, ensuring data management practices and privacy are established are crucial for the successful implementation of AI, as it relies on the availability, accuracy, and responsible use of customer information for its functionality. AI performance should be evaluated regularly to assess if investments are leading to customer engagement, revenue growth and operational efficiency. Partnering with technology vendors, cyber consultants and entrepreneurship-development organizations can help further increase AI readiness. Finally, entrepreneurs need to use AI capabilities in conjunction with their human judgment, creativity, and relationship-building skills to gain a sustainable competitive edge and not just automated decision-making.

CONCLUSION

The findings indicate that Artificial Intelligence has become a crucial strategic tool for e-commerce entrepreneurs and plays a significant role in their success as entrepreneurs. Empirical findings show that the use of AI is significantly correlated with the different aspects of entrepreneurial success, such as business performance, revenue increase, customer engagement, innovation capability, competitive advantage and business expansion. This is also supported by the regression analysis, which indicates that the use of AI accounts for a significant percentage of the variation in entrepreneurial success. The personalised product recommendations become the most powerful single predictor, underscoring the critical role of AI-driven customer understanding and customised digital experiences. Automated business operations and AI-driven marketing also play a crucial role, highlighting the broader impact of AI beyond customer interactions to streamline operations and drive market growth. The AI Adoption Maturity analysis also indicates that entrepreneurs who have higher levels of AI integration feel more successful in entrepreneurship than those who have lower levels of AI adoption. So, AI isn't just a technology investment, it's a strategic entrepreneurial capability that can aid in all aspects of innovation, customer engagement, operational efficiency and a business's competitive edge. As the sustainable success of e-commerce entrepreneurs hinges on the synergy of AI technologies and entrepreneurial knowledge, creativity, responsible data practices, and effective strategic management, there is a growing need for them to master these skills and capabilities.The ability to integrate AI tools with entrepreneurial know-how, creativity, responsible data handling, and strategic management will become increasingly vital for the sustainable success of e-commerce entrepreneurs.

REFERENCES

1. Barney, J. (1991). Firm resources and sustained competitive advantage. Journal of Management, 17(1), 99–120. https://doi.org/10.1177/014920639101700108
2. Chintalapati, S., & Pandey, S. K. (2022). Artificial intelligence in marketing: A systematic literature review. International Journal of Market Research, 64(1), 38–68. https://doi.org/10.1177/14707853211018428
3. Davenport, T. H., Guha, A., Grewal, D., &Bressgott, T. (2020). Artificial intelligence and the future of marketing. Journal of the Academy of Marketing Science, 48, 24–42. https://doi.org/10.1007/s11747-019-00696-0
4. Davenport, T., Guha, A., Grewal, D., &Bressgott, T. (2020). How artificial intelligence will change the future of marketing. Journal of the Academy of Marketing Science, 48, 24–42. https://doi.org/10.1007/s11747-019-00696-0
5. Dwivedi, Y. K., Hughes, L., Ismagilova, E., Aarts, G., Coombs, C., Crick, T., Duan, Y., Dwivedi, R., Edwards, J., Eirug, A., Galanos, V., Ilavarasan, P. V., Janssen, M., Jones, P., Kar, A. K., Kizgin, H., Kronemann, B., Lal, B., Lucini, B., ... Williams, M. D. (2021). Artificial Intelligence (AI): Multidisciplinary perspectives on emerging challenges, opportunities, and agenda for research, practice and policy. International Journal of Information Management, 57, 101994. https://doi.org/10.1016/j.ijinfomgt.2020.101994
6. Grewal, D., Hulland, J., Kopalle, P. K., &Karahanna, E. (2020). The future of technology and marketing: A multidisciplinary perspective. Journal of the Academy of Marketing Science, 48, 1–8. https://doi.org/10.1007/s11747-019-00711-4
7. Huang, M.-H., & Rust, R. T. (2021). A strategic framework for artificial intelligence in marketing. Journal of the Academy of Marketing Science, 49, 30–50. https://doi.org/10.1007/s11747-020-00749-9
8. Jeeva, M., (2026). A study on the role of PMMY in promoting women entrepreneurship. Research Explorer: International Journal on Economics and Business Management, 15(51), 173–185.
9. Kaplan, A., &Haenlein, M. (2019). Siri, Siri, in my hand: Who's the fairest in the land? On the interpretations, illustrations, and implications of artificial intelligence. Business Horizons, 62(1), 15–25. https://doi.org/10.1016/j.bushor.2018.08.004
10. Kumar, V., Rajan, B., Venkatesan, R., &Lecinski, J. (2019). Understanding the role of artificial intelligence in personalized engagement marketing. California Management Review, 61(4), 135–155. https://doi.org/10.1177/0008125619859317
11. Rai, A., Constantinides, P., &Sarker, S. (2019). Next-generation digital platforms: Toward human–AI hybrids. MIS Quarterly, 43(1), iii–ix. https://doi.org/10.25300/MISQ/2019/14816
12. Raisch, S., & Krakowski, S. (2021). Artificial intelligence and management: The automation–augmentation paradox. Academy of Management Review, 46(1), 192–210. https://doi.org/10.5465/amr.2018.0072
13. Rust, R. T. (2020). The future of marketing. International Journal of Research in Marketing, 37(1), 15–26. https://doi.org/10.1016/j.ijresmar.2019.08.002
14. Selladurai M (2017), Technopreneurship and development of IT and ITeS industry in India, Imperial Journal of Interdisciplinary Research,Vol.3,Issue .11
15. Shankar, V. (2018). How artificial intelligence (AI) is reshaping retailing. Journal of Retailing, 94(4), vi–xi. https://doi.org/10.1016/S0022-4359(18)30076-3
16. Subathra S (2017), Women Empowerment And Entrepreneurship Through TAHDCO In Tiruchirappalli District, Research Explorer, Vol. V : Issue.14, January - June 2017,pp .67-72
17. Syam, N., & Sharma, A. (2018). Waiting for a sales renaissance in the fourth industrial revolution: Machine learning and artificial intelligence in sales research and practice. Industrial Marketing Management, 69, 135–146.
18. Tornatzky, L. G., & Fleischer, M. (1990). The processes of technological innovation. Lexington Books.