



“Relationship between Artificial Intelligence and Business Performance in SMEs”

by

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Abstract

Artificial Intelligence is an emerging technology in industry sectors. It helps to reduce human errors in accounting, gives a faster response to customers, and reduces the material costs in industries. The main purpose of this study is to analyze the relationship between the Artificial Intelligence adoption in industries and business performance, particularly in small and medium-sized industries. The business performance refers to productivity, profit, and cost reduction in companies. In this study, we use a quantitative research method to analyze the data. The data used in this study are secondary in nature. The collected data was analyzed by using IBM SPSS to obtain accurate results. In this study Pearson Correlation test in SPSS is used to examine the relationship between the variables. Based on our results, it can be understood that Artificial Intelligence only contributes a very low level in Small and Medium Sized industries. Overall, this study adds to the existing knowledge on this field and gives reasonable insights for industries to develop their business using Artificial Intelligence.

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Introduction

Artificial Intelligence has now become an essential technological innovation, playing an essential role in the growth and development of small and medium-sized enterprises. Artificial Intelligence increases the resilience and functional ability of supply chains. It strengthens business performance by improving data processing, security, and information traceability capabilities. Furthermore, Artificial Intelligence plays a crucial role in refining decision-making ability, operational effectiveness, and productivity of SME's, thereby enabling them to achieve greater competitiveness and long-term organizational sustainability, Syed Abdul Rehman Khan [2024]. During COVID-19, SMEs used AI technologies like Customer behavior analysis, Supply chain monitoring, Automated customer service, and Inventory management in their businesses. Artificial Intelligence reduces financial risk, employer-related risks, operational risks, and partnership risks in SME's businesses. Artificial Intelligence increased SMEs' organizational stability by helping them improve decision-making power and increase productivity. Artificial Intelligence predicts consumer requirements and helps to improve online communications. Artificial Intelligence also increases online sales operations in SMEs. Compared to small enterprises, medium enterprises attained better benefits from Artificial Intelligence technologies, Nick Drydakis [2022].

Artificial Intelligence assists SMEs in making business models and amplifying market responsiveness. Artificial Intelligence improves customer communications by encouraging SMEs to personalize customer service, enhance customer satisfaction, and improve online marketing activities. The main challenge is a lack of financial resources. The establishment and utilization of Artificial Intelligence technologies require considerable financial investment, particularly for system instalments and maintenance. Due to these substantial costs, SMEs face significant challenges in adopting Artificial Intelligence techniques in their business (Leon Oldemeyer [2024]. The adoption of Artificial Intelligence-based automation in industrial systems substantially reduces the production process by reducing manufacturing time and increasing overall operational speed. It also promotes the early detection of system failures. Artificial Intelligence contributes to cost reduction in industries by lowering operational expenditures and optimizing energy consumption. However, despite these advantages, the implementation of Artificial Intelligence systems involves substantial costs. Furthermore, the lack of skilled workers capable of operating

and maintaining Artificial Intelligence techniques remains a major challenge for SMEs to adopt Artificial Intelligence in their businesses, Muhammad Waqar [2024].

Artificial Intelligence is extensively used in cybersecurity systems, risk prediction tools, and high-frequency trading to process large amounts of data quickly and accurately in financial marketing. Artificial Intelligence significantly increases trading performance by implementing trades at high speed, using algorithms for high profit, and identifying market trends. Application of Artificial Intelligence techniques in the financial marketing sector facilitates the early detection of fraud and real-time monitoring of financial transactions, Mohammad El Hajj [2023].

According to Parisa Jourabchi Amirkhizi [2025], Gen Artificial Intelligence assists in reducing environmental impacts by improving intelligent resource allocation and minimizing practices.

Ishrak Alim[2025] states that organizations adopting Artificial Intelligence and Blockchain technologies experience significant improvements in innovation capability, digital transformation, and competitive performance. Furthermore, these technologies strengthen inventory management, operational coordination, and supply chain transparency, thereby enhancing organizational effectiveness and business sustainability.

Maicon Roberto Martins [2025], identified in his study that Artificial Intelligence -driven predictive systems enable organizations to anticipate market trends, consumer behavior, financial risks, and operational challenges in advance, thereby strengthening strategic decision-making and improving organizational adaptability.

“There is an uneven level of adoption across countries owing to infrastructural differences, digital literacy, and policy support. In stark contrast are India and Sri Lanka, which share a rapid, network-type diffusion of innovation. At the same time, Bangladesh and Nepal remain more inclined towards the individual acceptance level of innovation based upon ease of use and perceived benefits”, SSM Sadrul Huda [2025].

AI adoption is more strongly found in industries that are focused on improving efficiency as well as those are innovation-oriented, Sanjit K [2025]. According to Lukáš Klarner [2023], the level of Artificial Intelligence adoption among SMEs in the V4 countries generally very low. In addition Slovakia and Hungary has a lower Artificial Intelligence adoption rate comparing to

Czech republic and Poland, they are higher Artificial Intelligence adoption rate. The study emphasizes that there is no substantial Artificial Intelligence adoption differences across the countries.

Numerous studies have concentrated on examining the challenges involved in the adoption of Artificial Intelligence technologies and the benefits organizations derive from their implementation. In contrast, the present research extends beyond these dimensions by investigating the manner in which Artificial Intelligence contributes to the growth and development of small and medium enterprises.

Research Objective

The main aim of this study is to analyze the impact of Artificial Intelligence adoption on Small and Medium Scale industries' business performances. Accordingly, this study attempts to address the following research objectives.

- To examine the relationship between years using Artificial Intelligence and business productivity.
- To analyze the relationship between years of Artificial Intelligence implementation and company profit.
- To examine the relationship between annual cost reduction and years of Artificial Intelligence implementation.

Research Question

- “What is the relationship between company productivity and years using AI?”
- “What is the relationship between company profit and years using Artificial Intelligence?”
- “What is the relationship between annual cost reduction and the years during which AI technology was implemented in that organization?”

Literature Review

According to Apoorva Vikrant Kulkarni [2024], Artificial Intelligence supports social sustainability by enabling accurate and rational decision-making, improving customer satisfaction, and reducing the work pressure of employees. However, the research also highlights certain risks, like job displacement concerns. In addition, AI system involves a large amount of personal data,

and SMEs are required to adopt proper ethical frameworks for data security and transferability. The study also emphasizes that organizations should ensure adequate training for employees and strengthen digital infrastructure to support the effective and responsible implementation of Artificial Intelligence technologies.

Artificial Intelligence plays a crucial role in supporting entrepreneurial ideas, stimulating customer communication, and assisting the development of marketing strategies. Moreover, Artificial Intelligence contributes to increased productivity and reduces the time to complete projects. However, the benefits of Artificial Intelligence are not distributed equally among all. Entrepreneurs who have awareness and proper training in Artificial Intelligence derive greater benefits, whereas those with low experience in Artificial Intelligence gain comparatively lower advantages. Additionally, Gen Artificial Intelligence does not replace human capabilities; rather, it enhances human capabilities, Nicholas G. Otis [2024].

“AI functions as a key enabler linking technological readiness and organizational capability to improved marketing outcomes such as customer loyalty, brand trust, and resource efficiency. SMEs that cultivate leadership, innovation culture, and digital literacy demonstrate better adaptability and sustainability performance compared to those focusing solely on technology adoption”, IFills Prayoga [2026].

According to Saeed Badghish [2024], the adoption of Artificial Intelligence within small and medium-sized enterprises contributes substantially to increased productivity, improved operational performance, and the development of long-term competitive capabilities. The research further reveals that Artificial Intelligence technologies are increasingly accepted by SMEs because AI tools are relatively easy to use and compatible with existing business processes and operational systems. Moreover, the successful implementation of Artificial Intelligence largely depends on the availability of skilled employees, adequate training programs, and the overall organizational readiness of the enterprise. The study also notes that competitive business environments and favorable government support policies act as major catalysts encouraging SMEs to adopt and utilize AI-driven technologies for sustainable growth and improved business performance.

Artificial Intelligence increase the competitiveness of industries. It provide services based on the customer requirements, Ruben Machucho [2025].

“SMEs need to cope with important adoption hurdles while using existing Gen AI interfaces and/or customizing GenAI applications. This may include mitigating the threat to employees professional identities, dealing with the complexity and opacity of algorithms, and reducing algorithmic aversion”, Kumaran Rajaram [2024].

Alexandre M. Nascimento [2022] explains that SMEs are more likely to adopt Artificial Intelligence technologies when they clearly understand the benefits and practical usefulness of Artificial Intelligence in business activities. The study further indicates that user-friendly Artificial Intelligence systems are more readily accepted and adopted by SMEs. In addition, the research emphasizes that the quality of an organization's technological infrastructure serves as a major determining factor influencing the adoption of Artificial Intelligence into the business. The author also argues that increasing market competition encourages industries to adopt Artificial Intelligence to enhance efficiency and maintain competitiveness. However, the study highlights that the lack of financial support and technological complexities continues to act as a major challenge to adopting Artificial Intelligence in Small and Medium businesses.

Md Hasan Zamil [2025] found that Artificial Intelligence analytical systems generate more precise financial forecasts than conventional forecasting approaches. The study further states that Artificial Intelligence supports SMEs in forecasting future cash flows and helps to improve budget planning. Artificial Intelligence detects market fluctuations at an early stage. In addition, the research emphasizes that Artificial Intelligence technologies help organizations identify potential crises situation in advance and improve their preparedness for uncertain business conditions. However, the author identifies inadequate technological infrastructure, high implementation costs, and insufficient training as major challenges to the successful adoption of Artificial Intelligence technology in SMEs.

Artificial Intelligence positively influences green innovation practices within Small and medium-sized industries. Artificial Intelligence contributes to the reduction of industrial waste and enhances the efficiency and utilization of organizational resources, thereby supporting environmentally sustainable business operations, Panteha Farmanesh [2025].

Artificial intelligence contributes certainly to the long term sustainability of organizations by improving business flexibility, strategic adaptability, and operational resilience. It also promotes continuous organizational development by enabling more effective decision making,

improved operational efficiency, and adaptive strategic planning capabilities, Shohoni Mahabub [2025].

The use of Artificial Intelligence enables SMEs to monitor energy consumption effectively and to anticipate crises in advance. Low carbon management has positive impact on sustainable business performance, long term competitiveness, and overall operational efficiency Mélanie Roux [2023].

“Top management support significantly impacts behavioral intention to adopt AI, inferring that top insurance companies are familiar with the technology and its benefits. Executives may help in AI adoption and implementation by getting involved in the process and allocating resources. For digital innovation such as AI, a company’s senior leaders must use AI as a strategic core competency as they can predict their staff’s purpose, vision, policy, and direction”, Somya Gupta [2022].

According to Hirenkumar Kamleshbhai Mistry [2024], Artificial Intelligence-driven automation reduces the burden of manual labor and improves the speed and accuracy of managerial decision-making. Furthermore, SMEs can effectively compete with larger industries by leveraging Artificial Intelligence-based systems. Moreover, the study finds that organizations adhering to conventional business practices are increasingly disadvantaged in comparison to digitally transformed industries.

The strong adoption of Artificial Intelligence in business is depends not only on technological capabilities, but also on organizational, ethical, and business disciplines. For effective Artificial Intelligence integration, strong training, leadership support, and a governance mechanism are very important, Stephanie Kelley [2022].

“AI powered chatbots and virtual assistants can provide instant and personalized responses to customer inquiries, improving customer satisfaction and reducing response times. Machine Learning algorithms can analyze vast amounts of data, such as customer preferences and behavior, to offer tailored recommendations and suggestions for travel itineraries, accommodation, and activities”, Miguel-Ángel García-Madurga [2023].

Artificial Intelligence not reducing job opportunities, its reshapes the employment structure. Artificial Intelligence automation techniques are displaces the routine work. It automatically creates new skill oriented opportunities. Net employment impact of AI is depends on the level of digital integration within the economy, Yang Shen [2024].

“Gen AI and language models are deployed in firms where practitioners have to participate in the decision-making process in order to provide adequate explanations to maintain judicial transparency and reduce machine or human errors. The investors and stakeholders are responsible for utilizing GAI to create more business opportunities. The use of GAI and LLMs in various industries to manufacture new products or provide services has to confirm to the idea of human identity, rights, freedom, cultural diversity and inclusiveness” Arpan Kumar Kar [2023].

In SMEs, the level of Artificial Intelligence adoption remains at a relatively early and nascent stage. The application of Artificial Intelligence is not yet fully integrated across organizational functions, instead, it’s primarily utilized for specific, task oriented purposes within limited operational areas, Julia Schwaeye [2024].

In Small and Medium sized industries, there is a lack of well established definition of Artificial Intelligence adoption. There is a scarcity of longitudinal research that systematically tracks the progression of AI development over time. Furthermore, the difficulty in clearly differentiating Artificial Intelligence applications from other digital technologies creates conceptual ambiguity. These factors contribute to the limited and inconsistent adoption of Artificial Intelligence in SMEs, Esther Sanchez [2025].

“Various cobots have been widely applied in various areas. In this areas include communication robots in public areas. These logistic or supply chain robots move materials inside a building and articulated or industrial robots assists in automating tasks that are not ergonomically sound, such as assisting individuals in carrying large parts, or assembly lines. Since the cobots and robot can both undertake similar tasks, the differences between the two approaches were demonstrated to highlight their usage and to show which is better than the other in certain scenarios”, Alberto Borboni[2023].

Excessive dependence on Artificial Intelligence systems increases the risk of decision-making overly being influenced by algorithmic outputs. Moreover, opacity of algorithmic processes reduces transparency in how decisions are generated and justified. Furthermore, managerial and executive understanding of Generative Artificial Intelligence tools remains limited, affecting effective utilization. The field of Gen AI is still in a developmental stage, it necessitates further comprehensive and rigorous research to establish stronger empirical and theoretical grounding, Oscar Lopez-Solis [2025].

According to Seyyed Abdolhojjat Moghadasnian [2024], Artificial Intelligence plays a crucial role in Airline industries. It is improving flight scheduling and the route planning process. It assists in lowering operational expenditure while also enabling predictive maintenance by identifying potential technical issues in advance. Moreover, through enhanced route optimization, Artificial Intelligence reduces fuel consumption, increases operational efficiency, and minimizes waste generation within airline operations.

The adoption of Artificial Intelligence in SMEs significantly enhances digital value creation in a notable manner. Technological orientation serves as a crucial mediating mechanism in this relationship, acting as an important enabling factor that strengthens the overall impact of Artificial Intelligence on value generation, Muhammad Farhan Jalil [2024].

The effectiveness of AI based analytics is highly dependent on the quality and availability of data. SMEs that utilize Artificial Intelligence analytics achieve competitive advantage by leveraging advanced decision intelligence, which enhances the accuracy and strategic value of managerial decision-making processes, Md. Zafor Ikbal [2025].

BizAssistBot facilitates the automation of routine operational activities in SMEs. It improves customer engagement by improving communication properly. In addition, the system is developed with simple and intuitive interface, making it accessible and easy operable even for user with minimal knowledge about Artificial Intelligence, Rose Oluwaseun Adetunji [2026].

According to Petra Apell [2023], Artificial Intelligence based healthcare innovations are advancing at a rapid pace, however their adoption of implementation remains uneven across regions and industries. Furthermore, Artificial Intelligence contributes crucial role to building trust among healthcare professionals by improving confidence in data-driven clinical judgements and promoting evidence based medical practices.

Organizations adopting Artificial Intelligence benefit from improved strategic flexibility and rapid responsiveness to market changes. However, the lack of adequately skilled employers with Artificial Intelligence -related competencies continues to constitute a significant challenge in the industry, Irshadullah Asim Mohammed [2025].

“AI technologies are increasingly being integrate into the chemical industry to optimize processes, improve efficiency, and enhance safety. These technologies help in predictive maintenance, quality control, and real time monitoring, leading to reduced production costs and

improved product quality. However, challenges such as data privacy and security concerns may arise with the adoption of Artificial Intelligence in this industry” Shiza Malik [2024].

Research Gap

Overall, existing studies in this fields predominantly focus on the benefits that SMEs derive from the adoption of Artificial Intelligence technologies, as well as the associated challenges and constraints. However, there is a noticeable lack of research that specifically examines productivity levels and profit enhancement resulting from AI implementation. This study is therefore primarily directed towards addressing this gap in the literature by focusing on these underexplored dimensions. Moreover a considerable proportion of prior research has largely concentrated on large industries and the advanced technological systems associated with them. Comparatively limited attention has been given to SMEs, despite represent a crucial driving force of economic activity and national development. The present study examines the adoption and utilization of Artificial Intelligence techniques in SMEs, with particular emphasis on their impact on productivity enhancement, profit growth, and annual cost reduction. The growth and development of these organizations significantly contribute to overall economic expansion and sustainability. By calculating these dimensions, the study aims to bridge a reasonable gap in the existing literatures.

Theoretical Framework and Statement of Hypothesis

Dynamic Capability Theory

Ling Zhong [2026], Dynamic capability theory explains that when industries integrate with AI base on the environmental change, than only sustainable advantage arises. Beyond Yuan [2022], Dynamic Capability Theory argues that in fast-changing environmental conditions, organizations cannot attain sustained success by depending only on their existing resources and old techniques. They must continuously modify and update their functionalities in response to external changes to remain competitive and ensure long-term survival and performance. Based on this theoretical perspective, the present study analyze the extent to which the adoption of Artificial Intelligence has influenced the reduction of annual operational expenditures within organizations following its implementation.

Artificial Intelligence helps to reduce costs in industries not only by using automated systems, but also by using decision-making and resource allocation. Artificial intelligence

significantly reduces labor costs and administrative costs. Industries that heavily integrate Artificial Intelligence into their business activities tend to generate higher cost savings, while simultaneously their overall expenditure is significantly reduced, Ibrokhim Ismanov [2024]. Based on the above, the following hypotheses are proposed.

H0: There is no significant relationship between annual company profit and years using AI

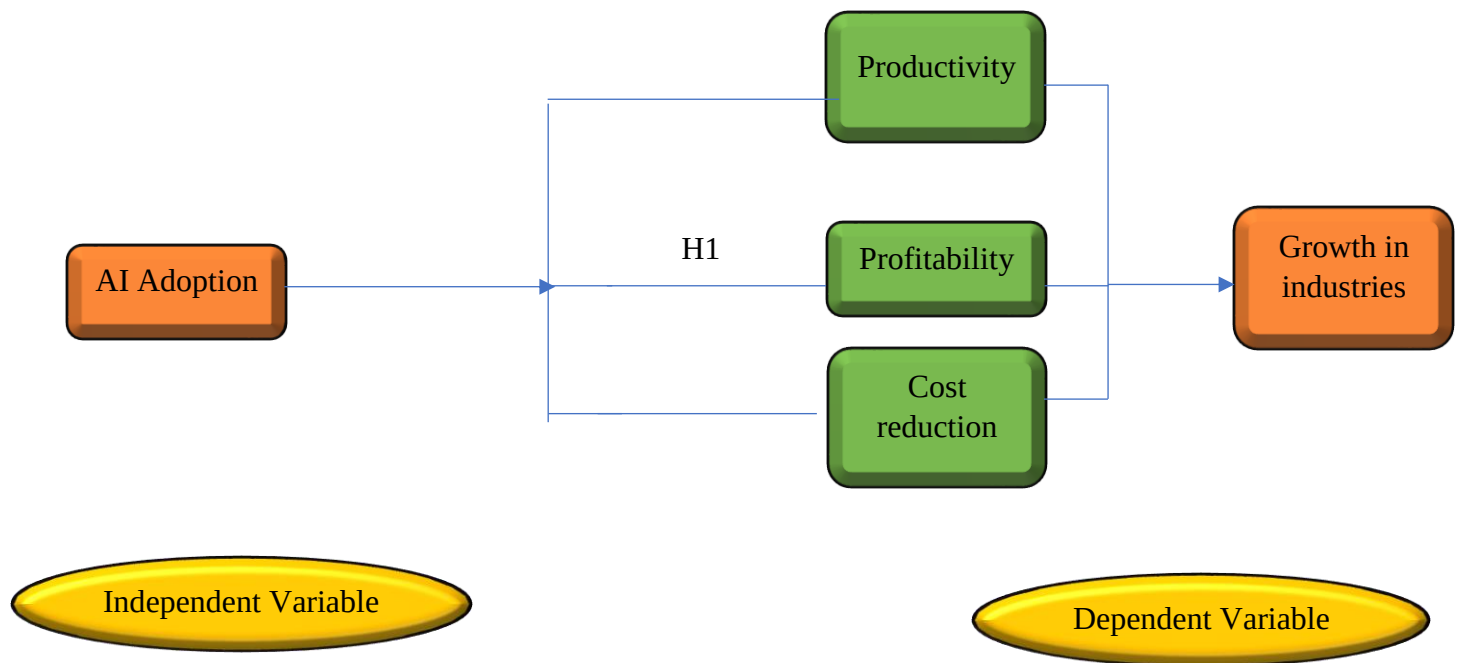
H1: There is a significant relationship between annual company profit and years using AI

Conceptual Framework

Using Artificial Intelligence in business, is significantly increases profitability and performance, Marcelo dos Santos Povoas [2025]. AI reduces maintenance requirement and expenditure in industries, Zhijuan Zong [2024].

Artificial Intelligence improves organizations budget process, thereby preventing cost overruns and strengthens overall productivity and performance efficiency of the industries, Muhammed Zakir Hossain [2024].

In this study, Artificial Intelligence adoption is an independent variable, and the productivity, profit, and cost reductions are dependent variables. The conceptual framework aims to correctly link the dependent and independent variables.



Research Methodology

This study is based on secondary data sourced from the Kaggle database. The data was originally adopted from a survey administered to industry owners and managers. Because they only had knowledge of how Artificial Intelligence technologies function in their business activities. The survey aimed to investigate the organizational processes and implementation practices associated with Artificial Intelligence adoption.

The questionnaire part has a lot of key variables related to the objectives of this study. Variables like annual revenue, productivity percentage, profit percentage, years using AI techniques are highly related to this research. These variables are effectively related to the core objective of this study. This data set measure the appropriate result to the organizational operations after using Artificial Intelligence in their business

Sampling and Data Collection

This study uses a purposive sampling method for data collection, and participants are selected based on the criteria highly related to the objectives of this study, Dalowar Hossan [2023]. The study is specifically designed to focus on organizations affiliated with artificial intelligence adoption, while excluding entities that are unrelated to technology-oriented operations.

In addition, the data set used in this research was not collected directly by the researcher; instead, it was derived from multiple secondary sources, such as global Artificial Intelligence adoption reports, digital transformation studies, and other relevant online repositories. The data set consist of systematically structured organizational indicators relating to Artificial Intelligence adoption, automation, practice, investment activities, production performance, and the impact of Artificial Intelligence implementation on employees and organizational processes.

The data is organized in the form of how the industries function. This data is chosen for this study because of its accuracy and purity. This is very suitable for quantitative analysis. This data give accurate statistical results for organizational functions.

Development of Variables

In this study, the independent variable is Artificial Intelligence adoption. Artificial Intelligence adoption refers to the level at which industries put artificial intelligence technologies into their business functional processes, decision-making processes, and overall managerial systems, Suddin Lada [2023]. The first dependent variable in this research is productivity. Productivity is how organizations develop their employees and technology into efficient results, Yuyan Luo [2024]. The second dependent variable, profit, is adopted from Eman Ibrahim Abde [2025]. Artificial intelligence increases profit by reducing expenditure, and decrease man power. The third dependent variable is cost reduction. It refers decrease in operational and managerial expenditure attained through the use of Artificial Intelligence techniques in organizations, Suman Adhikari [2024].

Data Analysis

Data preparation

Data preparation and all initial analysis are made with IBM SPSS. The unwanted rows and columns are deleted. This study used 150 data. This study used a secondary data set; all responses in this data set are fully completed. It was confirmed that all the participants' answers are fully completed.

Inferential Statistics

In this study, the relationship between the Artificial Intelligence adoption and industry performance are examine by the correlation test in SPSS. Mildred Muhyila [2024], “Correlation is a bivariate analysis that measures the strength of association between two variables and the direction of the relationship (Bonett, 2008). Correlation is a statistical technique used in bivariate analysis. Correlation analysis assesses the strength and direction of the relationship between two continuous variables”.

To achieve the first objective, the Pearson correlation test is used to examine the relationship between productivity and years using A Artificial Intelligence The ultimate goal of this statistical test was to determine the relationship between these two variables. Both variables were categorized by 3 scale points, where 1 represents low, 2 represents medium, and 3 indicates high level. Use of these scaled intervals supported the quantitative analysis of the correlation between productivity range and years using Artificial Intelligence.

Correlations

		productivity change percentage 1		years using ai
productivity change percentage 1	Pearson Correlation	1		.094
	Sig. (2-tailed)			.254
	N	149		149
years using ai	Pearson Correlation	.094		1
	Sig. (2-tailed)	.254		
	N	149		149

The above table represents the output of pearson correlation test. “The value of "r" is between -1 and +1. A positive "r" value means that if X increases, Y increases; if the value of "r" is negative, it means that if X increases, Y decreases or vice versa”, Nur Indri Rahayu [2024]. In this research correlation value $r = 0.094$ is very low, which indicates that the relationship between the two variables (productivity, years using AI) is terribly weak. Moreover, the significance value of this test is $p = 0.254$. According to Sanggyu Kwak [2023], researchers compare the p value into the significance level, common value is 0.05, if $p < 0.05$ is considered statistically significant, if $p > 0.05$, is considered not statistically significant. In this research, p value is greater than the standard significance level of 0.05 ($p > 0.05$), the relationship between productivity and years using Artificial Intelligence is not statistically significant. Therefore, in this selected sample, there is no linear relationship between the Artificial Intelligence implementation and the productivity range.

To achieve the second objective, the Pearson correlation test is used to examine the relationship between company profit and the years of using Artificial Intelligence. The main purpose of this statistical analysis was to examine the relationship between these two variables. Both variables were categorized by 3 scale points, where 1 represents low, 2 represents medium, and 3 indicates a high level. Use of these scaled intervals supported the quantitative analysis of the correlation between the company's profit range and the years using Artificial Intelligence.

Correlations

		years using ai	profit
years using ai	Pearson Correlation	1	.187*
	Sig. (2-tailed)		.022
	N	149	149
profit	Pearson Correlation	.187*	1
	Sig. (2-tailed)	.022	
	N	149	149

*. Correlation is significant at the 0.05 level (2-tailed).

The Pearson correlation analysis was conducted to examine the relationship between the years using Artificial Intelligence in business and the company profit. The closeness of the relationship between X and Y is called the correlation coefficient and is symbolized by "r." "The value of "r" is between -1 and +1. A positive "r" value means that if X increases, Y increases; if the value of "r" is negative, it means that if X increases, Y decreases or vice versa", Nur Indri Rahayu [2024]. The table shows that the correlation coefficient value is $r = 0.187$, indicating that the relationship between the profit and years using AI techniques in the company is positive but weak relationship. In addition, the significance value of this test is $p = 0.022$. According to Sanggyu Kwak [2023], researchers compare the p value into the significance level, common value is 0.05, if $p < 0.05$ is considered statistically significant, if $p > 0.05$, is considered not statistically significant. Therefore the relationship between profit and years using Artificial Intelligence is statistically significant at the level of 5%. Therefore, in this selected sample, there is a linear relationship between the Artificial Intelligence implementation and the profit levels. This result indicates that organizations with more years of Artificial Intelligence usage leads to experience slightly higher profit level.

To achieve the third objective, the Pearson correlation test is used to determine the relationship between cost reduction and the years of using Artificial Intelligence. Aim of this statistical test was to examine the relationship between these two variables. Both variables were measured using a three scale, where one is denotes low, two is denotes medium, and three indicates

a high level. Use of these scaling method enabled the quantitative analysis of the relationship between the company's cost reduction and the years using Artificial Intelligence.

Correlations

		years using ai	cost_reduction_percent
years using ai	Pearson Correlation	1	-.062
	Sig. (2-tailed)		.453
	N	149	149
cost_reduction_percent	Pearson Correlation	-.062	1
	Sig. (2-tailed)	.453	
	N	149	149

The above Pearson correlation table explains the relationship between the years using Artificial Intelligence in business and the company cost reduction. “The value of "r" is between -1 and +1. A positive "r" value means that if X increases, Y increases; if the value of "r" is negative, it means that if X increases, Y decreases or vice versa”, Nur Indri Rahayu [2024]. In this table the correlation coefficient value is $r = -0.062$, indicating that the relationship between the cost reduction and years using AI techniques in the company is a negative and very weak relationship. Furthermore, the significance value of this test is $p = 0.453$. According to Sanggyu Kwak [2023], researchers compare the p value into the significance level, common value is 0.05, if $p < 0.05$ is considered statistically significant, if $p > 0.05$, is considered not statistically significant. Therefore, the relationship between company cost reduction and years using Artificial Intelligence is not statistically significant. Therefore, in this selected sample, there is a no linear relationship between the Artificial Intelligence implementation and the company cost reduction levels. This result

indicates that organizations with more years of Artificial Intelligence usage does not positively affect the company cost reduction.

Findings

RO1:

A Pearson correlation test was conducted to examine the relationship between the years using Artificial Intelligence and the company's productivity. The results show that the correlation coefficient r is 0.094, and the significance value p is 0.254. Therefore, there is no significant relationship between years of using AI and the company's productivity.

RO2:

The Pearson Correlation test was conducted to analyze the relationship between the company's profit and the years using Artificial Intelligence. The results show that r is 0.187, a weak but positive correlation, and the p value is 0.022, which indicates that there is a statistically significant relationship between the two variables.

RO3:

A Pearson correlation test was conducted to analyze the relationship between the years using Artificial Intelligence and the company's cost reduction. The results indicate that the correlation coefficient r is -0.062, and the significance value p is 0.453. Therefore, the result shows a very weak and negative correlation; there is no significant relationship between years of using AI and the company's productivity.

Test Hypothesis

H0: There is no significant relationship between annual company profit and years using AI

H1: There is a significant relationship between annual company profit and years using AI

Correlations

		years using ai	profit
years using ai	Pearson Correlation	1	.187*
	Sig. (2-tailed)		.022
	N	149	149
Profit	Pearson Correlation	.187*	1
	Sig. (2-tailed)	.022	
	N	149	149

*. Correlation is significant at the 0.05 level (2-tailed).

A Pearson correlation test was performed to analyze the relationship between the annual profit of the company and the years using Artificial Intelligence techniques. “The value of "r" is between -1 and +1. A positive "r" value means that if X increases, Y increases; if the value of "r" is negative, it means that if X increases, Y decreases or vice versa”, Nur Indri Rahayu [2024]. In this analysis, the coefficient r is 0.187, significance value p is 0.022. In this study p-value is less than 0.05, the relationship is statistically significant. Therefore, the null hypothesis H0 is rejected and the alternative hypothesis H1 is accepted. It indicates that an increase in the number of years using Artificial Intelligence leads to a slight increase in the company’s profit level.

Limitations

This study has several limitations. The research was conducted using a quantitative research method based on a secondary data set collected on Kaggle. And the data did not cover all the industries; instead, it only covered Small and Medium Sized industries. This study fully focused on the adoption of Artificial Intelligence in SMEs' business performance. The performance varies based on the research; in this research, profit, cost reduction, and productivity are identified as performance. Adoption of Artificial Intelligence refers to years of using Artificial Intelligence techniques in business operations. Despite these limitations, this research gives useful insights into the relationship between Artificial Intelligence adoption and organizational performance.

Conclusion

The main purpose of this study is to examine the relationship between the years using Artificial Intelligence and the industrial activities in terms of productivity, profit, and cost reduction. The Pearson Correlation test was conducted to examine the relationships. In conclusion, it was found that there is no significant relationship between years of using Artificial Intelligence and productivity, and the company's cost reduction. When examining the profit and years using the Artificial Intelligence variable, it was found that there is a weak but positive relationship between the two variables. Therefore, the null hypothesis H0 (There is no significant relationship between annual company profit and years using AI) is rejected and the alternative hypothesis H1(There is a significant relationship between annual company profit and years using AI) is accepted. This research concludes that industries that have been using Artificial Intelligence in their business activities for a long period experience only a marginal level improvement in their profit. This study indicates that Small and medium-sized industries have not yet adopted Artificial Intelligence technologies in their business properly. Overall, this study concludes that Artificial Intelligence adoption does not have a significant impact on the business performance of SMEs

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