The Impact of Artificial Intelligence on Business Management Practices: A Pathway to Enhanced Performance

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Abstract: This research paper aims at studying the effect of applying artificial intelligence on business management, where the study adopted the descriptive method for theoretical concepts, in addition to the statistical approach by using the SPSS v25 program to analyze the questionnaire and test the hypotheses of the study. The results showed that there is a positive correlation between artificial intelligence and business management. The study recommended that, Organizations should actively seek feedback, enhance their AI solutions for better communication, and invest in training to ensure that employees can effectively leverage these tools.

Keywords: Artificial Intelligence, Business Management, Group of Enterprises, South-West of Algeria.
Jel Classification Codes: M10 ; O33

Introduction

Business operations today have reached a high level of complexity, characterized by challenging and demanding tasks that are often difficult for humans to manage effectively. The analysis of data and understanding customer needs have become essential for business success in the modern world. Companies now rely on valuable insights derived from data to formulate strategies that can significantly drive growth By integrating artificial intelligence (AI) into their operations, businesses have gained the ability to understand and engage with customers in unique ways. AI facilitates the automation of various business processes, leading to enhanced productivity and revenue generation while simultaneously reducing operational expenses. This transformative technology not only streamlines workflows but also empowers organizations to respond more adeptly to market demands and customer expectations.

1.1. Research Problem

What is the impact of applying artificial intelligence on business management?

1.2. Hypotheses:

In order to answer the problematic of the study, we formulated the following hypotheses:

H_0: There is no significant effect relationship between artificial intelligence and business management at significance level of 0.05.

H_1: There is a significant effect relationship between artificial intelligence and business management at significance level of 0.05.

1.3. Research Methodology

In order to answer the problematic of the study, we will rely on the descriptive approach when we review the basic concepts business management and artificial intelligence. We will also use the statistical method through the program of SPSS v25 for questionnaire analysis and testing the hypothesis.

1.4. The objective of the Study

This study aims to know how the applying of artificial intelligence affects the business management. In addition, to make sure of that, we address a group of economic and public enterprises located at the south-west of Algeria, then we will distribute a questionnaire and treat it through the SPSS program.

Literature review

Generalities about Business Management and Artificial Intelligence

Business Management definition

Business management represent the process of planning, organizing, leading, and controlling the resources of organization for achieving specific goals and objectives. It includes many functions and activities, which ensure the efficient operation of a business. Business management can be useful to apply in different contexts, such as small businesses, large corporations, non-profit organizations, and government agencies (Andy Mathews, 2020).

Importance of Business Management

The importance of business management can be cited as follows (A. Abdullah et al, 2020):

1. Achieve Organizational Goals: Set clear goals can be achieved through an effective management, which helps in developing successful strategies that make them achievable. This alignment ensures that all efforts are directed towards common objectives.
2. Optimization of Resource: Business management requires the allocation and utilization of resources, both of human, financial, and physical effectively and efficiently. Which lead to minimizes waste and maximizes productivity.
3. Flexibility in response to Change: To effectively respond to changes in market conditions, emerging technologies, and shifting consumer preferences in a dynamic business environment, organizations require efficient business management.
4. Development of Employee: The good management is that one which provide a positive work environment through encouraging employee for the continuous improvement. Organizations can enhance skills of its employee through training and motivating them.
5. Decision Making: Informed decisions could be taken the good business management that provide the suitable frameworks and tools. Managers play a role of analyzing data, assessing risks, and evaluating alternatives to make choices that benefit the organization.

Objectives of Business Management

The primary objectives of business management involve (Karam Pal, 2011):

- Maximization of Profit: The main objectives of economic organization is maximizing profits while maintaining quality and customer satisfaction.
- Customer Satisfaction: Gaining a competitive advantage and customer loyalty, wont achieved only through understanding and meeting their needs
- Sustainable Growth: One of the most Organization's aims for sustainable growth through expanding their market presence while ensuring long-term viability.
- Enhancement of Efficiency: Enhancing productivity and reducing costs, organizations need to work for continuous improvement in processes and operations.

Roles of Managers in Business Management

Business managers play different roles within an organization, including (A.Kumar & R. Sharma, 2000):

1. Planning: Drawing a course of action and fixing objectives to be achieved.
2. Organizing: Arranging resources and tasks to implement plans effectively.
3. Leading: Guiding, counselling and motivating employees towards organizational goals.
4. Controlling: Observing performance, comparing it with established standards, and making adjustments as necessary.

Fields of Specialization in Business Management

Business management includes several specialized fields, such as (A.Kumar & R. Sharma, 2000):

- Financial Management: Based on managing the organization’s finances, encompassing budgeting, forecasting, and investment analysis.
- Human Resource Management (HRM): Involves recruiting, training, and developing employees while managing employee relations.
- Operations Management: Concerned with overseeing production processes and ensuring efficient operations.
- Marketing Management: requires analyzing and understanding market needs, developing marketing strategies, and managing customer relationships.

Artificial Intelligence

Artificial Intelligence (AI) refers to the imitation of human intelligence processes through machines, especially computer systems. These processes encompasses learning, reasoning, problem-solving, perception, and language understanding. AI has been developed significantly since the years, where now it's a vital component across various industries.

Definition of AI

It can be defined as the computer science's branch that condensed on creating systems capable to perform tasks, which typically require human intelligence. This encompasses activities such as understanding natural language, recognizing patterns, making decisions, and solving complex problems. AI systems can be classified into different categories based on their capabilities and functionalities (J.Paul Mueller & L.Massaron, 2021).

Types of AI

It can be divided into the following types (Suman Soni, 2024):

1. Narrow AI (Weak AI): In this type, AI is specifically designed to carry out a specific task or a set of tasks. Examples include virtual assistants like Siri and Alexa, which can comprehend voice commands and execute functions such as setting reminders or playing music. Narrow AI operates within a defined set of limitations and cannot extend its knowledge beyond its programmed capabilities.
2. General AI (Artificial General Intelligence - AGI): AGI refers to a theoretical form of AI that possesses the ability to understand, learn, and apply knowledge across a wide range of tasks at a level comparable to human intelligence. While AGI remains largely conceptual today, it represents a long-term goal for many researchers in the field.
3. Super intelligent AI: This hypothetical form of AI would be exceeded human intelligence in virtually every aspect, encompassing creativity, problem-solving, and emotional understanding. Super intelligent AI is still a debate topic among experts concerning its feasibility and implications for society.
4. Reactive Machines: These represent the most basic types of AI systems which work solely on current data without any memory or capacity to learn from past experiences. They respond to specific inputs with predetermined responses.
5. Limited Memory AI: These systems capable to use past experiences to inform future decisions. For example, self-driving cars utilize limited memory AI to analyze data from previous trips to enhance their navigation capabilities.
6. Theory of Mind AI: This developed type of AI aims at understanding human emotions, beliefs, intentions, and other mental states that impact behavior. While research is ongoing in this area, practical applications stand limited.
7. Self-aware AI: It represent the most developed form of AI that would possess self-awareness and consciousness similar to humans. Actually, this level of AI does not exist and remains speculative.

Importance of AI

The importance of AI is represented by (Ralf T. Kreutzer & M. Sirrenberg, 2019):

- Efficiency and Automation: AI allow businesses to make repeated tasks automated, which lead to increases efficiency and reduces operational costs.
- Enhanced Decision-Making: Through analyzing large datasets quickly, AI brings insights that help organizations make informed decisions.
- Personalization: Businesses use AI to tailor goods and services according to individual customer preferences, which lead to improve customer satisfaction.
- Innovation: AI drives and promote innovation through creating new products and services that were previously unimaginable.

Applications of AI

AI is being utilized by different sectors including (John Medicine, 2019):

- Healthcare: Used for diagnostics, personalized medicine, and robotic surgeries.
- Finance: Used in fraud detection, algorithmic trading, and customer service chatbots.
- Retail: Used for inventory management, sales prediction, and personalized shopping experiences..
- Transportation: Used in autonomous vehicles and traffic management systems.

Challenges Facing AI

Even its potential benefits, the improvement and implementation of AI face several challenges (John Medicine, 2019):

- Ethical Concerns: Ethical questions raise from issues related to privacy, bias in algorithms, and the potential for job displacement.
- Data Security: The reliance on large datasets requires robust security measures to save sensitive information.
- Technical Limitations: The current AI systems often lack common sense reasoning and struggle with tasks requiring deep contextual understanding.

Artificial Intelligence (AI) has emerged as a transformative power in business management, where it reshaping how organizations act and make decisions. Its integration into several business functions enhances efficiency, drives innovation, and develops customer experiences. In the following, there are some key insights into the relationship between AI and business management (Ilias G. Maglogiannis, 2007).

The Role of AI in Business Management

1. Data-Driven Decision Making: AI allows businesses to analyze huge amounts of data in a quick and accurate manner. This ability enables managers to uncover patterns and insights that inform strategic decisions, leading to developed outcomes and competitive advantages. For example, companies such as Amazon utilize AI algorithms for analyzing customer behavior, enabling personalized marketing strategies that enhance customer's satisfaction and gaining their loyalty (Making, s.d.).

2. Operational Efficiency: AI make routine tasks automated, such as data entry and inventory management, which limits human error and frees up employees to concentrate on more complex responsibilities. This automation leads to increased productivity and operational efficiency. For example, AI-powered systems can optimize supply chain logistics by analyzing sales data and demand patterns, ensuring that products are available when needed (Tamara Franklin, 2024).

Enhanced Customer Experiences: AI technologies, such as chatbots and virtual assistants, can improve customer service through providing immediate answers to inquiries and personalized recommendations based on costumer tastes and preferences. This not only improves customer satisfaction but also enables human resources to focus on more intricate issues (Akash Takyar, 2024).

3. Predictive Analytics: The predictive analytics character of AI enables businesses anticipate future trends and customer behaviors. This can be achieved through analyzing historical data, which helps organizations to act proactively concerning product development, marketing strategies, and resource allocation. This foresight is crucial in maintaining a competitive advantage in dynamic markets (Akash Takyar, 2024).

4. Risk Management: A vital role played by AI for identifying potential risks through constantly assessing various factors like market trends, cybersecurity threats, and operational bottlenecks. This proactive strategy enables businesses to create contingency plans and effectively mitigate risks (Akash Takyar, 2024).

Benefits of Integrating AI in Business Management

- Increased Efficiency: Through automation, businesses will save time on repetitive tasks and reduce operational costs.
- Improved Decision-Making: Access to real-time data insights supports informed decision-making.
- Cost Reduction: Detecting inefficiencies trough AI can lead to substantial cost savings across various operations.
- Competitive Advantage: Organizations leveraging AI gain a significant advantage over competitors through enhancing service delivery and operational agility

Challenges of Implementing AI

Even its numerous benefits, including AI into business management poses challenges like:

- High Initial Investment: The expense of implementing AI technologies can be very expensive.
- Skills Gap: There is often a lack of skilled professionals who can manage and interpret AI systems effectively.

Previous studies

1. Artificial Intelligence in Business Management ;

Artificial Intelligence in Business Management is a review of artificial intelligence (AI) applications in businesses. This book adopts a cross-disciplinary strategy toward AI adoption. Book chapters explore many projects that go beyond simple data management and accessibility to showcase the growing role of artificial intelligence and machine learning in the enterprise data space. AI methods for tackling marketing and commercial strategies, as well as the use of AI and machine learning in tourism, insurance and healthcare systems are discussed. A study on the significance of cultural assets in evaluating risks and protection is also presented. The content gives valuable insights on the application and implications of artificial intelligence and machine learning from this book to readers aiming for corporate roles, such as directors, executives, senior software developers, and digital transformation managers (Mohammed Majeed, 2024).

2. The impact of Artificial Intelligence on Business Management practices ;

This article considers into the ethical considerations surrounding the integration of Artificial Intelligence (AI) in business management. As AI becomes more prevalent in decision-making and operations, businesses encounter numerous ethical challenges. These include concerns about algorithmic bias, transparency, workforce implications, and data privacy. The ethical implications of AI in business are complex and far-reaching. This thorough analysis examines real-world examples, ethical frameworks, and best practices to help businesses responsibly navigate these challenges. By proactively addressing these ethical dilemmas, businesses can harness the advantages of AI while maintaining ethical standards and societal values (V. Ivchyk, 2024).

3. The role of Artificial Intelligence in Business Management

This study aims to look into the role and advantages of artificial intelligence (AI) tools in small and medium-sized businesses, as well as how company management will change in the future as a result of their ability to gain a competitive edge via the use or advancement of technical features. This paradigm provides resources as standard utilities that users may rent and release over the Internet as needed. To get a comprehensive grasp of the difficulties, advantages, and moral implications of AI-driven corporate initiatives, a qualitative methodology comprising focus groups and interviews will be employed (Nadi Armana Hakim et al, 2024).

Methodology:

1. Amazon

Amazon is a leader in utilizing artificial intelligence to enhance customer experience and improve operational efficiency. The company employs machine-learning techniques to analyze customer behavior, allowing it to provide personalized recommendations. This personalization increases the likelihood of sales conversions by suggesting products that align with individual preferences and past purchases.

- Customer Behavior Analysis: Amazon's AI algorithms track user interactions, such as browsing history and purchase patterns, to understand customer preferences better.
- Personalized Recommendations: The recommendation engine suggests products based on similar customer profiles and previous purchases, driving additional sales.
- Inventory Management: AI is also used for inventory management, where predictive analytics forecast demand based on historical data and trends. This helps Amazon maintain optimal stock levels, reducing costs associated with overstocking or stockouts.
- Logistics Optimization: By predicting demand fluctuations, Amazon can streamline its logistics operations, ensuring timely deliveries while minimizing operational costs.

2. IBM

IBM exemplifies successful AI implementation through its Watson platform, which offers advanced solutions across various sectors, including healthcare and finance.

- Healthcare Solutions: Watson analyzes vast amounts of medical data to provide healthcare professionals with evidence-based treatment recommendations. By processing patient records and clinical studies, it helps doctors make more informed decisions about patient care.
- Financial Analytics: In finance, IBM's AI tools analyze market trends and financial data to provide actionable insights for investment strategies. This enhances decision-making processes for financial analysts and portfolio managers.
- Natural Language Processing (NLP): Watson utilizes NLP to interpret unstructured data from sources like social media and customer feedback, helping businesses understand public sentiment and improve their services accordingly.

3. UPS

UPS has implemented an AI system known as ORION (On-Road Integrated Optimization and Navigation) to enhance delivery efficiency.

- Route Optimization: ORION uses machine-learning algorithms to analyze various data points, including customer information, traffic patterns, and weather conditions. This analysis helps UPS drivers determine the most efficient delivery routes.
- Dynamic Adjustments: The system can dynamically adjust routes in real-time based on changing conditions, such as traffic jams or last-minute delivery requests. This capability reduces travel distances significantly.
- Cost Savings and Environmental Impact: Since the deployment of ORION, UPS has saved millions of miles annually, leading to substantial cost reductions and lower carbon emissions. The system not only improves operational efficiency but also contributes to UPS's sustainability goals.

4. Coca-Cola

Coca-Cola employs an AI platform named Albert to enhance its digital advertising campaigns.

- Data Analysis for Advertising: Albert utilizes machine-learning algorithms to analyze customer data, identifying patterns and insights that inform advertising strategies. This allows Coca-Cola to tailor its marketing efforts more effectively.
- ROI Improvement: By optimizing ad spending based on performance metrics derived from data analysis, Coca-Cola has seen significant improvements in return on investment (ROI) for its advertising campaigns.
- Targeted Marketing: The platform helps in identifying the most profitable customer segments, enabling Coca-Cola to focus its marketing efforts on high-value audiences.

5. JPMorgan Chase

In the financial sector, JPMorgan Chase has developed a virtual assistant powered by AI called COiN to automate back-office operations.

- Document Analysis: COiN analyzes large volumes of financial documents—such as invoices, receipts, and contracts—using natural language processing (NLP). This automation speeds up document processing while enhancing accuracy.

- Error Reduction: By automating routine tasks that were previously done manually, COiN has significantly reduced errors in document handling and increased compliance with regulatory requirements.
- Efficiency Gains: The implementation of COiN has allowed JPMorgan Chase to streamline operations, freeing up human resources for more complex tasks that require critical thinking and judgment.

These detailed models illustrate how these companies leverage artificial intelligence not only to enhance operational efficiency but also to improve customer experiences across various industries.

General Lessons Across All Models

- Embrace Data-Driven Decision Making: Companies should prioritize data analytics as a core component of their strategy to enhance operational efficiency and customer engagement.
- Foster a Culture of Innovation: Encouraging experimentation with new technologies can lead to breakthroughs that significantly improve business processes.
- Invest in Employee Training: Successful implementation of AI technologies requires comprehensive training programs to ensure that employees are comfortable using new tools and understand their benefits.
- Focus on Customer Experience: Leveraging AI to enhance customer interactions can lead to increased satisfaction and loyalty, which are critical for long-term success.

By adopting these lessons, organizations can better position themselves to harness the power of artificial intelligence, driving innovation and improving overall business performance.

Research methodology and data analysis

3.1. The approved method and tools used in conducting the empirical study

Based on the nature of the data that we need to collect and the followed approach in this research paper, we found that the most appropriate tool for achieving the objectives of this study is the "interview" and "questionnaire", so we designed a questionnaire based on the follow:

- Some studies that treated Artificial Intelligence, and Business Management.
- Notices and suggestions of and arbitrators' professors.

This is for collecting the necessary data to test the research hypotheses and know the impact of using artificial intelligence (AI) on business management, of a group of Algerian companies that include 100 unities, at the south-west of Algeria.

3.1.1. Method of conducting the field study

The first branch: fields of study

1- Spatial domain: Our study targeted 100 economic and public enterprises located at the south-west region of Algeria

2- The human sphere: Bosses of 100 enterprises.

3.1.2. Choose a study sample

The study population is represented in the frames of the economic and public enterprises located at the region. As for the sample, it will be represented in 80 bosses.

80 questionnaires were distributed to the study sample. We were able to retrieve 80 valid questionnaires due to the presence of incomplete questionnaires.

3.1.4. The study variables:

We relied on two variables in this study, which are the independent variable and the dependent variable, as shown in the following table:

Table 01: The study variables

Variables	Name	Symbol
dependent variable	Business Management	Y
independent variable	Artificial Intelligence AI	X

Source: Prepared by the researchers

3.1.5. The study model:

Through this study, we are looking to identify the impact of the independent variable "artificial intelligence", on the dependent variable "business management" as shown in the following figure:

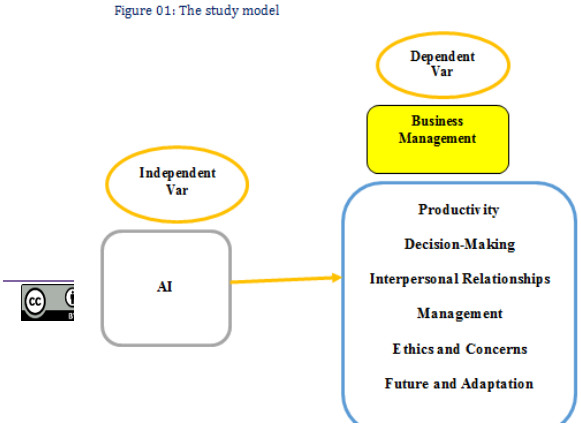

Figure 01: The study model

4. Descriptive analysis and discussion of the questionnaire's findings

Through this research, we seek to present and discuss the most important findings of the study at the group of enterprises, with of providing appropriate recommendations to the enterprises in particular, which may be circulated to other Algerian economic and public institutions.

4.1. View and analyze survey results

4.1.1. Reliability test

For testing the survey questions, we used a stability parameter, which is Alpha Cronbach. As well as the coefficient of validity through the square of the reliability coefficient, the following table shows the rate of reliability and validity for each axis of the questionnaire.

Table 02: Reliability test

Axes	number of paragraphs	Alpha Cronbach	validity
Understanding and Familiarity with AI	08	0.861	0.927
Productivity	03	0.946	0.972
Decision-Making	03	0.886	0.940
Interpersonal Relationships	03	0.914	0.955
Management	03	0.910	0.953
Ethics and Concerns	03	0.888	0.941
Future and Adaptation	03	0.954	0.976
∑	26	0.915	0.956

Source: Prepared by the researchers using the SPSS program.

According to the previous table that shows the results of the alpha-Cronbach reliability test and the validity coefficient, it is clear to us that the questionnaire phrases in the seven axes are characterized by high reliability according to this coefficient which exceeded 0.6 or 60% and it is close to the one, so the total percentage achieved is 91.5%, which is acceptable through 26 paragraphs.

So, the average consistency of the first axis" axis of AI" in its seven phrases was 0.861, which indicates that is somewhat consistent, while the second axis achieved a reliability rate of 0.946 in its three phrases, which means that it is noticeably more consistent in its paragraphs than the first axis, but the degree of consistency increased from one axis to another one, so for the third axis, its reliability rate was 88.6%, while the fourth axis has reached a reliability rate of 91.4%.

So, for the fifth axis, its stability rate was 91%.About the sixth axis, its consistency rate was 0.888, while the seventh axis achieved a rate of reliability 95.4%,These axes have witnessed a variation in the degree of consistency from one axis to another, as these six axes represent the business management of the study model.

We conclude that the questionnaire is sincere, and if we re-study the subject through the same questionnaire and same conditions, we will get results that approximate its results or are almost identical to it. So, for the validity coefficient, which is the square of the Alpha Cronbach coefficient, which is directly related to it, we notice as shown in the previous table that the more coefficient of reliability increased the coefficient of validity increase and vice versa. So, based on that we find that the questionnaire has achieved what was set to measure.

4.2. Apply statistical methods

We try to review the results of mean and standard deviation with determining the direction of the sample for each of the axes of the questionnaire and calculating the coefficient of Spearman correlation between the axis of AI with the axis of Business Management as well as extracting the regression equation.

4.2.1. Displaying the results of the mean and standard deviation with determining the direction of the sample

Table 03: Displaying the results of the mean and standard deviation with determining the direction of the sample.

°	Paragraphs	Mean	Standard Deviation	Direction of the Sample
1	I have a clear understanding of what artificial intelligence is.	3.66	1.341	Agree
2	I am familiar with the AI tools and technologies used in my organization.	3.73	1.278	Agree
3	I feel confident in my ability to use AI tools effectively in my work.	2.31	1.259	Disagree
4	I have received adequate training on how to use AI technologies in my role.	4.19	1.106	Agree
5	I believe that AI has the potential to significantly change our industry.	4.08	1.376	Agree

6	I actively seek out information about new AI developments and trends.	3.47	0.986	Agree
7	I understand the ethical implications of using AI in business.	3.51	1.026	Agree
8	I believe that my organization supports learning and development related to AI.	4.10	1.232	Agree
	The Global means & standard deviation	3.59251	1.05552	Agree

Source: Prepared by the researchers using the SPSS program.

We observe that the table above displays the mean, the standard and direction of the sample of each statements of the Artificial Intelligence axis. So, the result shows that the global mean for the axis was 3.52519 with a standard deviation of 1.05552 while the sample direction of this axis was 'Agree' according to the known weight. So, we find that the greatest value of the mean agreed with the phrase " I have received adequate training on how to use AI technologies in my role" by an average of 4.19 and a standard deviation of 1.106, which indicates that respondents rated their training on using AI technologies in their roles quite positively, with a mean score of 4.19 . This suggests that, on average, individuals feel they have received adequate training, which is a promising sign for the integration of AI in the workplace.

Although, the lowest value of mean agreed the phrase, "I feel confident in my ability to use AI tools effectively in my work." With an average mean of 2.31 and a standard deviation of 1.259. A mean of 2.31 suggests that respondents are leaning toward disagreement with the statement. This low score indicates that many individuals do not feel confident in their ability to utilize AI tools effectively, which could hinder productivity and innovation.

For the axis of Business Management, which is the dependent variable in our study, we will present its mean and the standard deviation with the direction of the sample in the following table:

Table 04: Displaying the results of the mean and standard deviation with determining the direction of the sample.

°	Paragraphs	Mean	Standard Deviation	Direction of the Sample
	Impact on Productivity			
1	The use of AI has improved my team's productivity.	4.01	1.212	Agree
2	AI helps me automate repetitive tasks.	2.99	1.283	Neither agree nor disagree
3	Thanks to AI, I can focus on more strategic tasks.	3.61	1.434	Agree
	Decision-Making			
4	AI improves the quality of my decisions.	3.01	0.986	N.A nor D
5	I trust the recommendations provided by AI tools.	3.87	1.012	Agree
6	Using AI allows me to make decisions more quickly.	4.00	1.103	Agree
	Interpersonal Relationships			
7	AI has improved communication within my team.	2.130	0.953	Disagree
8	I believe that AI helps reduce bias in managerial decisions.	4.31	1.113	Strongly Agree
9	AI has strengthened collaboration between departments.	3.29	1.062	N.A nor D
	Impact on Management			
0	AI has changed the way managers supervise their teams.	4.10	1.230	Agree
1	AI tools make managerial processes more transparent.	3.700	1.177	Agree
2	I feel less connected to my colleagues since the introduction of AI.	4.179	1.035	Agree
	Ethics and Concerns			
3	I am concerned that AI may replace human jobs.	4.15	1.016	Agree

4	I worry about data privacy and security with the use of AI.	3.33	1.232	Neither agree nor disagree
5	I think that using AI raises important ethical questions.	3.39	1.055	Neither agree nor disagree
	Future and Adaptation			
6	I believe that adopting AI is essential to remain competitive in our industry.	4.14	1.123	Agree
7	I am willing to undergo training to better use AI tools.	4.08	1.232	Agree
8	I think that integrating AI into our company is an opportunity rather than a threat.	4.16	1.016	Agree
	The means & standard deviation 'Global'	4.0182	1.09724	Agree

Source: Prepared by the researchers using the SPSS program.

Through this table we can read the mean and standard deviation for each paragraph of the Business Management axis, with determining the direction of the sample. The global mean for this axis was 4.0182 with a standard deviation of 1.09724 and the direction of the sample for this axis was "Agree". The table above shows that the highest mean agreed with the phrase "I believe that AI helps reduce bias in managerial decisions". With a value of 4.**31** and a standard deviation of 1.11**3**, The statement indicates a positive perception among respondents regarding the role of AI in mitigating bias in managerial decisions. A mean of 4.31 indicates a strong agreement with the statement, suggesting that respondents generally perceive AI as a valuable tool for reducing bias. This is an encouraging sign for organizations looking to implement AI solutions, as it reflects a level of trust in the technology's potential to enhance decision-making.

On the other hand, the lowest value of mean in this axis, agreed the phrase, " AI has improved communication within my team" with a value of 2.130 and a standard deviation of 0.953. A mean of 2.130 suggests that respondents largely disagree about the statement that "AI has improved communication within my team." This low score raises important questions about the role AI is currently playing in facilitating effective communication among team members.

Calculating the Spearman correlation coefficient

Through this component, we tried to calculate the degree of correlation with the use of the Spearman coefficient and to know the quality of the relationship between Artificial Intelligence and Business Management. By using the SPSS program, we arrived to the following results shown in the following tables.

Table 05: Spearman correlation coefficient between artificial intelligence and business management

		Artificial Intelligence	Business Management
Artificial Intelligence	Spearman C.C Significance Frequencies	1 80	**0.639**** 0.00**0** 80
Business Management	Spearman C.C Significance Frequencies	**0.639**** 0.00**0** 80	1 80
At Significance level 0.05			

Source: Prepared by the researchers using the SPSS program.

The findings from the table indicate a noteworthy correlation between artificial intelligence (AI) and business management, as evidenced by a Spearman correlation coefficient of 0.639. This positive correlation suggests a significant relationship between the two variables, with a significance level (Sig) of 0.000, which is well below the commonly accepted threshold of 0.05.

- Spearman Correlation Coefficient (0.639): A coefficient of 0.639 indicates a strong positive correlation. This means that as the effectiveness or indicators of AI improve within businesses, there is a corresponding improvement in business management practices. The value is notably close to 1, reinforcing the strength of this relationship.
- Statistical Significance (Sig = 0.000): The significance level shows that the observed correlation is statistically significant, meaning that it is unlikely to have occurred by chance. This provides robust evidence that AI has a meaningful impact on business management practices in the context studied.

The regression equation between the two variables

We try to apply the regression conditions, which are represented by the multicollinearity condition, auto-correlation, normal distribution of data, residual distribution and its spread, and the regression equation.

The following table represents the multicollinearity and auto-correlation test of the study variables.

Table 06: Multicollinearity and auto-correlation test of study variables

Business Management	R	R^2	Multicollinearity		auto-correlation
			Tolerance	VIF	Durbin Watson
Artificial Intelligence	0.847	0.717	0.589	1.697	1.990

Source: Prepared by the researchers using the SPSS program.

R-squared: Through the value R^2, that was 0.717, it becomes clear to us that the artificial intelligence represent 71.7% of the data, while the remaining 28.3% are due to other variables not included in the study.

4.5. Multicollinearity Test

Where multicollinearity will be examined through the Diagnostics Collinearity scale, by calculating the Tolerance coefficient for the independent variable, then calculating the Variance Inflation Factor (VIF), where this model is a measure of the effect of the correlation between the variables. Note that the coefficient of the two variables did not exceed five (5), so it can be said that the study variables do not suffer from the problem of Multicollinearity, and this indicates the strength of the independent variable "Artificial Intelligence" in interpreting and determining the effect on the dependent variable "Business Management".

4.6. Auto-correlation Test

This test is conducted to ensure that there is no problem of auto-correlation in the model through the Durbin Watson Test, and the calculated D-W value of the study model is (1.990). So, it becomes clear that there is no problem of autocorrelation affecting the validity of the study model.

4.7. The Regression equation

From the previous, the regression equation can be written as follows:

$$\mathbf{Y = a + bx}$$

Table 07: Variables and Significance of Variables

		Y = a + bx
Variables	Coefficient	Sig
X	**0.704**	0.001
A	2.097	0.017

$Y = 2.097 + 0.704\ X$

This indicates that:

The artificial intelligence contributes to 0.704 in the marketing performance of the groupe of enterprises located in the south-west of Algeria

4.8. Test of the hypothesis validity:

There is a significant influence relationship at the level of significance 0.05 between the artificial intelligence and business management.

Where the hypothesis "H_0" and "H_1" are formulated according to the following:

H_0: There is no significant effect relationship between artificial intelligence and business management at significance level 0.05.

H_1: There is a significant effect relationship between artificial intelligence and business management at significance level 0.05.

Test of Hypothesis' validity

Table 08: Test of hypothesis' validity

Independent Variable	F	Significance level of f	T	Significance level of t	Result of the hypothes
Artificial Intelligence	14.316	0.000	3.456	0.001	Refusing H_0

Source: Prepared by the researchers using the SPSS program.

The previous table shows that the significance level 0.05 is greater than the significance level of t "0.001", so we reject the null hypothesis "H_0" that denies the existence of an influence significant relationship at the level 0.05 between the artificial intelligence and business management and we accept the alternative hypothesis "H_1".

Evaluation and Conclusion

Artificial Intelligence systems operate various types of business automation, including enterprise automation and process automation, which helps reduce human errors and frees up time for the human workforce to work at a higher level. So, according to this study, we reached a set of results, which will be presented as follows:

5.1. The theoretical results

• Effective business management involves critical functions such as planning, organizing, leading, and controlling resources to achieve organizational goals.

AI facilitates data-driven decision-making by quickly analyzing large datasets, allowing managers to uncover insights that inform strategic choices.

Despite its benefits, integrating AI into business management presents challenges, including high initial investment costs and a skills gap in the workforce.

5.2. The empirical results

• Most of the study sample members agrees that AI has the potential to significantly change the business management

• Through the outputs of the SPSS program, it became clear that the significance level 0.05 is greater than the significance level of t "0.001", so we reject the null hypothesis "H_0" that denies the existence of an influence significant relationship at the level 0.05 between the artificial intelligence and business management. We accept the alternative hypothesis "H_1", which proves the validity of the first hypothesis;

• According to the correlation coefficient of Spearman that was 0.639, which is positive, and that Sig =0.000atsignificance level of 0.05. Here we can say that the relationship between the Artificial intelligence and the Business management is a direct positive correlation, due to the correlation coefficient is approaching to the one "1".which proves the validity of the second hypothesis.

This finding underscores the importance of adopting AI technologies to enhance management practices effectively. By focusing on improving AI capabilities, businesses can achieve better outcomes and drive overall success in their operations.

Recommendations

Organizations should actively seek feedback, enhance their AI solutions for better communication, and invest in training to ensure that employees can effectively leverage these tools.

Businesses should adopt AI systems that facilitate data-driven decision-making. By leveraging predictive analytics and real-time data insights, managers can make informed choices that align with organizational goals and respond proactively to market changes.

As AI technologies are integrated into business processes, it is crucial to establish ethical guidelines to address concerns such as data privacy, algorithmic bias, and job displacement. Organizations should develop policies that ensure responsible use of AI while promoting transparency and accountability.

REFERENCES

The template will number citations consecutively within brackets [1]. The sentence punctuation follows the bracket [2]. Refer simply to the reference number, as in [3]—do not use "Ref. [3]" or "reference [3]" except at the beginning of a sentence: "Reference [3] was the first ..."

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