



A Study on Applications of Artificial Intelligence in Business

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ABSTRACT:

Artificial intelligence (AI) that allows robots to learn from experience while emulating human behaviour. With improvements in machine learning, natural language processing, and other fields, the area of AI has expanded dramatically in recent years. Healthcare, finance, transportation, retail, and many other sectors employ AI in some capacity. In recent years, it has grown in popularity. In order to produce their predictions, AI systems use mathematical data and algorithms. Knowledge representation, planning, perception, object manipulation, and other objectives are part of AI research.

KEYWORDS: Machine learning Algorithms, Future marketing, Self learning system, Personalisation and Optimisation

INTRODUCTION:

The use of AI is growing today. In addition to improving human competency, it is also changing how business is conducted. Artificial intelligence (AI) has changed the way businesses operate by allowing them to automate processes, enhance consumer interactions, and make data-driven choices. Marketing is an important area where AI is being used in business. AI can assist with target audience identification and campaign optimisation for optimal impact. AI-powered chatbots are also gaining popularity

because they give customers fast, dependable solutions to their issues. AI is being utilised in finance for risk management and fraud detection. Machine learning algorithms are used by banks and other financial organisations to examine massive amounts of transaction data and spot potentially fraudulent activity. Moreover, AI can be used to optimise investment portfolios and forecast financial market developments. The term "artificial intelligence" is becoming more and more common, yet there isn't a single, clear definition for it. It is the process of giving machines intelligence, and intelligence is the trait that allows an object to behave appropriately and strategically in relation to its surroundings. Strictly stated, artificial intelligence refers to a method of integrating cloud computing, network devices, robotics, computers, and the creation of digital material as well as different corporate processes, systems, and day-to-day activities. There has always been artificial intelligence computers, and it will continue to exist. Future marketing initiatives must include the growth and development of artificial intelligence. Businesses use artificial intelligence software on a daily basis to streamline operations, cut costs, speed up turnaround, and increase output.

Technology is developing at an unprecedented rate, and businesses who have already shifted to marketing AI software will be well-positioned to take advantage of the next breakthrough. The role of artificial intelligence (AI) in modern digital life is quickly expanding, and the marketing and advertising industries are no exception. Artificial intelligence is transforming industries one by one, from the witty and intelligent Siri to Tesla's self-driving cars to Google AI that can learn video games in just a few hours.

Artificial intelligence can be used for a variety of purposes, such as identifying data trends to reduce market risks, improving customer service with virtual personal assistants, or even analysing millions of documents stored on various servers within an organisation to identify compliance failures and able to foresee and anticipate the failures. But, businesses have only lately been able to foresee and anticipate the opportunities that robotics and artificial intelligence (AI) can bring to the future of business. By utilising instruments like data mining, pattern recognition, and natural language processing, artificial intelligence makes use of self-learning systems. Hence, artificial intelligence is very scalable and results in spectacular cost reductions when compared to human intelligence in terms of its primary economic advantages.

Moreover, rule-based software and artificial intelligence's consistency help businesses reduce errors. Its endurance, along with ongoing upgrades and the capacity to document operations, leads to fruitful commercial opportunities.

LITERATURE REVIEW

The use of AI in business has been the subject of numerous research. Here are a few examples of earlier research:

1. ADAM UZIALKO (2022) In his study he told that AI is the technology of the future, and people should prepare for it. This essay is intended for business owners and employees who are interested in learning how artificial intelligence is changing the commercial sector.

2. Russell and Narvig (1995) The book "Artificial Intelligence: A Modern Approach" by Russell and Narvig was published. He discussed the significance of computer algorithms and how artificial intelligence has altered people's perspectives.
3. Lasse Rouhiaine(2000) "How AI will transform society." AI is today's and the future of your business as well as your personal life. Your readiness for emerging technology may benefit from AI.
4. Ida merete enholm (2021) the paper concludes with an identification with the gaps in the literature and development of future studies in AI
5. Vidhi jain (2019) AI has effectively to be helpful in new apparatus in the present technology overwhelming the society.

OBJECTIVES OF THE RESEARCH

- 1) To know if AI can automate repetitive tasks and help improving business efficiency and effectiveness
- 2) To know if AI can help in taking future decisions by effectively predicting future analysis
- 3) To find out if AI can anticipate demand so that there is continuous flow of goods and if AI powered chatbots and customer queries.

Research gap

Explainability: AI research is the lack of interpretability and explainability of AI systems. As AI becomes more complex and more widespread, it becomes increasingly difficult to understand how decisions are made and why.

Bias: AI systems are only as good as they are trained. However, data can be biased or incomplete, leading to distorted or inaccurate AI systems. Addressing the issue of bias in AI is a crucial research gap.

Ethics: As AI systems become more efficient, the ethical implications of their use increase. Researchers address ethical challenges related to artificial intelligence, such as privacy issues and the impact on jobs.

Generalization: AI systems are often trained for specific tasks or data, which can limit their ability to generalize to new situations. Developing artificial intelligence systems that learn and generalize from limited data is an important research gap.

Security: As AI systems evolve, there is a risk that they could be used for malicious purposes. Securing artificial intelligence systems is another important research gap in the field.

RESEARCH METHODOLOGY

Artificial intelligence research methodology includes designing and conducting experiments, collecting and analyzing data, and drawing conclusions based on observations. The goal of AI research methodology is to develop new algorithms, models and techniques to improve the efficiency and accuracy of AI systems. Here are some key steps in AI research methodology: **Define the research problem:** The first step in AI research methodology is to define a research problem that involves a specific area of interest or a problem to solve. **Literature review:** Once the research problem is defined, it is necessary to review the existing literature and research related to the problem to gain a better understanding of the current state of the art. **Develop a research hypothesis:** Based on the literature review, the researcher can develop a hypothesis or series of hypotheses to guide the research. **Design steps:** After developing research hypotheses, the next step is to design experiments or simulations to test those hypotheses. This includes defining research methodology, selecting appropriate data sources and algorithms, and designing experiments or simulations that generate the necessary data. **Data collection and analysis:** After completing the experiments or simulations, the researcher must collect and analyze the data obtained during these experiments. This requires the use of statistical and machine learning techniques to analyze data and draw conclusions. **Drawing conclusions:** Based on the data analysis, the researcher can draw conclusions about the assumptions of the research and the functionality of the artificial intelligence system. **Publication of results:** The final step in AI research methodology is to publish research results in peer-reviewed journals or conferences so that the results can be shared more widely.

Size of the

No of samples= 110

Artificial intelligence (AI) is increasingly being used in business to automate processes, improve decision making and gain insight from data. Here are some of the more common ways AI is used in business:

Customer Service: AI-powered chatbots are used to automate customer service tasks such as answering basic questions, handling complaints and processing orders.

Marketing and advertising: Artificial intelligence is used to analyze customer behavior and preferences and create personalized marketing campaigns.

Sales: AI-powered tools are used to identify potential customers, automate lead generation and generate sales forecasts.

Supply chain and logistics: Artificial intelligence is used to optimize supply chain management, reduce costs and improve efficiency.

Financial services: AI-based tools are used to

analyze financial data, detect fraud and automate risk management. Human Resources: Artificial intelligence is used to automate recruitment and selection processes, improve employee engagement and identify potential talent. Product development: Artificial intelligence is used to analyze customer feedback, identify market trends and develop new products. In general, AI is used in business to drive innovation, increase efficiency and improve the customer experience

There are several sources of AI data collection in companies depending on the specific needs and goals of the company. Here are some of the more common sources.

Customer Interactions: Companies may collect information about customer interactions, such as online orders, customer service calls, social media and surveys. Website Analytics: Website analytics tools can collect information about website visitors, including impressions, bounce rates, click-through rates and conversion rates. Sales Information: Companies may collect information about sales transactions, including products sold, transaction volumes and customer demographics.

Operational data: Companies can collect data about their operations, including inventory levels, supply chain data and production data. Third Party Information: Companies may also purchase information from third parties such as market research firms, social media platforms and data brokers. It is important to note that companies should always ensure that they collect data responsibly and ethically and that they have adequate measures in place to protect customer privacy and data security.

SOURCE FOR DATA COLLECTION

Primary data- Data collected from 110 samples.

Secondary data- Data collected from other research articles.

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SAMPLING TECHNIQUES

We have used random sampling. It is described as Random sampling is a statistical method used to select a subset of individuals or units from a larger population such that each individual or unit in the population has an equal chance of being selected. This process is carried out without prejudice, so that all members of the population have an equal chance of being included in the sample.

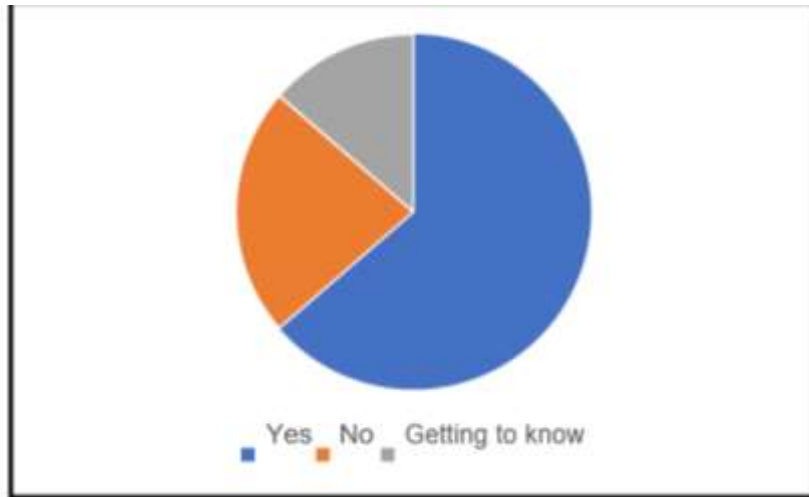
Random sampling can help in many ways:

1) Market research 2) Employee survey 3) Quality control

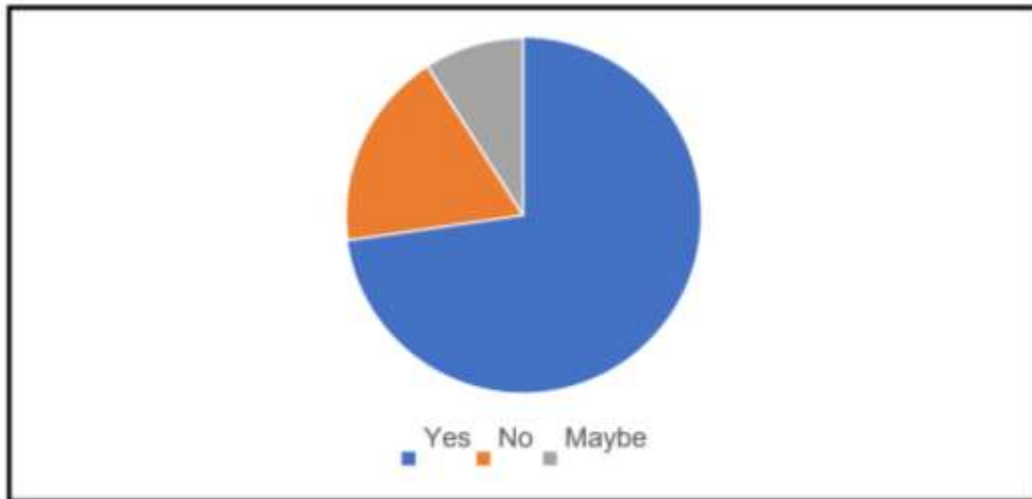
4) Risk Management: Random sampling can be used to assess risks associated with certain business practices or investments. By randomly selecting a sample of data, companies can assess the potential risk associated with a particular decision or investment and make informed decisions about whether to proceed.

DATA INTERPRETAION AND ANALYSIS

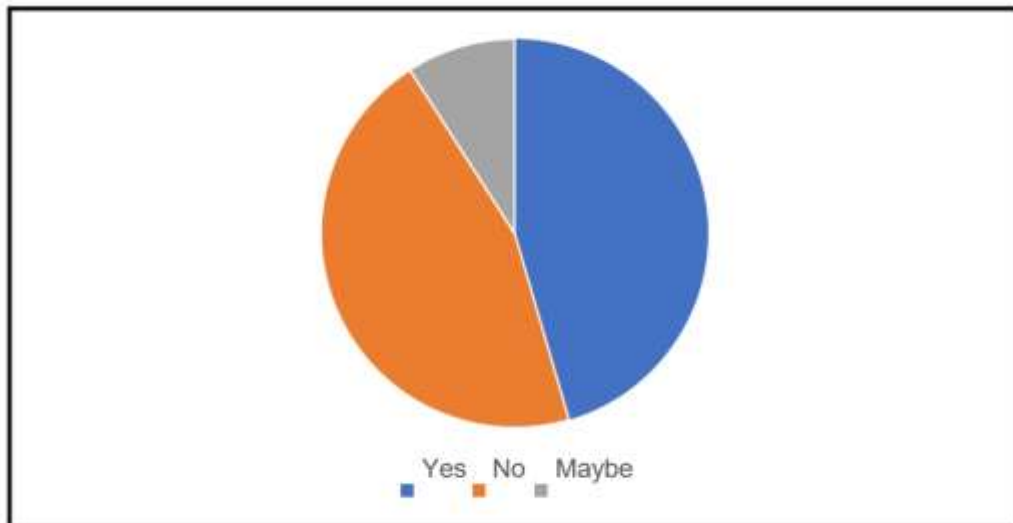
1) Is Artificial intelligence a known topic to everyone?



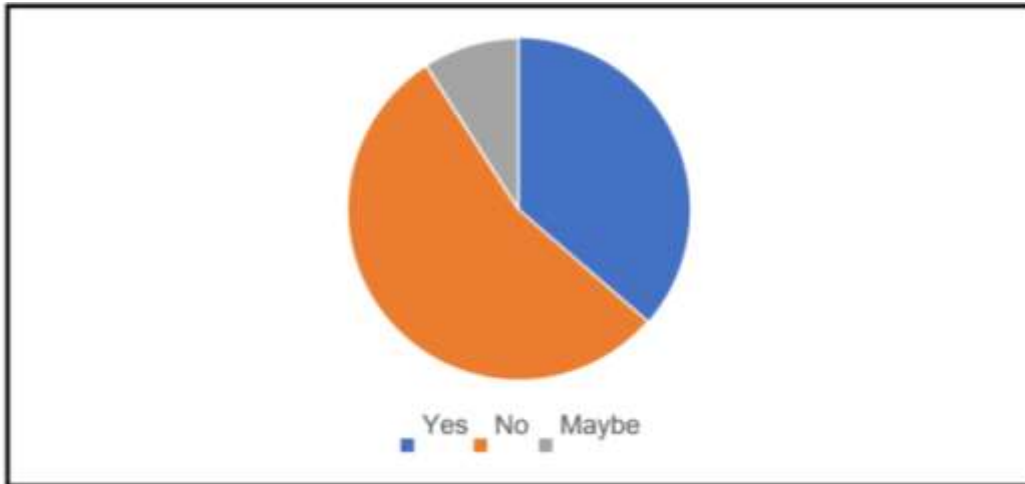
2) Can artificial intelligence help in day to day business activities?



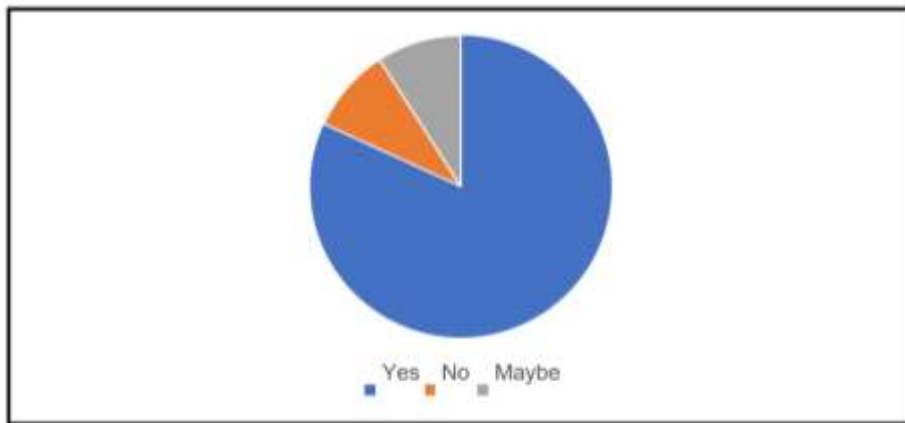
3) Is information about Artificial intelligence easily available



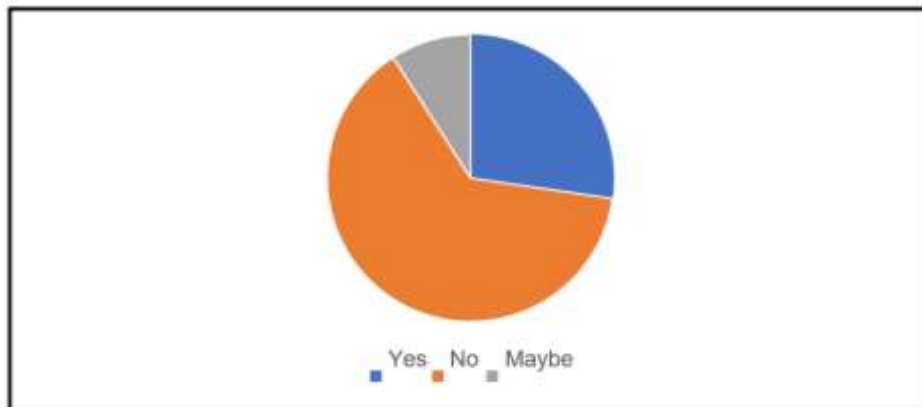
4) Is information safe under Artificial intelligence?



5) Is human intelligence necessary for training of Artificial intelligence?



6) Is it feasible for everyone including people with small businesses to adopt Artificial intelligence technologies?



FINDINGS OF THE STUDY

Here are some ways artificial intelligence can be used to analyse and interpret data in business. Predictive Analytics: Predictive analytics is the process of using data, statistical algorithms, and machine learning techniques to identify the probability of future outcomes based on historical data. It can help companies make informed decisions and develop effective strategies. For example, a retailer can use predictive analytics to predict product demand, allowing it to optimize its inventory and avoid running out of stock. Natural Language Processing (NLP) is a subset of artificial intelligence that allows computers to understand, interpret and produce human language. NLP can be used in business to analyse customer feedback, social media messages and other text data to identify customer sentiment. In conclusion, it can be stated that the application of artificial intelligence in business is a rapidly growing

trend that is changing various economic sectors. With the spread of artificial intelligence, companies benefit from improved operational efficiency, better customer experience and improved profitability. However, companies must ensure that they implement ethical and responsible AI practices and address potential job losses and bias in AI algorithms. Overall, the business benefits of AI outweigh the challenges, and companies must embrace this technology to remain competitive in the market and understand customer preferences. Image and video analysis: AI algorithms can be used to analyse images and videos to identify patterns and extract valuable information. This can be useful in several fields, such as healthcare, where artificial intelligence can be used to analyse medical images to identify diseases and conditions. Fraud detection: Artificial intelligence can be used to identify patterns of fraudulent behaviour in financial transactions. This can help businesses detect and prevent fraud before it becomes a serious problem. Recommender systems: Recommender systems use artificial intelligence algorithms to analyse user data and make personalized recommendations. For example, an e-commerce website can use a recommendation system to recommend products to customers based on their browsing and purchase history. All in all, AI can be a powerful tool for analysing and interpreting data in business. By using artificial intelligence algorithms to analyse large volumes of data, companies can gain insights and make informed decisions that help them optimize their operations and achieve strategic goals.

CONCLUSION

In conclusion, the application of AI in business is a rapidly growing trend that is transforming various industries. With the increasing adoption of AI, businesses can benefit from improved operational efficiency, enhanced customer experience, and increased profitability. However, businesses must ensure that they implement ethical and responsible AI practices, as well as address concerns about potential job losses and biases in AI algorithms. Overall, the benefits of AI in business outweigh the challenges, and it is essential for companies to embrace this technology to stay competitive in the market.

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