



Machine learning and role of artificial intelligence in optimizing work performance and employee behavior

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ARTICLE INFO

Article history:

Available online 23 December 2021

Keywords:

Artificial intelligence
Machine learning
Productivity
Employee behaviour
Automation

ABSTRACT

In today's business world, firms are using analytics to diving deeper into their data to improve productivity, acquire a competitive edge, and boost their bottom lines. That is why businesses are eager to integrate machine learning (ML) and artificial intelligence (AI) because they want a faster, more accurate result. In addition, machine learning and artificial intelligence improved productivity by reducing repetitive tasks. As a result, nearly every sector in the world intends to use artificial intelligence and ML. Artificial intelligence and ML have various roles in business, ranging from enhancing employee and customer interactions to discovering patterns in massive amounts of data to automating monotonous activities. The goal is to seize the opportunity that artificial intelligence provides in employee success and productivity. Implementing artificial intelligence and machine learning may be a vital tool for any company seeking quantitative help in their decision-making since it can analyze vast quantities of data and spit forth trend directions and actionable suggestions. AI helps employees and businesses to set and achieve better goals results. This paper highlights the impact of using artificial intelligence and ML to enhance employee behaviour and work outcome. This research also provides insights into artificial intelligence, which will usher in a new era in industry.

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Selection and peer-review under responsibility of the scientific committee of the International Conference on Advances in Materials Science

1. Introduction

AI and Machine learning is being hailed as a powerful tool for increasing productivity and improving how employees are recruited, developed, and retained in companies. Artificial intelligence technologies and ML are significantly impacting the business' productivity and outcomes. It has been found that companies will perform because AI and machine learning algorithms efficiently utilize vast amounts of big data, resulting in improved performance. AI also gives crucial data to managers, allowing them to make better business decisions. It will also improve staff retention and aid in the acquisition of new customers. Machine automation creates higher-quality goods more

quickly and effectively while also giving crucial data to assist managers in making better business decisions [1]. Thus, organizations are starting to realize that it's worth adopting technologies such as AI and ML. It's because it's a certain method to boost operational efficiency and employee behaviour, which has a near-instant impact on the bottom line (see Figs. 1 and 2 and Tables 1, 2).

One of the most significant advantages of AI technology is Automation, which has had substantial effects on the communications, transportation, consumer goods, and service industries. Automation provides higher production rates and productivity in various sectors and allows for more efficient raw material usage, better product quality, and increased safety. In addition, Artificial Intelligence has long been used to help businesses make better decisions. AI technology can coordinate data supply, evaluate trends, establish data consistency, and give reliable predictions for the company. In addition, AI and Machine Learning technologies aid in the development of predictive models and algorithms

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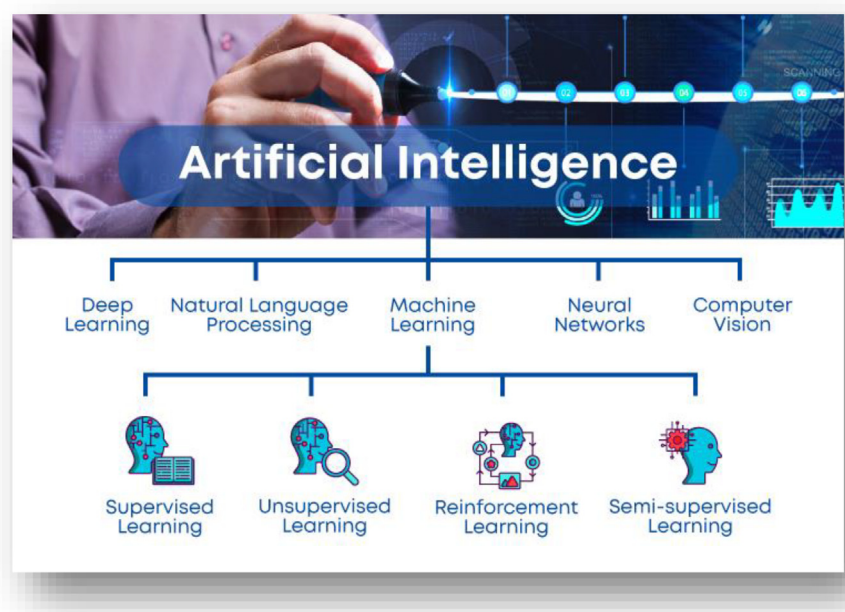


Fig. 1. Artificial intelligence to enhance work outcome. Source: What is Artificial Intelligence? How Does AI Work, Applications and Future?

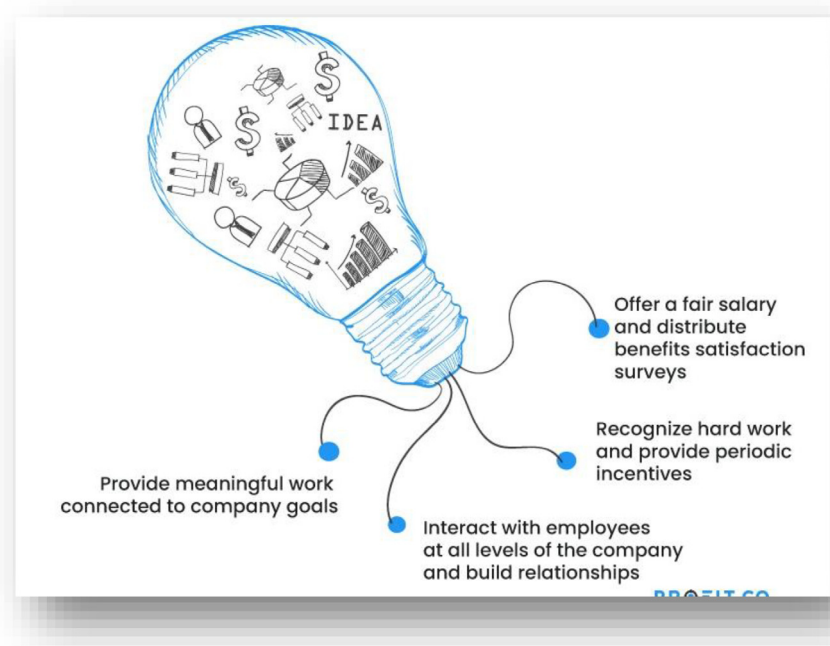


Fig. 2. Artificial intelligence to enhance work outcome and employee's behaviour. Source: [Internet]. 2021.

Table 1
Artificial intelligence and ML application assisting in broad areas of business. (Source: Self-made).

Broad areas	Description	AI and ML application
Computer Vision	This field focuses on developing machines that can analyze and comprehend pictures or sequences of images.	Face recognition, Image restoration, Product defect, detection
Text Analysis	The focus of this field is on extracting high-quality information from text data.	Search engines, Query Processing, Recommendation/Personalization, Document summarization, Fraud detection, Demand forecasting, Product search ranking
Speech Recognition	The field deals with creating machines that can respond to voice commands.	Speech-to-text processing Voice search and dialling

Table 2

Benefits of Artificial intelligence to enhance work outcome and employee's behaviour (Source: Self-made).

Aids and Impact	Effectiveness in the workplace (Percentage)
Enhance the features, functions and performance of the business	51 percent
Optimal internal business operations	36 percent
Free up workers to be more creative by automating tasks	34 percent
Better decisions	30 percent
Improves employee behaviour	40 percent
Optimize external processes such as marketing and sales	45 percent
Capture and supply rare knowledge where needed	26 percent
Fewer errors and mistakes	20 percent
Provide career path to employees	15 percent

for processing data and predicting the consequences of various trends and scenarios.

AI is assisting organizations across sectors in finding the right solutions to solve their issues more effectively. As a result, greater efficiency in solving complex problems means increased productivity in the business. AI technology not only assists companies in making crucial choices but also prepares them for any eventual-ity, ensuring business sustainability [2].

It is true repeated business activities are not only time-consuming, but they may also be tedious, lowering employee productivity over time. Robotic Process Automation technologies driven by AI may automate interactions between many business systems, making the company's tedious tasks more manageable. In this way, consumer behaviour is also improved. Automation technologies execute any business process rapidly without needing much manual effort.

Moreover, another significant role of utilizing AI technologies to automate routine corporate operations is that it reduces human mistakes. Robotic Process Automation technologies handle data input and processing; digital systems become more efficient and are less likely to encounter or generate issues as a result of data processing errors [3]. Hence, this can assist in increasing corporate productivity and minimizing employee stress. As a result, AI technology helps companies develop faster, improve team performance, and boost workers performance.

It has been noticed that there are numerous roles of Machine Learning and Artificial Intelligence which enhance work outcomes and employee's behaviour. This current paper is conducted to find the part of Machine Learning and AI. The relevance and influence of intense employee behaviour on corporate earnings and growth are examined in depth in this research. It may provide insight into what motivates and rewards employees' actions and provide compelling recommendations on how to motivate and reward them more effectively.

2. Literature review

A. Jain, [4] stated that employees could focus on higher-value tasks because of artificial intelligence and machine learning technology. Artificial intelligence will be utilized to gain new insights, reliable decision-making, and improve business outcomes. The data visualization ability using AI and 3D apps can help with workplace design. Artificial intelligence and machine learning assist businesses by directing, organizing, and automating tasks. It will boost employee productivity and efficiency.

A. Jain, & Y. Shrivastava [5] reports, Employee performance is also aided by AI. AI can read between the lines of traditional perfor-

mance assessments and more precisely evaluate individual performance via sentiment analysis. Most importantly, it may provide precise suggestions about career pathways and particular skill sets that are required for progress. As a result, it is essential to make employees feel empowered by charting an empowering career path that includes skill development. In addition to this, AI-powered tools help organizations accurately assess employee engagement using sentiment analysis techniques, biometrics, and other new technologies when it comes to increasing employee engagement and retention.

Agrawal A, et al., [6] shows the growing volume of data is a big challenge for today's businesses. Flexibility, cooperation, and communication are the primary motivators for creating new workplaces—AI development aids in managing data and creating intelligent solutions based on the data sample. Biometrics, text analysis, and natural language processing are used in sentiment analysis or opinion mining technologies to get insights into employee motives and actions, going beyond traditional methods of assessing employee experience. AI analyze data, such as biometric and email communications data, and predict certain behaviours to improve employees' sense of belonging or connection to activities.

Bernert RA, et al., [7] suggests that AI is assisting businesses in effectively adopting new behaviours and cultures. Behavioural economics and nudge theory principles are already being used in the workplace. Insights from AI combined with behavioural theory enhance employee behaviour that is not possible through traditional transformation.

Davenport TH, et al., [8], HR managers use AI to help them analyze and provide the learning techniques that an employee prefers. So, in the same way, HR managers can apply those principles to create an adaptable learning experience with a similar feel and style, collecting information for training from external and internal sources based on preferences, career objectives, personality traits, and employment history. In addition, companies use cognitive technology to collect data on each employee's career advancement and offer it tailored. For example, employees may plan their career path to coincide with specific learning objectives needed to close the skills gap. Leading organizations have recognized that providing their employees with the tools and clarity they need to make career transitions and tie their learning to those routes is one of the best ways to drive learning. As a result, cognitive technology facilitates this by combining and personalizing data for employees. AI assists businesses in being highly successful in inspiring their workers and boosting employee engagement by introducing them to many levers of success, such as effectiveness in decision making and learning, collaboration, experimentation, and information sharing. As a result, firms can stay competitive by implement ML and AI in their workplaces.

Fallucchi F, et al., [9] argues AI implementation may result in the abolition of a large number of human employments. In reality, AI has surpassed humans in every manner possible in fields including medical diagnosis, voice translation, and accounting. As a result, there is an underlying worry that AI will take over most of the world's employment one day.

3. Methodology

The research is a quantitative study based on two main factors: machine learning and artificial intelligence. Secondary data were also employed in this study to supplement the findings and conclusions. The literature study, journals, academic papers, and other sources are used to assess all aspects.

The rise of artificial intelligence (AI) and its increasingly broad influence across various industries necessitates a review of its

impact on achieving the Sustainable Development Goals. Today's leading organizations are already implementing machine-learning-based decision-making tools. AI applications and Machine learning is allowing businesses to increase top-line growth and streamline operations while also enhancing staff engagement and customer happiness. Among other things, AI is being used to customize customer care, improve customer loyalty and retention, employ the appropriate people, automate finance, evaluate brand exposure, detect fraud, and optimize supply chains. AI can indeed handle a wide range of repetitive activities and services that would typically take human employee's hours to complete. Machine-learning algorithms can be trained to accomplish a wide range of tasks [10]. They excel at taking mind-numbing and time-consuming jobs for workers and completing them swiftly and accurately with minimal tolerance for the mistake. As a result, employees may simplify their job and free up time for the important stuff by employing AI to automate some procedures.

Further, Artificial intelligence's capacity to improve research is one of its most effective uses. Sentiment analysis and other data may be utilized to enhance employee behaviour by using language-based machine learning algorithms. HR experts may be able to anticipate how different conditions impact employee behaviour provided they have adequate data. It has been noticed that employees have other aspirations, requirements and systemic hurdles to consider, and machine learning can ensure you take an educated approach to assist staff. There are many possible advantages that businesses may provide that workers perceive to be far more valuable by implementing AI and ML technology in the workplace. The role of artificial intelligence and machine learning includes creating automated settings and developing technologies like virtual assistants. Employees will operate more efficiently in AI-based settings while maintaining security, governance, data control, and compliance [11].

Moreover, the data is more precisely examined, and the reporting time is likewise enhanced. Artificial intelligence and ML may be used to evaluate vast quantities of data and provide conclusive findings [12]. If the same task were assigned to a person, the time required would be enormous, and there would be a considerable risk of making mistakes in the report. On the other hand, AI and ML is simply a system that never tires or becomes bored. It may work continuously throughout the day, delivering the same level of performance and consistency. This increases corporate efficiency and makes the industry function more smoothly and efficiently. If AI does the work, the possibilities of mistakes are likewise reduced. Therefore, in this way, the result of the work automatically increases.

Artificial intelligence / ML and business productivity go hand in hand. AI may boost a company's efficiency by connecting information and communication systems, enabling intelligent machine automation, providing early warnings of possible problems, and much more [13]. AI and ML have transformed corporate efficiency by making the proper judgments in a short amount of time. Business choices made by AI are based on a set of algorithms that reduce mistakes. Even though installing AI is expensive, it has been merging new advancements in the industry. For example, Apple and Amazon are two of the few top firms utilizing AI technology.

It has been found that Employees will be more productive in the workplace as a result of AI and ML. Artificial intelligence is being used by businesses to boost staff behaviour. One of the advantages of AI for business is that it automates repetitive activities throughout a company, freeing workers to focus on innovative ideas, complex problem solving, and high-impact work [14]. For instance, for teams with daily, direct encounters with consumers and rely on rapid, accurate, and responsive customer service, AI-operated chatbots have become a requirement. Chatbots have substantially decreased the manual time required to accomplish these activities,

from gathering information to beginning the process of submitting consumer complaints.

Moreover, Artificial intelligence help in creating detailed reports for employee, by which they can track the performance, or check they are on the right track. ML perform in-depth content analysis and make evidence-based arguments. It has been found that employees who sense they're essential to the company and work in an environment that values diversity are more likely to perform at their best. Therefore, a firm must cultivate an employee-friendly culture and values. AI technologies can assist businesses in analyzing their employees' behaviour, sentiments, and morale to determine if they are worried, dissatisfied, or pleased [15]. Hence, this will help companies to retain talented employees in the business.

Further, business leaders must provide the employee in their organizations to cultivate their careers in the workplace. It means to allow them to grow in their careers in a meaningful way. For example, HR executives may use AI to give their workers customized, data-driven career plans tailored to each person's learning style and personality.

4. Result/Findings

The author concluded that numerous analytics were suggested. The majority of them employed artificial intelligence algorithms and methodologies, demonstrating the technology's rapid and observable growth and the growing interest and competitiveness in its use in business. The writers' point of view is represented in the analyses given. Many organizations have adopted artificial intelligence and machine language, with AI playing an essential part in recruiting, selection, and hiring, assessing performance, gathering data on workers, and delivering real-time and accurate information. Businesses that successfully adopt AI can produce more revenue. As a result, enhanced work outcomes, better technological tools, improve employee behaviour and more efficient results. With such success, companies can spread their reach across the world. Further, Artificial Intelligence and ML are a beneficial addition to the business, a smart and analytical one. Many activities may be completed faster and more efficiently using AI and machine learning. Many sectors have seen an improvement in productivity as a result of technologies. The finding of the report is given below-

5. Conclusion

The above paper is conducted to understand the role of artificial intelligence and machine learning deeply to enhance work outcomes and employee behaviour. According to the study above, AI and ML are present and essential in various business processes and tasks. In recent years, Artificial Intelligence and ML has gained a lot of attention. This is because technology has broken the human efficiency bottleneck, decreased repetitious labour, and increased work efficiency. It has been found from the study that companies will perform better if AI and machine learning algorithms can effectively exploit vast volumes of big data. It will also improve staff retention and aid in the acquisition of new customers. As firms scale up and develop, this will offer additional employment possibilities and help the sector.

AI and ML have a lot of potential in business. AI is adept at deciphering algorithms and applying them to extract useful information from massive amounts of data. The company collects data on a vast scale regularly to evaluate it and build better client acquisition methods. These data are complicated to assess correctly since they include a large quantity of information. This is quite beneficial in the workplace and improves the overall productivity

of the company industry. Moreover, AI-driven solutions hold a lot of promise for improving employee experience, increasing productivity, and assisting HR professionals in becoming more informed advisors. Business who uses AI technologies to provide employees with a better first impression, a personalized upskilling and training experience, and a higher level of employee engagement.

Indeed, a company's performance is mainly determined by the quality of its staff, which necessitates recruiting and keeping great individuals through increasing their job happiness. Employees will be impacted in a variety of ways once AI is implemented. Therefore it's critical to focus on their requirements and possible results. AI can undoubtedly assist in achieving this goal. Learning and development efforts given by a business for professional advancement and obtaining leadership roles in the firm are another element that leads to employee engagement. The integration of AI and ML into business operations to interact with workers, get feedback and utilize that information to develop a meaningful employee engagement plan will pay off in the long run.

6. Future work

This study offers analytical and practical insights and possibilities for business owners and executives to use technology to identify something inherently difficult to detect due to the need for particular expertise and experience. Based on the in-depth examination of the case studies, AI and its technologies provide various alternatives, advantages, and services to improve organizational performance. The current paper provides a better understanding of how AI and ML can transform business operations. The report concludes with a discussion of future research directions.

CRediT authorship contribution statement

K.K. Ramachandran: Investigation, Writing – original draft. **A. Apsara Saleth Mary:** Conceptualization, Writing – review & editing, Supervision. **Shibani Hawladar:** Formal analysis, Data curation. **D. Asokk:** Conceptualization. **Bandi Bhaskar:** Writing – review & editing. **J.R. Pitroda:** Conceptualization, Writing – review & editing, Supervision.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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