



Artificial Intelligence and The Future of Work: Will Machines Replace Human Workers

Sudherson S

Department of PGDM

Rajalakshmi School of Business

Sneha VM

Department of PGDM

Rajalakshmi School of Business

ABSTRACT:

The development of artificial intelligence (AI) has brought forth concerns about the future of work and whether machines will replace human workers. This paper explores the potential impact of AI on the labour market and how it may transform various industries. While some jobs may become automated, AI may also create new opportunities and enhance the productivity and efficiency of human workers. The paper discusses the importance of upskilling and reskilling the workforce to adapt to the changing demands of the labour market. The conclusion highlights the need for a comprehensive approach to address the challenges and opportunities presented by AI in the future of work. Artificial intelligence (AI) has become a buzzword in the finance sector, with many experts predicting that it will revolutionize the industry. The impact of artificial intelligence (AI) on the labour market has been a topic of much discussion and debate in recent years. Many scholars have explored the potential effects of AI on employment, with some arguing that machines will replace human workers, while others suggest that AI will create new job opportunities. Moreover, AI is not a one-size-fits-all solution. Different businesses have different needs and constraints, and AI systems need to be customized accordingly. This means that AI can complement human workers rather than replace them.

KEYWORDS: *Artificial intelligence, Banking, Resistance to digitalization.*

INTRODUCTION:

Artificial intelligence (AI) is a rapidly advancing field that has the potential to transform many aspects of our lives, including the way we work. AI refers to the ability of machines to perform tasks that typically require human intelligence, such as learning, reasoning, perception, and problem-solving. As AI technology continues to evolve, there is a growing concern that machines may replace human workers, leading to widespread unemployment and economic disruption. While it is true that some jobs may be automated in the future, it is unlikely that machines will completely replace human workers. One reason for this is that there are many tasks that are difficult to automate, such as those that require creativity, social intelligence, and complex decision-making. In addition, there are many jobs that require human interaction, such as healthcare, education, and customer service, which are unlikely to be fully automated.

Moreover, AI is likely to create new job opportunities in areas such as data analysis, programming, and AI development. As machines become more advanced, they will also require human oversight and maintenance, which will create new job roles. Therefore, rather than being replaced by machines, human workers are likely to work alongside AI systems, leveraging their strengths to enhance productivity, efficiency, and innovation in the workplace. This means that the future of work is likely to involve a hybrid workforce of humans and machines, where the roles and responsibilities of workers will be redefined.

AI has already made significant inroads in the finance sector and its potential for further growth and innovation is tremendous. Here are some potential future areas where AI can make a significant impact in finance: Fraud detection and prevention, Personalized investment advice, Predictive analytics, Robo-advisory services, Loan underwriting and credit risk assessment, Algorithmic trading etc. Overall, AI has the potential to revolutionize the finance sector by improving efficiency, accuracy, and customer service. As the technology continues to evolve, we can expect to see even more innovative uses of AI in finance in the future.

LITERATURE REVIEW:

In a study by Frey and Osborne (2017), it was found that nearly 47% of US jobs are at risk of being automated over the next two decades. They suggest that low-skilled jobs, such as those in the service and manufacturing sectors, are most at risk, while high-skilled jobs that require creativity, social intelligence, and decision-making abilities will be less likely to be replaced by machines. However, other scholars argue that AI has the potential to create new job opportunities and enhance productivity and efficiency. A report by McKinsey Global Institute (2017) suggests that AI could create up to 20 million new jobs globally by 2030. They suggest that AI will lead to the creation of new industries and the transformation of existing ones, creating new opportunities for human workers. Upskilling and reskilling the workforce is a crucial factor in adapting to the changing demands of the labour market. In their study, Brynjolfsson and McAfee (2014) suggest that technology is changing the nature of work, and workers need to acquire new skills to remain competitive in the labour market.

They suggest that education and training programs should focus on developing skills that are complementary to AI, such as creativity, critical thinking, and problem-solving.

Another area of research has been the potential benefits of AI in the finance sector. AI has the potential to increase efficiency, reduce costs, and improve accuracy. For example, AI algorithms can be used to analyse financial data and identify patterns that may be missed by human analysts. This can help organizations make better decisions and reduce the risk of financial fraud. However, there are also concerns about the potential risks of AI in finance. For example, there are concerns about the ethical implications of using AI algorithms to make decisions about loans or investments. There is also the risk of cyberattacks and the potential for AI systems to be hacked or manipulated. Overall, the literature suggests that while AI will have a significant impact on the finance sector, it is unlikely to replace human workers entirely. Instead, AI will augment human capabilities and enable organizations to work more efficiently and effectively. However, there are also risks and challenges associated with the adoption of AI, and businesses will need to navigate these carefully to ensure a smooth transition to an AI-enabled future.

RESEARCH METHODOLOGY:

In the finance sector typically involves a combination of quantitative and qualitative methods. Quantitative methods involve the use of statistical and mathematical models to analyse numerical data, while qualitative methods involve the collection and analysis of non-numerical data such as interviews, surveys, and case studies. In recent years, artificial intelligence (AI) has become an increasingly important tool in the finance sector. AI can be used to automate tasks such as data analysis, risk assessment, and fraud detection, allowing financial institutions to operate more efficiently and effectively. However, the increasing use of AI has raised concerns about the future of work. Some experts predict that machines will replace human workers in many industries, including finance. While it is true that AI has the potential to automate many tasks that are currently performed by humans, it is important to remember that AI is still in its early stages of development. It is unlikely that machines will be able to replace human workers entirely in the near future. Instead, it is more likely that AI will augment human workers, allowing them to focus on tasks that require human judgement and creativity. For example, AI could be used to automate routine tasks such as data entry and processing, freeing up human workers to focus on tasks that require critical thinking and problem solving.

Techniques:

Artificial Intelligence (AI) is being increasingly used in finance due to its ability to analyse vast amounts of data, detect patterns, and make predictions. Some of the techniques used in AI in finance include:

- **Sentiment analysis:** Sentiment analysis is used to analyse social media and news feeds to gain insights into market sentiment and news events that may impact financial market.
- **Computer vision:** Computer vision is used to analyse visual data such as satellite images and video feeds to gain insights into areas such as supply chain management and asset tracking.

- **Robotics Process Automation (RPA):** RPA involves the use of software robots to automate repetitive tasks such as data entry, account reconciliation, and report generation, freeing up employees to focus on more complex tasks.

These techniques are being used in various areas of finance such as fraud detection, risk management, portfolio optimization, trading, and customer service. As AI continues to evolve, it is expected to play an increasingly important role in the finance industry.

Exploring new ways in which AI can be used to improve financial decision-making and outcomes. Here are some potential new applications of AI in finance:

- **Personalized financial advice:** AI can be used to analyse individual financial data and provide personalized recommendations for investments, debt management, and other financial decisions.
- **Fraud detection:** AI can be used to detect fraud in real-time by analysing large amounts of financial data and identifying unusual patterns or transactions.
- **Trade execution:** AI can be used to automatically execute trades based on pre-defined criteria, such as market conditions, news events, or investor sentiment.
- **Natural language processing for investor sentiment analysis:** AI can be used to analyse news articles, social media posts, and other sources of financial news to determine investor sentiment and potential impacts on the market.
- **Improved credit risk assessment:** AI can be used to analyse large amounts of data to determine creditworthiness, including factors such as income, credit history, and spending habits.
- **Customer service:** AI can be used to provide personalized customer service to financial customers through chatbots and virtual assistants, helping to improve customer satisfaction and reduce costs.
- **Asset management:** AI can be used to analyse large amounts of financial data to identify trends and optimize asset allocation strategies for investment portfolios.

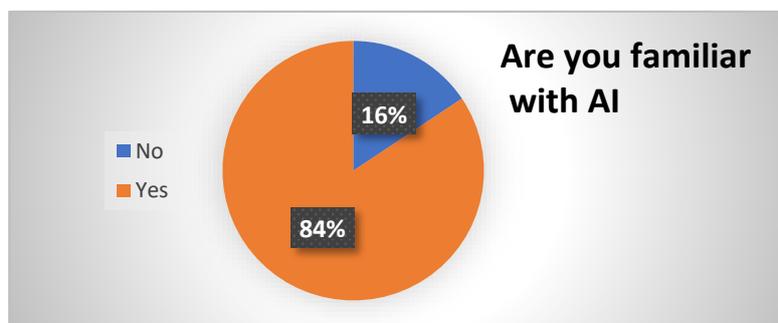
New applications that have not yet been explored:

There are many potential new applications of AI in finance that have not yet been fully explored. Here are some examples:

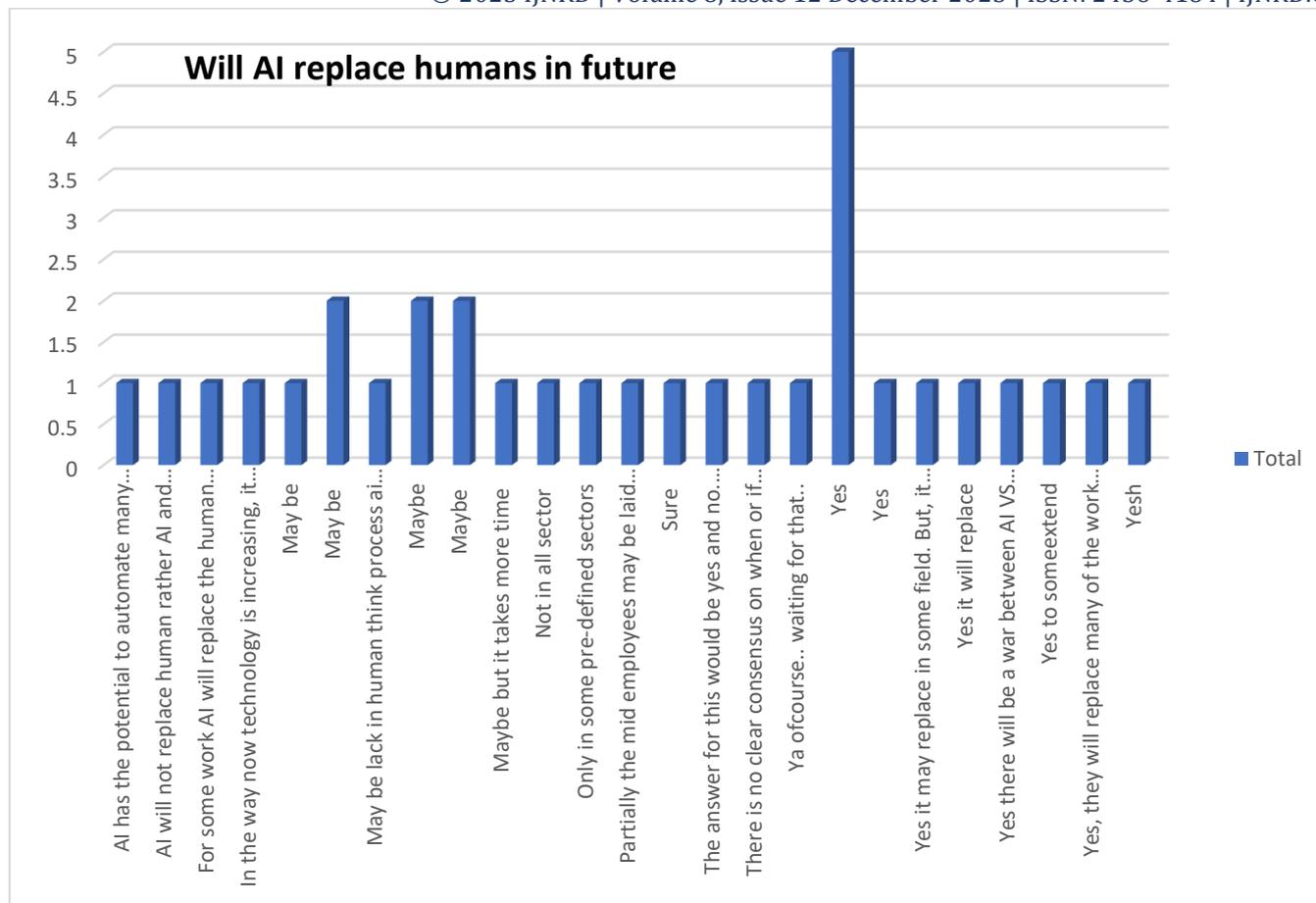
- **Predictive maintenance in finance:** AI can be used to analyse financial data and identify potential issues or risks before they become problems. This could be applied to areas such as loan servicing or asset management.
- **Real-time financial risk management:** AI can be used to analyse real-time financial data and identify potential risks or opportunities as they arise. This could be used in trading or portfolio management.
- **Dynamic pricing:** AI can be used to analyse market conditions and adjust prices in real-time to optimize revenue and profits. This could be applied to areas such as insurance or lending.
- **Automated financial reporting:** AI can be used to automate financial reporting processes, reducing the risk of errors and improving efficiency.

- **Natural language processing for contract analysis:** AI can be used to analyse complex financial contracts and identify potential risks or opportunities. This could help improve compliance and reduce the risk of legal disputes.
- **Smart financial chatbots:** AI-powered chatbots could be used to provide personalized financial advice and guidance to customers, helping to improve financial literacy and engagement.
- **Blockchain-based financial systems:** AI could be used to analyse and optimize blockchain-based financial systems, improving security, efficiency, and transparency.

DATA ANALYSIS:



From this graph, we can clearly understand that Artificial intelligence has a broad awareness of most people, but it may not be familiar with all individuals, 84% of people are aware of AI whereas 16% of people are not aware it due to lack of general understanding about how AI works, its limitations, and its potential consequences. Some people may have misconceptions or fears about AI, such as the idea that it will replace human jobs entirely or that it poses a significant threat to humanity. Overall, while AI is becoming more prevalent in our lives, there is still much work to be done to ensure that people have a clear and accurate understanding of its capabilities and limitations.



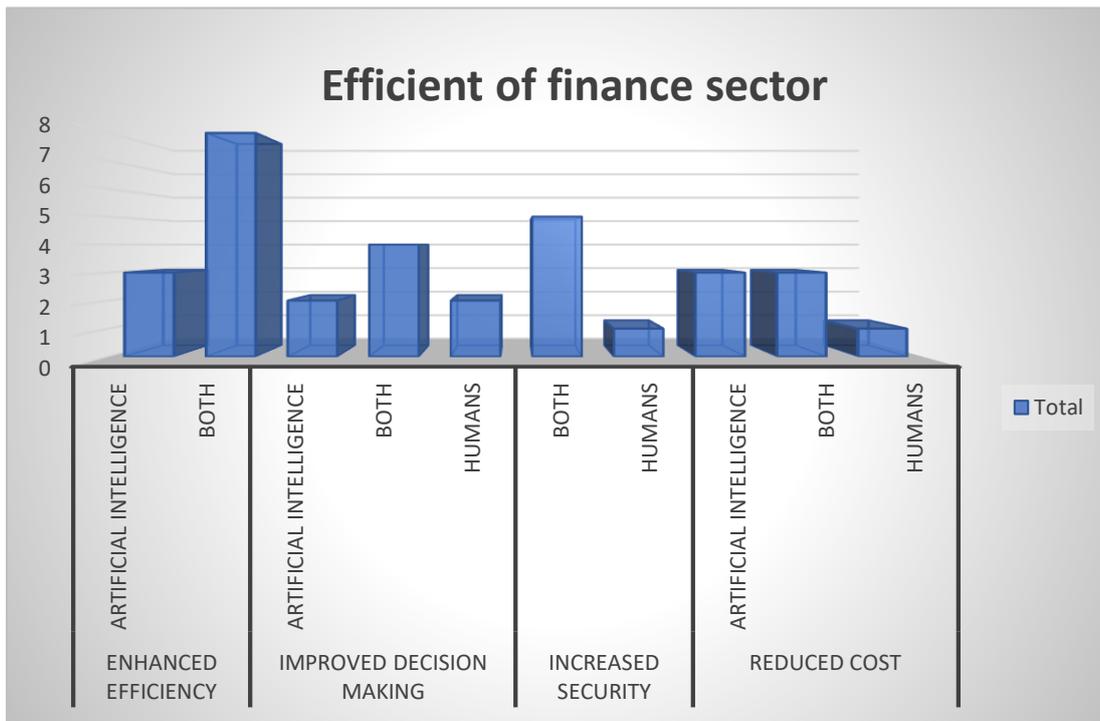
The answers provided reflect a range of opinions on whether AI will replace humans in the future. Some respondents believe that AI will replace humans in some fields or sectors, while others feel that AI will not replace humans entirely but may take over some tasks or jobs. There are also opinions that AI will create a more secure environment for certain sectors or industries. It is important to note that while AI is becoming more advanced and capable, there are still limitations to its abilities, and it is not yet clear how far it will progress in the future. It is also important to consider the potential ethical and societal implications of AI replacing humans in certain roles or industries.

- This would be yes and no. Not that AI will replace humans but will create a secured environment for financial sector:** The statement suggests that the impact of artificial intelligence (AI) on the financial sector is not straightforward and cannot be answered with a simple "yes" or "no". Instead, AI may have both positive and negative effects on the sector.

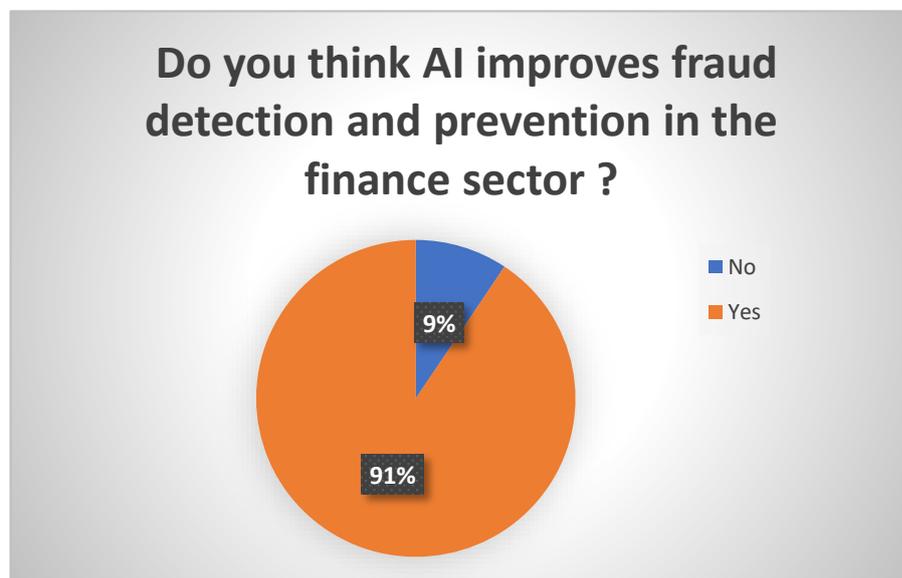
On the one hand, AI has the potential to create a more secure environment for financial transactions. For example, AI can be used to detect and prevent fraudulent activities in real-time. AI-powered systems can analyse vast amounts of data and identify patterns that may indicate fraudulent behaviour, which can help financial institutions to prevent losses. On the other hand, there is concern that AI may eventually replace some jobs in the financial sector. For instance, AI-powered chatbots may replace human customer service representatives in responding to basic customer inquiries. This may lead to job losses for some employees in the financial sector.

Overall, it is important to note that AI is a tool that can be used to augment and enhance the capabilities of human workers in the financial sector, rather than replace them entirely. By leveraging the power of AI, financial

institutions can create a more secure environment for financial transactions, while also providing better services to their customers.



	AI	HUMANS	BOTH
Enhanced Efficiency	Low	-	High
Decision Making	Medium	Low	High
Increased Security	-	Low	High
Reduced Cost	High	Low	High



The 91% of people who believe that AI improves fraud detection and prevention in the finance sector is increasing because of several reasons.

- Firstly, AI-based systems have become more accurate and sophisticated in recent years, allowing them to detect fraudulent activities more efficiently. As a result, financial institutions are increasingly relying on AI-based systems to detect and prevent fraud.
- Secondly, people are becoming more aware of the benefits of AI-based fraud detection and prevention systems. They realize that AI systems can process vast amounts of data much faster than human analysts and can identify patterns and anomalies that are difficult for humans to detect. As a result, people are beginning to trust AI systems more than they trust human analysts.
- Thirdly, there is an increasing demand for real-time fraud detection and prevention systems. Traditional methods of fraud detection, such as manual reviews and rule-based systems, are time-consuming and can result in delays in detecting fraudulent activities. AI-based systems can detect fraud in real-time, which is crucial for preventing financial losses.
- Lastly, the use of AI in fraud detection and prevention has resulted in cost savings for financial institutions. By automating the detection and prevention of fraud, financial institutions can reduce the need for human analysts and manual reviews, resulting in significant cost savings.

Overall, the increasing 91 %of people who believe that AI improves fraud detection and prevention in the finance sector is due to the increasing sophistication of AI-based systems, the real-time nature of fraud detection and prevention, the growing awareness of the benefits of AI-based systems, and the cost savings associated with the use of AI.

FINDINGS:

Partially the mid employees may be laid off due to automation of AI :

The statement suggests that the use of automation and artificial intelligence (AI) in the banking industry may lead to job losses for some mid-level employees. With the increasing adoption of digital technology and AI systems in banking, many routine tasks such as data entry, transaction processing, and customer support can be automated, leading to a reduction in the number of employees required to perform these tasks. Mid-level employees in banking typically include positions such as loan officers, operations managers, and customer service representatives. These employees may be particularly vulnerable to job losses as their roles may involve a significant amount of routine work that can be automated. However, it's important to note that not all jobs in banking can be fully automated. Some tasks, such as risk management, financial analysis, and relationship management, still require human expertise and critical thinking. Furthermore, the adoption of AI systems in banking can also create new opportunities for employees to work in areas such as data analytics, cybersecurity, and digital marketing. While the automation of jobs in banking can lead to job losses for some employees, it can also result in cost savings for banks, increased efficiency, and the ability to provide more personalized and

efficient services to customers. Therefore, it is important for employees to develop new skills and adapt to changing technologies to remain relevant in the industry.

LIMITATIONNS:

While the use of Artificial Intelligence (AI) in the finance sector has grown in recent years, there are still several limitations to consider before concluding that machines will replace human workers in this industry.

- **Complex decision-making:** The finance sector often involves complex decision-making that requires a deep understanding of both financial and regulatory factors. While AI can assist with these decisions, it cannot replace the nuanced judgment and expertise of human workers.
- **Lack of empathy:** The finance sector also requires human interactions with clients that involve empathy, emotional intelligence, and intuition. While chatbots and virtual assistants can help with basic queries, they cannot replace the personal touch and individualized service that humans provide.
- **Limitations in AI technology:** While AI has made significant strides in recent years, there are still limitations to its capabilities. For instance, AI is not yet able to handle non-routine tasks that require creative problem-solving, strategic planning, and human judgment.
- **Ethical and legal concerns:** The use of AI in finance raises ethical and legal concerns around privacy, security, and fairness. Regulations and guidelines around the use of AI are still being developed, and the finance sector needs to ensure that AI is used in an ethical and responsible manner.
- **Resistance to change:** Finally, there may be resistance from workers and customers to the use of AI in finance. This resistance may stem from concerns around job loss, distrust in technology, or a preference for human interactions.

In conclusion, while AI has the potential to transform the finance sector, it is unlikely to completely replace human workers. Instead, the future of work in finance is likely to involve a combination of human expertise and AI-powered tools working together to enhance productivity, efficiency, and customer service.

FUTURE RESEARCH:

The future of research in artificial intelligence (AI) and the finance sector is likely to focus on developing more advanced AI-powered tools and technologies that can augment human skills and enhance productivity. Specifically, future research in this area could include:

- Developing more advanced AI algorithms and models that can handle complex financial data, identify patterns, and make predictions with greater accuracy.
- Creating AI-powered tools that can automate routine tasks such as data entry, fraud detection, and compliance monitoring, freeing up human workers to focus on more complex tasks.
- Investigating the use of AI in areas such as risk management, investment analysis, and portfolio management, to help financial institutions make better decisions and improve their performance.

- Addressing the ethical and legal concerns surrounding the use of AI in finance, such as data privacy, security, and bias.
- Exploring how AI can be used to enhance customer experience in the finance sector, through personalized recommendations, chatbots, and other tools that can provide faster and more efficient service.

Overall, future research in AI and the finance sector will need to balance the potential benefits of automation and efficiency with the need for human expertise and empathy. The finance industry will require a workforce that has a combination of technical and soft skills, with humans and machines working together to create greater value and deliver better outcomes for customers.

CONCLUSION:

In conclusion, while the use of Artificial Intelligence (AI) in the finance sector has grown in recent years, it is unlikely that machines will completely replace human workers. Instead, the future of work in finance is likely to involve a combination of human expertise and AI-powered tools working together to enhance productivity, efficiency, and customer service. The finance sector will still require human expertise for complex decision-making, empathy, and emotional intelligence, while AI can automate routine tasks, identify patterns, and make predictions with greater accuracy. Future research in AI and the finance sector should focus on developing more advanced AI algorithms and models, creating AI-powered tools that can automate routine tasks, investigating the use of AI in areas such as risk management and investment analysis, addressing ethical and legal concerns surrounding the use of AI, and exploring how AI can enhance customer experience in the finance sector. Overall, the finance industry will require a workforce that has a combination of technical and soft skills, with humans and machines working together to create greater value and deliver better outcomes for customers.

REFERENCES:

- Bredt, Stephan. "Artificial Intelligence (AI) in the financial sector—Potential and public strategies." *Frontiers in Artificial Intelligence* 2 (2019): 16.
- Canhoto, Ana Isabel. "Leveraging machine learning in the global fight against money laundering and terrorism financing: An affordances perspective." *Journal of business research* 131 (2021): 441-452.
- <https://web.p.ebscohost.com/ehost/detail/detail?vid=3&sid=b2c2f4a7-8408-4a87-8048-5c0a5122e9ed%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#AN=7339881&db=bsh>
- <https://web.p.ebscohost.com/ehost/detail/detail?vid=4&sid=b2c2f4a7-8408-4a87-8048-5c0a5122e9ed%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#AN=wapo.76c35408-4959-11e8-827e-190efaf1f1ee&db=bwh>

- <https://web.p.ebscohost.com/ehost/detail/detail?vid=5&sid=b2c2f4a7-8408-4a87-8048-5c0a5122e9ed%40redis&bdata=JnNpdGU9ZWWhvc3QtbGl2ZQ%3d%3d#AN=135865767&db=bsh>
- Kaya, O., Schildbach, J., AG, D. B., & Schneider, S. (2019). Artificial intelligence in banking. *Artificial intelligence*.
- Lin, Tom CW. "Artificial intelligence, finance, and the law." *Fordham L. Rev.* 88 (2019): 531.
- Mogaji E, Nguyen NP. Managers' understanding of artificial intelligence in relation to marketing financial services: insights from a cross-country study. *International Journal of Bank Marketing*. 2022 Sep 1;40(6):1272-98.
- Mogaji, Emmanuel, and Nguyen Phong Nguyen. "Managers' understanding of artificial intelligence in relation to marketing financial services: insights from a cross-country study." *International Journal of Bank Marketing* 40.6 (2022): 1272-1298.