

## From Intuition to Intelligence: Examining the Role of AI in Shaping Decision Making in the Business World

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**Abstract:** The integration of Artificial Intelligence (AI) into business decision-making processes has redefined operational efficiencies, strategic planning, and competitive positioning. This study critically examines the role of AI in augmenting decision-making within organizations, emphasizing its capacity to enhance analytical precision, optimize resource allocation, and drive innovation. While AI offers transformative potential, its adoption is impeded by challenges related to transparency, interpretability, and ethical governance. Through a systematic literature review and quantitative analysis, this research explores the impact of AI on business intelligence, identifies barriers to its implementation, and proposes strategies for responsible adoption. The findings underscore the necessity of a synergistic approach wherein AI complements human judgment rather than supplanting it, fostering a collaborative framework that balances technological advancements with ethical considerations. This study contributes to the growing discourse on AI governance, providing insights into best practices for leveraging AI in business decision-making while ensuring accountability, fairness, and trust.

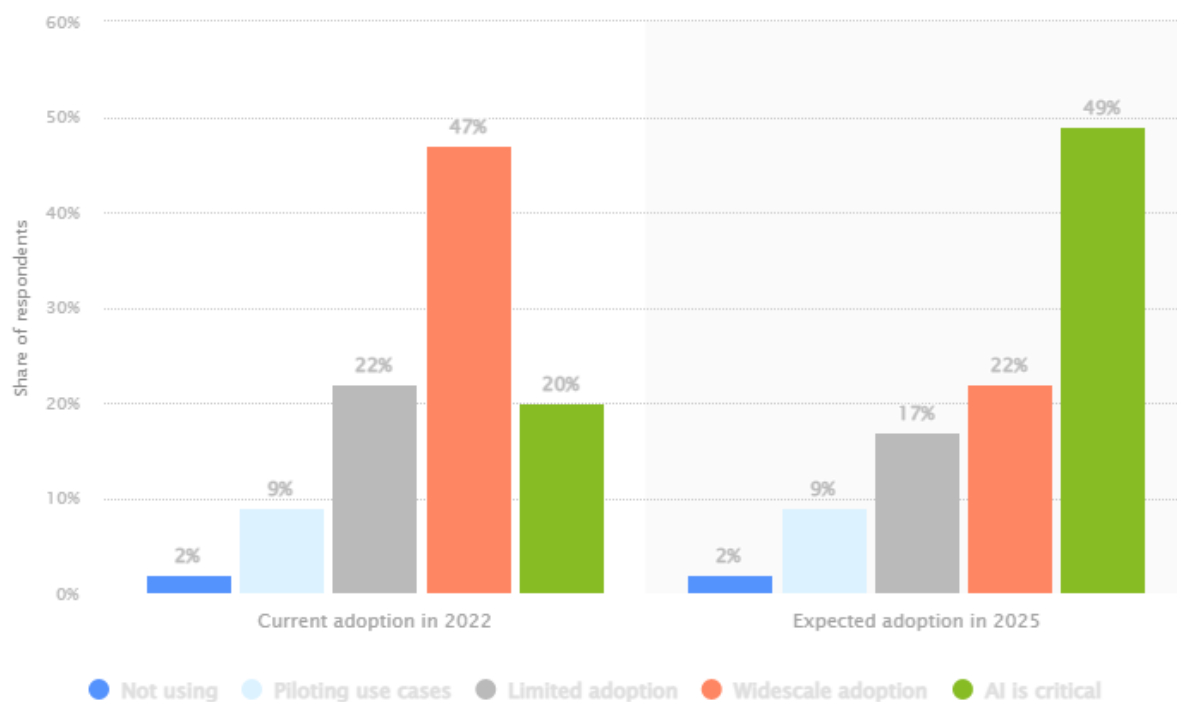
**Keywords:** Artificial Intelligence (AI), Business Decision-Making, AI-Driven Analytics, Adoption in Organizations, Strategic Business Planning, Machine Learning in Business, AI Governance and Ethics, Transparency and Interpretability in AI, Human-AI Collaboration, AI in Corporate Strategy, Data-Driven Decision-Making, Automation and Digital Transformation, Challenges in AI Implementation, AI-Enhanced Business Intelligence, Responsible AI Deployment

### 1. Introduction

#### Overview of the research topic

In simple terms, artificial intelligence (AI) can be understood as a set of technologies that can help computers perform functions which are generally assumed to be carried out by humans. With the help of intricate algorithms, AI can be used to understand and process spoken and written language to analyse data and make recommendations in a professional environment (Pan & Zhang, 2021). Even though the acceptance of AI in mainstream society continues to still suffer backlash, it has the potential to transform businesses with the different kinds of assistance that it provides to people, ranging from machine learning, cybersecurity, and customer relationship management. People need to understand that AI is not a replacement for human intelligence but rather helps with supporting people and improving the existing protocols of the organisation. The image below shows how in 2022, more than half of the organisations in the IT sector have adopted AI in their business and that the role of AI will be critical by the year 2025 (Statista, 2023). Much of the adoption of AI in this category can be credited to the ability of AI

to optimise businesses and add value to the organisation.



**Figure 1: AI adoption rate in businesses globally**

(Source: Statista, 2023)

One of the important capabilities of AI is its ability to make decisions for itself in situations that cannot always be foreseen. The cognition ability of humans can be increased with the help of AI to address complexity within the organisation. While AI is used to solve these issues, humans within the organisation can apply a more holistic approach to deal with the uncertainty of the organisations and improve the decision-making ability of the organisations. AI is an umbrella term that includes different sets of tools, techniques and algorithms that can be utilised for deep learning (Jarrahi, 2018). The emerging AI technologies possess the ability to learn and improve themselves through different knowledge-based tasks, the intelligence level of AI is improving is expanding rapidly, and the organisation needs to adopt these semi-autonomous decision makers within the organisation to remain competitive within the market. Researchers believe that the wide-scale contribution of AI in the different sectors of life has ushered in a new age of industrial revolution with its unprecedented wave of automation.

### Problem Statement

The study found that even though AI can revolutionise the e-commerce platform with its wide range of image and speech recognition, automation, security and development systems, there are issues with fairness, suitability, interpretability and transparency which prevent people from readily adopting it to their organisation (Khrais, 2020). Furthermore, for the early application of AI in businesses, proper management and administrative features need to be present, which most traditional businesses do not possess, thereby making it hard for them to readily adopt AI in their businesses. However, in the era of AI and big data, finding common grounds for innovative technologies and human labour to coexist symbiotically is important to raise the capabilities of both sides. While there are no proper ways to ensure that the algorithms that are used to develop the AI are fair and transparent, developers can control it to some extent by making sure of the sources from which AI gathers information.

Researchers have argued that even though the concept of AI and its intelligence is similar to that of humans, interpreting and deciphering the thought process of AI is similar to that of other super-intelligent beings. As a result, it is often hard for organisations to predict the behavioural patterns of AI and the liability that is involved with the procedure. The bottom line problem statement for the present research is therefore to understand how transparency levels for the software can be increased to initiate trust among the targeted audience. Organisations within the business world need to be made aware of the capabilities of AI and the potential that it provides to their

business (Duan, Edwards & Dwivedi, 2019). AI can enhance the decision-making of organisations, reinvent business models and ecosystems to improve customer experience and introduce new digital initiatives within the organisation. Research has shown that AI can help in aiding unstructured decisions at the strategic level of organisations, making use of AI can also result in the creation of a stable and familiar working environment.

### **Significance of the Research**

The significance of the present research lies in its ability to make businesses understand the interpretability and decision-making abilities of AI. The study aims to remove the misconception regarding AI replacing humans in the work environment, rather the study takes a more pragmatic approach to show collaboration with AI can increase the efficiency of organisations. The decisions that are taken by businesses involve complexity, ambiguity and uncertainty, humans and AI both possess unique abilities that can reduce the uncertainty levels experienced by the organisation (Alliou & Mourdi, 2023). The study confirms the analytical skills of AI and evaluating large value sets of data, while the involvement of humans in the business procedure is needed to bring in a more organic and deeper understanding of the problems and solutions. AI should exist to augment human capabilities, not replace them, the present research embraces collaboration.

The new era of AI has introduced robots that are equipped with artificial intelligence that can carry out intricate decisions within the organisation. The increase in technology within the communication and information technology sector has fostered widespread growth and hyperconnection on a global scale. At the core, it can be seen that the Internet of Things (IoT) forms the foundation that connects humans with AI, the interconnectedness results in transformative reality and enhances understanding of its ability to reshape the business landscape. While the price of the technology needed to adopt AI continues to be an issue, thorough research on its abilities is needed to convince organisations to adopt it. The present study therefore highlights the potential benefits which AI brings to organisations and the strategic roadmap that it can provide organisations to improve their abilities and mitigate problems within the organisation.

## **2. Background and Related Research**

### **Review of Relevant Literature**

Cao et al. (2021) state in their research that making use of the decision-making capabilities of AI within an organisation setting remains one of the most common applications of AI, studies have shown that 57% of organisations have been piloting the use of AI in their companies, among which 59% have strategies through which AI can adopt within the business. The author has pointed out that AI can undertake problems and complex tasks which require more cognitive capabilities than humans, however, the potential which AI processes can fully be applied when human decision-makers accept the need for AI within the organisation. The attitude and intentions of the managers are important in this context, as they are responsible for adopting AI within the organisation, which is generally conducted after evaluating the benefits and concerns regarding the use of AI. Previously AI methods were assumed to capture knowledge and replicate human intelligence, however, the presence of consciousness suggests the use of AI to assist humans in their decision-making and not replace them completely. Dwivedi et al. (2021) in their research has expanded on the ability of AI to overcome some of the computationally intensive, intellectual and creative barriers of employees, with the improved decision-making abilities of the organisations, the company will be able to apply AI in different domains, similar to past research works, the study also suggests that AI should exist to support human judgement and not replace them. The study has elaborated on how the effectiveness of AI can only be realised through its acceptance by the end users, therefore the drawbacks cannot be estimated without proper acceptance of AI, the study has shared that while technology does not necessarily have any limit to advancement, bottlenecks can be encountered during the procedure which predicts the success and failure of the information systems. More research work is needed to understand how the transparency issue with AI can be solved to increase the level of automated decision-making. The concept of the black box has been shown in the research to highlight how without proper education and transparency, organisations are not likely to adopt AI systems in their organisations.

Hilb (2020) has researched which type of decisions benefit the most from being driven by AI, to ensure that the decision made by the AI is informed, it needs to go through three stages, these are conceptualization, information and prediction. As AI gets more and more accepted within society, the focus will be shifting from testing to legally binding requirements, the research shares that an AI-led decision has good potential to be reliable, as the decision-

making of the AI gets reinforced and supervised, it will lead to more support for augmented and autonomous intelligence, making the decisions more interrelated. Governance of data under the use of AI is the key focus, as companies start to understand the need for training and collecting feedback, data becomes a valuable asset.

In the study conducted by Olier, & Valderrey (2021) the researchers have focused on the diversity and benefits of new technologies and how they help with different aspects of society. Research shows that machine learning algorithms and AI are constantly making new kinds of breakthroughs in this sphere which is increasing the capability of common people. As these technologies update it is necessary to combine them with human creativity to get better results, embedding algorithms and AI within the organisational functions has the potential to create new jobs. The use of AI will also help in influencing closely interwoven policy decisions that will eventually improve the firm performance. The study has focused on the need for regulations within businesses to make sure that they perform well, and the social obligations which the organisation have towards society. Using AI to make decisions within the organisation will lead to optimization and better utilisation of resources. The importance of AI cannot be ignored in the current era as it can allow modern firm owners to overcome current market issues. Integrating AI in operational activities can be useful for firms to undertake appropriate measurements for ensuring stable growth. Reasons such as these have made it important for firms to integrate AI into operational activities along with increasing the productivity rate. Apart from this, firms can also focus on the integration of AI by increasing the investment rate which can allow firms to fulfil necessary expenses.

Strich, Mayer & Fiedler (2021) in their research has shown that the introduction of AI to the workforce has helped in substituting employee tasks and responsibilities, allowing the organisation to focus on other aspects of the business. The study has highlighted critical issues such as organisations being unable to interact with the system where the primary decision-making is done through AI. Employees previously were able to eliminate threats or even overrule certain decisions made by the AI system, however, introducing AI for decision-making within the organisation will potentially lead to impeding the professional ability to respond in specific scenarios and challenge their identity. The research carried out on decision-making AI systems has therefore suggested that it will lead to discrepancies within the professional role as it will limit the abilities of the employees and will not provide them with the opportunity to influence or adapt the organisational functions. The study warns organisations about the negative impacts of such a system and the potential harm that it can bring to the employees of an organisation and their core activities.

The duality of the public sector in dealing with AI has been researched by Kuziemski & Misuraca (2020), the researchers have shown that while the public sector has been trying to protect people from the problems created in society by the wide-scale adoption of AI, they have themselves started introducing AI to increase their efficiency. The study has discussed the effects of automated decision-support systems and the role which government plays in the process. The use of machine learning has slowly become a generalised mode of rational ordering which focuses on abstraction and deriving authority. The study suggests that the adoption of AI in public administration has enormous benefits as it increases the efficiency of people and provides less attention to the different strategies that have been adopted. Overall, while the study has presented evidence of the use of AI in safeguarding and implementation within the public sector, it has not presented the precision and effectiveness of the algorithm. The study further suggests that in most cases, the suggestions of the AI are often not questioned due to the lack of time of the officials, fear of repercussion and overall trust in the system.

The study by Bharadiya (2023) on the other hand has emphasized the different trends and opportunities which AI has brought to businesses. While there are ill impacts of the use of AI as pointed out by other researchers, the study by Bharadiya shows that machine learning and AI within business intelligence have been extensive. AI can help organisations detect anomalies in their decision-making processes and make better forecasting which eventually will empower the business and provide it with the competitive edge that it requires for identifying new revenue streams. The study has shown the different potentials which AI and machine learning have in uncovering the complex patterns for human analysts and the predictions that they make in improving decision-making. Through the analysis of customer behavior and preferences, organisations will be able to provide people with personalized services tailored according to customer experience. Findings of the research have also shown that the enhanced decision-making of the organisation has raised innovation and competitive advantage of the organisation which helps in driving innovation and competitiveness within the modern business landscape. However, while there are benefits, it is also important to emphasise the decision-making process of the AI to try and understand the reasoning for specific decisions that are made by the system.

In the research which has been conducted by Kitsios & Kamariotou (2021), the study shared that while AI has huge potential to create business value through its decision-making skills, lack of practical implementation and expertise severely hamper the process. As the modern business world continues to upgrade itself in a rapid phase, organisations need to prioritize and reduce their waiting periods, more awareness of the market conditions can help in fastening up these processes. With the help of AI, businesses will not only be able to perform better, but they will also have the competitive advantage which is needed to put themselves in a pivotal position in the market. The study elaborates, that in order to recognize the process of transformation within this competitive environment, it is crucial to review the different corporate strategies and reconsider the strategic plans needed for integrating the AI tools. The objective of most organisations is to establish sustainable performance for themselves and gain an advantage over other market competitors through dynamic business environments and decision-making. The use of IT in business is not a current phenomenon, as the study has shared that the integration of AI is a much more complicated process due to its ability to accomplish functions that require cognition.

### **Research Gap and Controversies**

The research conducted by Cao et al. (2021) has its drawbacks, the study has mostly explored the improvements which AI can bring to the organisation but has not explored the challenges it brings and the “dark side” of AI. In order to convince organisations to adopt AI in their businesses, the transparency levels associated with AI need to be increased. Little is known about the factors which allow the AI to make its predictions, and the benefits and dangers of the IT models as a result need to be considered while dealing with controversial technologies. The study by Dwivedi et al. (2021) has pointed out some of the limitations of AI, the study shares that theory development in many algorithm development stages has less priority, and as a result, they can be exploited. The study has also highlighted the potential gap between digitisation and digital transformation. The potential for inherent bias has been mentioned but not explored within the research, therefore requires more research on the subject.

The study carried out by Hilb (2020) has focused on the governance of data, however, it has been mentioned that the governance of these assets needs to be measured and addressed at a broader level. On the other hand, data-related issues within an organisation have major risks and are known to determine the corporate culture and relationship between the company and society. The present study has focused on both governance of and governance with artificial intelligence and how it has been shaping the future of artificial intelligence. The research by Olier, & Valderrey (2021) has primarily focused on the machine learning and other forms of developments which AI can potentially bring to society, and while it has discussed about the potential loss of freedom and geopolitical stability, the study has failed to elaborate on ways through which these gaps can be reduced and alienation of society can be avoided.

The observations of Strich, Mayer & Fiedler (2021) have their limitations, as the entire study has been based on the perception of the new interview participants that were selected for the research. There has been an overall lack of research conducted on substitutive decision-making AI and much of the findings in the study have primarily been done based on assumptions. The impact of this form of AI over a longer period needs to be studied to determine its impact. Misuraca (2020) has also researched the controversy that surrounds the opacity of the AI system, it has shown examples of the different problems which are encountered by migrants and refugees because decisions against them are made through binary options rather than human decision-making, this can increase the level of injustice and inequalities faced by these people. The research carried out has raised many important questions about the adoption of AI in the decision-making process within organisations, it has not studied the ways these problems can be addressed.

The study by Bharadiya (2023) has made use of thematic analysis to observe the different ongoing trends with machine learning, predictive analytics and forecasting of AI. While the ethical aspects and opportunities have also been researched within the study, not much attention has been provided to understanding the biases of decision-making AI and the harmful impacts that it can have on privacy and fair use of AI. While the research by Kitsios & Kamariotou (2021) has critically discussed the need to adopt AI, there have been gaps in the context of formulation and implementation of AI, the study has shown the potential of AI but not the organizational practices and management required to exhibit AI.

**Studies related to Research Problem**

In the study by Cao et al. (2021), the attitudes of the organisational managers towards AI have been closely analysed, the study has suggested that the use of UTAUT and IAAAM models can improve the understanding, increase the potential benefits while reducing the negative impacts that are assumed to be caused by AI. Dwivedi et al. (2021) have presented multiple perspectives on the use of AI, and different experts from the public sector to industry and academics were consolidated to understand the rapid emergence of AI. The study has shared the potential which AI has and the numerous benefits that it can provide for the implementation of technology.

Hilb (2020) has positively dealt with the idea of AI adoption, the study shares that organisations need to be more responsible while dealing with AI to help build trust with society. The study has researched the impact which AI will have on corporate governance, and how this will lead to a whole new range of corporate governance and mechanisms, as AI updates itself, the liability aspect which organisations have can be removed to establish more control over the decision making of the organisation. In the study by Olier, & Valderrey (2021), the need to review business strategies has been discussed, as this kind of technological advancement is relatively new, policymakers and businessmen have the responsibility to make sure they do not transgress boundaries. The evidence from the research has shown the potential which AI holds in digital transformation and its ability to shape the fate of the organisation.

Despite its limitations, the research by Strich, Mayer & Fiedler (2021) has shown the other side of incorporating AI in the decision making process of organisations, the different forms of challenges that are experienced and the potential of it in removing the professional identities of employees. The findings of Misuraca (2020) share how even a trivial application of AI within the public sector can limit the control of the citizens and therefore authorities need to be more careful of its usage. The researcher has argued that with the adoption of AI, control over the physical space can be gained and this leads to automated decision-making that will eventually create problems for the organisation. While the discussion of AI does not include the problem with power distribution at this stage, it needs to be evaluated eventually when voluntary standards and self-governance practices are discussed.

Bharadiya (2023) within the research has shown the different potential of AI and has argued that AI-driven insight is necessary for organisation decision-making as it improves resource allocation and the overall efficiency of the organisation through the personalized experience that it provides. Overall, the purpose of Kitsios & Kamariotou (2021) was to show the correlation between AI and corporate strategy with the help of a systematic review, the study has shown the growing interest of organisations in adopting AI for the business and the IT infrastructure which is needed to support the systems for the new organisations and improving their capability of harnessing innovation.

**3. Research Objectives**

The main aim of the study has been to examine the role which AI plays in the decision making process of organisations, based on the literature review that has been conducted, the following objectives have been identified:

- To gather proper insight regarding interpretability and decision-making abilities which AI can provide to organisations.
- To examine the overall relationship between AI adoption and business decision forecasting.
- To explore the different problems which organisations encounter while adopting AI to their businesses.
- To identify the growth potential of AI in business along with better ways that can help with the implementation process.

**4. Methodology**

**Research Philosophy**

The success of the research is dependent on the use of the right research paradigms, in this context, research philosophy is a crucial methodological tool that helps in providing a guideline for the entire research procedure. While there are four distinctive types of research philosophies, primarily positivism, pragmatism, realism and interpretivism (Ugwu, Ekere & Onoh, 2021), the present research will utilise positivism. Positivism is a form of philosophy that deals with factual knowledge, the data goes through a series of observations before being deemed trustworthy. As the research will be examining the role played by AI in the business world and its contribution to

shaping the decision making process, the positivism research philosophy will be helpful because of its highly structured nature, the findings of the philosophy are also dependent on quantifiable observations and therefore will require quantitative analysis. Positivism philosophy believes that knowledge stems from human experience, therefore with the help of quantitative approaches, the study will be able to decipher the different associations and casual relationships shared between the variables within the research (Park, Konge & Artino, 2020). The role of AI will be assessed thoroughly to learn how it has been shaping the business world, in this philosophy subjective values and experience are generally ignored, so that the emphasis remains on the context of AI.

### **Research Design**

The purpose of the research design is to help the researcher remain attentive towards the research methods by identifying the right methods that are suitable for carrying out the research. Pandey & Pandey (2021) in their study have elaborated that research design is the framework which is used for collecting and analysis of the data. The researchers have described research design as the blueprint that helps with the collection, measurement and analysis of the data, the entire procedure can be mapped with the help of this method. There are two primary types of research design, these are exploratory and conclusive research designs. Since the defining feature of a research is its cross sectional study and ability to compare the findings across different population groups, a quantitative research design will be adopted, which is a sub-section of conclusive research design. The quantitative research design has been chosen due to its ability to collect and analyse data that is numerical for testing the research hypothesis (Benninger et al. 2020). Since the research is focused on understanding the importance of AI in a business climate, this research method will help provide a detailed view based on survey results collected from business owners who have actively adopted or have been thinking of adopting AI in their businesses.

### **Data Collection Process**

Choosing the appropriate data collection method is also important for the research, in this context, the positivist research philosophy and quantitative research design have suggested the use of primary data collection methods. Data collection methods can be divided into two distinctive parts, these are primary and secondary data, secondary data is collected from different sources such as newspapers, books, peer-reviewed articles and journals, and primary data is generally collected through interviews, surveys and case studies (Taherdoost et al. 2021). As the present study is required to be quantitative, the survey method will be chosen. The questionnaire for the research will be distributed online with the help of different forums. A convenience sampling method will also be chosen, which is a form of non-probability sampling. The focus of the present research is on understanding the role which AI plays in business, and in order to do that the chosen participants are required to be business owners who possess ideas about the need for AI. The reason for choosing convenience sampling is that it chooses participants from a conveniently available population (Obilor, 2023). From the questionnaires that are returned, 101 will be chosen after making sure they fit the inclusion and exclusion criteria. Choosing the quantitative data collection method will help in the truly unique discovery of data.

### **Data Analysis Process**

After the data collection procedure, the analysis phase of the research will require critical interpretation of the figures and numbers that will emerge from the findings. After receiving back the questionnaires, the findings will be collected and arranged with the help of MS Excel, the data will then be analysed through IBM SPSS, this method has been chosen over the other available ones because of its ability to deal with large quantities of data and ability to perform advanced statistical analysis on the findings. The findings will be presented with different bar graphs highlighting the opinions and preferences of the business owners, a detailed discussion will also be provided within the research to elaborate on all of the findings and show how the use of AI has been positively impacting the business world.

## **5. Expected Outcome**

The expected outcome of the present research will be the business owners sharing their knowledge about how AI has been making the organisation make their decisions in a fast and accurate manner through precision and consistency. The literature review has already highlighted how AI can analyse large amounts of datasets without

## 6. Timeline

[illegible]

Due to the research being primary in nature, certain ethical considerations are to be made in order to protect the rights of the participants. None of the participants will be forced into answering, only through active volunteering will results be collected, the consent of all participants needs to be collected before dealing with the research. Strict anonymity of the participants will be maintained throughout the data collection and analysis methods. The data will be collected with honesty, the results will not be manipulated in any manner to acquire favourable results. The research results will be communicated, and it will be ensured that the participants within the research are not harmed in any manner.

The present research will also have certain limitations, due to a lack of resources in conducting an in-person interview with the different business owners, the study has essentially resorted to a convenience sampling method for the survey carried out. With more time and resources, these different aspects can be explored to acquire the full insight of the business owners and how AI has been transforming business in real time. As the focus of the study has been on understanding the role of AI, carrying out a thematic analysis of past research works could have also been beneficial in increasing the knowledge regarding these issues.

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