Manager's perception of Artificial Intelligence : Case of Moroccan organizations.

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Abstract

Nowadays, the evolution of management in the context of modern technologies has become a necessity, particularly with the emergence of artificial intelligence (AI). This study aims to explore the managers' perception of AI and highlights its advantages and challenges. The research is based on a literature review and a semi-structured questionnaire survey with 23 managers in different sector of activity. By understanding the manager's perception of perceptions, organizations can foster a positive and informed approach to AI integration, leading to a successful application and enhancing decision-making processes. It also contributes to develop performance and leverage competitive advantage. These findings clarify the manager's perception of artificial intelligence in the Moroccan context, which would have several implications on organizations.

Keywords:

Artificial intelligence, manager's perception, Decision-making, Human-AI technology, Competitive advantage, Performance.

Introduction

Artificial intelligence (AI) is metamorphosing business and finance while presenting exciting prospects for digital transformation for organizations. It is changing the way managers and organizations make decisions, taking on professional roles, and transforming existing processes to be faster and cheaper, it is considered the most important general-purpose technology of our time. Artificial intelligence (AI) is a discipline focused on simulating human intelligence in technology (Nilsson, 2014), it includes machine learning (ML), a sub-discipline focused on developing algorithmic models that learn and improve over time (Alpaydin, 2020).

Currently, managers are under pressure to adapt to technological advances, rethink their management styles, and understand the impact of AI on daily activities and tasks. The central proposition is that AI has the potential to transform management practices by enabling a much more effective and efficient innovation process. However, managers' perception of this technology can significantly affect its implementation and use in organizations. Understanding managers' perceptions of AI and the factors that influence their behavior and attitudes toward this technology is paramount to ensuring the successful adoption of AI.

Previous research has examined managers' perceptions of AI in different organizational contexts, but there are still gaps in our understanding of how AI is perceived by Moroccan managers. This study will focus on synthesizing previous research findings in the area.

To investigate managers' perceptions of Artificial Intelligence (AI) and its impact on decision-making, competitive advantage, and organizational performance, this study adopts a quantitative research approach. The primary data collection method is a structured questionnaire, which will be administered to 23 managers operating in various industries. This approach aims to capture diverse managerial perspectives on AI adoption and its influence on business processes to gain deeper insights into how AI is perceived and utilized within organizations. This targeted approach will allow us to assess the factors influencing AI adoption, the challenges faced by managers, and the extent to which AI impacts strategic decision-making and overall organizational performance.

To achieve this objective, the study begins with a Literature Review, which explores existing research on managers' perceptions of AI, emphasizing key factors influencing adoption and resistance. The methodology section outlines the research approach, detailing the qualitative method, sample selection, and data collection tools. The results section analyzes Moroccan managers' perceptions of AI, identifying both perceived benefits and barriers to adoption. The Discussion section interprets these findings in relation to existing literature, highlighting their

managerial implications. Finally, the Conclusion summarizes the key findings, explores their impact on businesses, and provides recommendations for effective AI adoption.

1. Literature Review

Several previous studies have examined managers' perceptions of AI, revealing varying attitudes and concerns. In the PwC (2018) study, managers surveyed indicated that AI could potentially automate up to 45% of activities in their companies, but it could also lead to the eliminating of some jobs. Managers also said it was essential to train employees to help them learn new skills related to AI.

The Brynjolfsson et al. (2018) study found that managers were aware of the potential of AI to improve productivity but tended to overestimate the short-term results. Managers also indicated that it was important to train employees to work with AI and to put policies in place to support workers affected by automation.

In the study by Sreejesh et al. (2019), the managers interviewed indicated that AI could improve the efficiency, accuracy, and quality of tasks. However, they also expressed concerns about data security, employment impacts, and skills required for future jobs.

The study by Sánchez et al. (2020) found that SME managers were aware of the potential of AI to improve their competitiveness but were often held back by a lack of technical knowledge and limited financial resources. Managers also indicated that it was important to put policies to encourage AI adoption and to promote collaboration between companies and universities to improve AI training.

Ko et al.'s (2019) study examined managers' perceptions of AI in the context of the manufacturing industry in South Korea. The results showed that managers were generally supportive of adopting AI to improve production efficiency and quality, but they were also concerned about the impacts on workers' employment and training.

The study by Song et al. (2020) examined managers' perceptions of AI in the context of talent management in China. The results showed that managers were aware of the potential of AI to improve the recruitment and candidate selection process, but were also concerned about the quality of the data and the suitability of the algorithms used.

The study by Thakur et al. (2021) examined managers' perceptions of AI in the context of risk management in banks in India. The results showed that managers were aware of the potential of AI to improve fraud detection and prevention, but were also concerned about data security and transparency of the algorithms used.

Foss and Saebi's (2018) study examined how managers perceive the opportunities and challenges of AI for business innovation. The results showed that managers were aware of the potential benefits of AI for innovation, such as creating new products and services, but were also aware of the challenges of integrating AI into their companies.

Yayla and Celik's (2020) study examined managers' perceptions of AI in the context of the construction industry in Turkey. The results showed that managers were generally aware of the potential benefits of AI to improve construction efficiency and quality, but were also concerned about high costs and lack of technical skills.

The study by Lu et al. (2020) examined managers' perceptions of AI in the context of the hotel industry in China. The results showed that managers were supported by adopting AI to improve customer experience and operations management, but still, they were also concerned about the impacts on employment and the quality of human interactions.

Ajay Agrawal, Joshua Gans, and Avi Goldfarb proposed in their book "Prediction Machines: The Simple Economics of Artificial Intelligence" that AI can enhance performance by reducing the prediction costs. They argue that AI can help improve decision quality by providing more accurate predictions, leading to cost savings and improvements in product and service quality.

Some theorists have suggested that AI can optimize processes and handle large amounts of data. For example, in their article "Artificial Intelligence and its application in business,". Mohanty et al. (2016) discuss how AI can be used to improve efficiency, productivity, and decision-making in various industries. Similarly, in "Artificial Intelligence in healthcare: past, present and future,". Wang and Wong (2019) argue that AI can aid in the analysis of large and complex medical data sets, leading to better patient outcomes.

Several theorists have discussed the potential of AI for cost reduction. For example, a study by Vial and colleagues (2021) found that AI can be used to optimize production processes and reduce manufacturing costs. Similarly, a survey by Malshe and colleagues (2020) suggested that AI can help reduce costs by improving supply chain management and reducing waste. Another study by Zhang and colleagues (2019) highlighted the potential of AI for reducing costs in healthcare by improving diagnostic accuracy and lowering medical errors.

The studies found that AI can assist in automating repetitive tasks and free up employees' time to focus on core value-added tasks. This can lead to increased job satisfaction and higher productivity, as well as improved customer satisfaction. For example, a study by McKinsey & Company found that using AI for customer service can lead to a 10-20% increase in customer satisfaction and a 20-25% increase in resolution times. Another study by Accenture found that

AI can help improve employee performance by reducing time spent on administrative tasks and increasing time spent on value-added work.

The studies highlight the importance of developing a deep understanding of managers' perceptions of AI in order to drive successful AI adoption in organizations. The findings indicate that managers need to be involved in the AI planning and implementation process to ensure the effective adoption and optimal use of AI. In addition, the studies suggest that organizations should implement training and skills development programs to help managers understand the benefits and challenges of AI and develop the skills needed to work with AI technologies.

In summary, the previous studies highlight managers' attitudes toward AI, concerns, drivers of adoption and emphasize the importance of actively involving managers in AI planning and implementation to ensure successful AI adoption in organizations.

2. Methodology

This qualitative study aims to understand financial managers' perceptions and utilization of artificial intelligence (AI) in their work. To achieve this objective, we have defined a target population of 23 financial managers working in different sectors of activity and companies of different sizes. We will use a non-probabilistic sampling method to select them. We will collect qualitative data using semi-structured individual interviews, which will be analyzed using thematic content analysis. The data collected will help us understand the advantages and limitations of using AI in finance, as well as the expectations of financial managers regarding the evolution of this technology in their field. We will ensure the confidentiality of the collected data and respect ethical standards in our research approach.The questionnaire questions were assessed individually and aggregately, which allowed the visualization of an aspect, allowing them to have a dimensional notion of managers' perception of AI.

The research also involved a qualitative analysis regarding the managers' experiences with AI, which through the expression of their opinion, referred to the positive and negative aspects of its adoption, which can be observed in the following results.

Our epistemological stance aligns with an interpretivist perspective, which acknowledges that reality is shaped by human experiences and social contexts. Rather than trying to quantify perceptions with rigid models, we aimed to explore and interpret the nuanced ways in which managers view AI and its role in their organizations.

We adopted an inductive reasoning process, allowing insights to emerge directly from the data rather than testing predefined hypotheses. By conducting semi-structured interviews, we

provided space for managers to share their thoughts freely, ensuring that their unique perspectives and concerns were captured. This approach is particularly valuable in understanding both the opportunities and challenges that AI presents in business settings. Through thematic analysis, we identified key patterns and trends, ultimately offering a context-driven perspective on AI adoption and its impact on managerial decision-making.

3. Results

3.1 Population and sample

The financial managers' population resulted in 23 contacted managers from different sectors. 65,2% of them are somewhat familiar with the AI concept and 26,1% are unfamiliar with the concept of AI. The graph below shows the results.

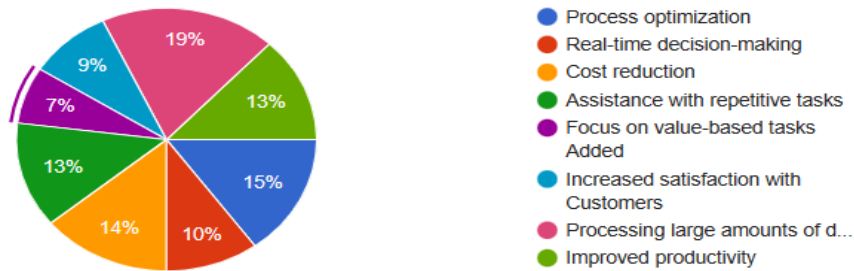**Figure N°1 : Degree of familiarity with the concept of AI**
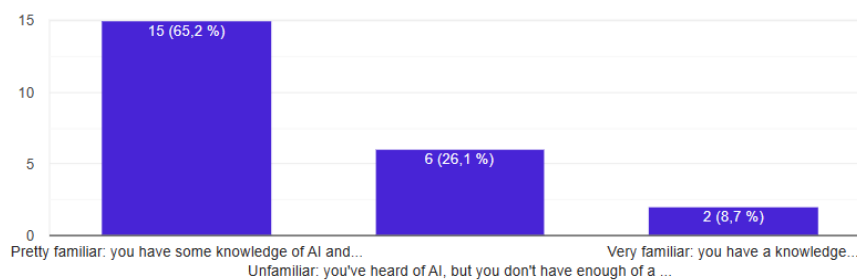
Source : Self-conducted Research

6 managers who say they are not familiar with the concept of AI attribute this problem to the lack of AI knowledge and sufficient expertise.

3.2 : Managers' perception

The data on the managers perception of AI indicate that they perceive it as a future essential item for management as it creates competitive advantages in nowadays. This can be seen with the large number of managers who agree with the fact that AI allows the treatment of large quantities of data rapidly (19%), process optimization (15%), and cost reduction (14%). Thus, the managers are aware of the potential benefits of using AI.

Figure N°2 : Benefits of AI

- ● Process optimization
- ● Real-time decision-making
- ● Cost reduction
- ● Assistance with repetitive tasks
- ● Focus on value-based tasks Added
- ● Increased satisfaction with Customers
- ● Processing large amounts of d...
- ● Improved productivity

Source : Self-conducted Research

While artificial intelligence (AI) offers many benefits for businesses, financial managers must also consider some drawbacks and disadvantages. One of the main challenges is the privacy and security risk of AI systems as it shown in the graph below (56,5%). 13 managers perceive AI as a means to contribute de job loss.

Figure N°3 : Disadvantages of AI
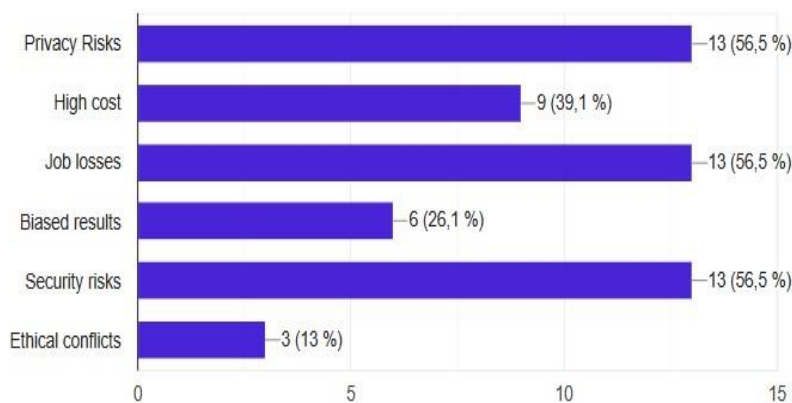
Source : Self-conducted Research

3.3 Fears and the adoption of AI

The questionnaire responses revealed a diverse range of perspectives on how fears related to AI influence the decision to adopt AI.

Some respondents believed that the potential benefits of AI outweighed any concerns about employment or other related issues. Therefore, fears did not play a significant role in their decision-making process.

"Fears related to AI do not influence our decision whether or not to adopt AI. We see the potential benefits of AI for our business outweighing concerns about the impact on employment or other similar issues."

However, other respondents highlighted that fears related to AI were an important factor in their decision.

"Fears related to AI are an important factor in our decision whether or not to adopt AI. We want to be sure that the impact on employment and other related issues are adequately taken into account before a decision is taken."

Additionally, some respondents mentioned that the decision to adopt AI or not was seen as depending on many factors.

"The decision to adopt AI or not will depend on many factors, including potential benefits to the business, costs and technical skills required, as well as ethical and social considerations."

While fears related to AI were seen as a major barrier to adoption by some respondents, others did not see them as a significant issue.

"Fears related to AI are a major barrier to AI adoption in our business. We have significant concerns about the potential impact on employment and other related issues that prevent us from adopting AI."

3.4 Decision-making and AI

The data provided suggests that a majority of managers, specifically 73,9% can trust AI systems for decision making purposes. This indicates a high level of confidence in the capabilities of AI technology to analyze data and provide insights that can inform decision-making processes.

On the other hand, 26.1% of managers cannot trust AI systems for decision-making. This may be due to various reasons such as a lack of understanding of how AI works, concerns about the reliability and accuracy of AI-generated insights, or a preference for more traditional decision-making methods.

Figure N°4 : Decision-making using the AI
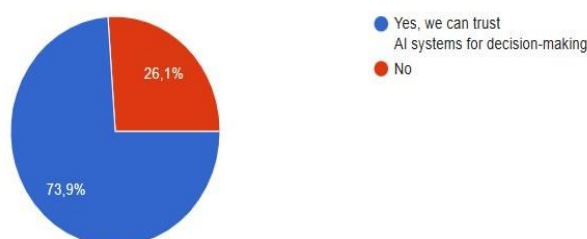
Source : Self-conducted Research

3.5 Performance and AI

Based on the results provided, it appears that the study has found a generally positive impact of AI on performance. The benefits of AI seem to be significant improvements in operational efficiency, productivity, quality, and customer experience, which can lead to increased revenues and a better competitive position.

"A positive impact on performance."

"Improve operational efficiency, reduce costs and provide a personalized and improved customer experience. This can lead to increased revenues and a better competitive position."

However, the study also suggests that the impact of AI may be limited to certain areas, and its effects may not be as complex in hard work functions as they are in organization and management functions. Additionally, some respondents suggest that while the impact of AI is positive and necessary, it may not be as satisfactory as expected.

"A positive impact but limited to certain areas"

Overall, it seems that AI has the potential to improve performance in various ways, particularly by improving efficiency and providing a better customer experience. However, there may be limitations to its impact depending on the specific context and function being considered.

"Speed and efficiency, optimization in time and money (cost)"

"Improve operational efficiency, reduce costs and provide a personalized and improved customer experience. This can lead to increased revenues and a better competitive position."

4. Discussion

Regarding the previous results, our study was designed to address the research community's demand for a more in-depth exploration of financial managers' perception of artificial intelligence in Morocco.

The data collected allowed us to understand more about the interaction of managers towards AI. indeed, its advantages and disadvantages influence the perception of managers and its integration within companies.

Our results specifically show that the development of AI in Morocco is still in its early stages, but it doesn't mean that managers do not use it in their functions, a lot of them are somehow familiar with the concept.Our respondents agree with the fact that AI creates competitive advantages (Sànchez et al., 2020), processing and treating large amounts of data (Mohanty et al., 2016; Wang et Wong., 2019). In addition, they recall that using AI will save on labor costs and increase efficiency (Vial et al., 2021). This finding is consistent with the literature stating

that implementing AI may allow more time for managers to work on their core value-added tasks and will assist them in repetitive tasks, also increasing customers satisfaction (Singh et al., 2021).

Our results corroborate that managers may be dealing with AI-induced changes, including job losses, privacy and security risks (Sancar et Özdemir., 2019; Brynjolfsson et Andrew McAfee., 2017). In fact, some of them do not implement AI systems in their companies because of high costs. AI systems can generate more resources and require significant investments whether in development and implementation, data acquisition, education and training and maintenance and upgrades. (Agrawal et al.,2018; Sherman., 2019; Darryl., 2019).

Our respondents believe that there is no fear that could influence or impact the decision to integrate AI systems. On the contrary, its benefits overwhelm its disadvantages (Lawrence, 2020). However, a lot of them believe that the fears will create significant issues in its integration (Bloomberg, 2021). Thus, some respondents argue with the fact that integrating AI systems depends on many factors as requiring technical skills, costs and ethical considerations (Vincent, 2020; Brynjolfsson, 2017).

The experts we interviewed confirm that we can build trust in AI systems in the decision-making process (Ratzesberger and Sawhney, 2018) while it can provide valuable insights. In fact, building trust with a risky tool (Shestakofsky, 2017) requires learning and adjustment. Therefore, AI success requires socialization with this technology (Makarius et al., 2020).

In addition, according to our managers, the potential of AI to enhance performance is positive and will affect the competitive position across various domains (Malhotra and Ghose., 2020); also, the AI will deliver more tailored and efficient customer experience and satisfaction (MIT Technology Review Insights, 2019; Lubbe and Hauser, 2019).

In conjunction with the increased need of speed and decision-making in real-time, our study reveals that the AI application can enable organizations to make fast and accurate decisions (Howell, 2017).

In the light of all this research and results, we recommend that all organizations should provide training and support, build an encouraging culture of innovation, promote the collaboration between human and AI technology and ensure their complementarity. By implementing these recommendations, organizations can develop their performance and leverage their competitive advantage.

Conclusion

As an essential tool in this conjuncture characterized by the evolution of information technologies, the algorithms of AI have emerged as powerful assets for organizations. The present study contributes to understand the managers' perception of AI in the Moroccan context by exploring their attitudes and concerns, which may have different cultural and economic factors that influence this perception.

The results of this study provide valuable insights into the managers' perception of AI in terms of its potential advantages while acknowledging the challenges that need to be addressed. It enhances our understanding on the positive impact of AI, such as decision-making processes, organizational performance and customer satisfaction.

Ultimately, integrating AI applications needs an effective strategy for fostering innovation, competitiveness and growth in the digital era.

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