

See discussions, stats, and author profiles for this publication at: <https://www.researchgate.net/publication/377202576>

Artificial intelligence in the financial function: a lever for development in the face of future challenges

Article · January 2024

QUOTES

3

READS

2,867

2 authors, including:



Ghizlane Barzi

Hassan I University

5 PUBLICATIONS 7 QUOTES

SEE PROFILE

Artificial intelligence in the financial function: a lever for development in the face of future challenges

BARZI Ghizlane^{1,*}, BAMOUSE Zineb¹

¹ ENCG Settat, Hassan Premier University, Morocco.

PAPERINFO

Paper History

Received: May 2023

Accepted August 2023

Keywords

Financial function

Chief Financial Officer

Artificial intelligence

Evolution

Performance

Summary

We currently live in an environment conducive to development, innovation, and change. Intensified competition, current crises, digitalization, economic, technological, and environmental developments, social transformations, and the dematerialization of information have led to a significant renovation in the financial activity of companies. Artificial intelligence is an essential component of innovation. Its integration into the financial function is a starting point for renovation and a radical change in companies. It presents itself as a lever for growth, a pioneer of performance, and a catalyst for development. Furthermore, the objective of our research is to present the importance of artificial intelligence in the evolution of the financial function in this highly complex, conflictual, and unstable contemporary environment. In this regard, we opted for the IMRAD (Introduction, Methods, Results, and Discussion) method to provide a clear overview of the use of artificial intelligence at the heart of the financial function. The results of this study highlighted artificial intelligence as a key factor in optimizing performance and ensuring continuous development.

Currently, we are living in an environment that is conducive to development, innovation and change. The intensification of competition, the current crises, digitalization, economic, technological and environmental developments, social transformations and the dematerialization of information have all led to a major overhaul in the financial activities of companies. Artificial intelligence is an essential component of innovation. Its integration into the finance function is the starting point for a radical overhaul and change in companies. It is a lever for growth, a pioneer of performance and a catalyst for development. Furthermore, the objective of our research is to present the importance of artificial intelligence in the evolution of the finance function in this highly complex, conflictual and unstable contemporary environment. In this respect, we have opted for the IMRAD method (Introduction, Methods, Results and Discussion) to provide a clear overview of the use of artificial intelligence at the heart of the financial function. The results of this study focused on artificial intelligence as a key factor in optimizing performance and ensuring continuous development.

*Corresponding author. Email: g.barzi@uhp.ac.ma

1.Introduction

Currently, the economic environment has undergone radical evolution and change in all its components. Innovation, economic evolution, technological progress, industrialization, and current crises have generated strategic changes in the financial function of each company. Indeed, these changes have accelerated the development of firms, especially at the financial level. As a result, the financial function is obliged to innovate in order to adapt to environmental changes.

Moreover, the finance function is at the heart of the challenges of each firm's transformation. It must go beyond the execution of its activities in a traditional way of production, financial information and management. However, it is obliged to equip itself with a flexible process, a flexible structure and an agile system adaptable to new transformations. Indeed, the current crises have highlighted the importance of adapting new, more developed and more efficient tools in the operation of companies. The integration of these practices represents a new milestone to be reached in the characteristics of the finance function.

Furthermore, innovation practices in the financial sector have become a trend and are at the heart of debates in the work of various researchers. Innovation in terms of the use of artificial intelligence is an obligation for companies in order to maintain their competitiveness and competitive advantage. Indeed, artificial intelligence contributes to the development of refined strategies which consequently allow the creation of an intelligent and developed company. Therefore, artificial intelligence presents itself as a fruit of innovation which allows to strengthen the activity of the company, ensure continuous development and increase performance.

Furthermore, the main objective of our study is to analyze how artificial intelligence as a revolutionary and innovative technology contributes to the development of the financial function of companies. In addition, to identify the importance and progress of the digitalization of the financial function in order to increase its performance and development. In addition, to present the importance of adopting digital transformations in companies in the face of future challenges and crises.

2.Artificial intelligence: a driver of innovation and competitiveness for businesses

Innovation is currently of major importance and occupies a prominent place in businesses. It represents a lever and a driver of change, development, and evolution with a high impact. At the heart of these innovation processes, technological advances in artificial intelligence are emerging as a driving force.

The concept of artificial intelligence is a concept that dates back several years. Since 1950, the idea of creating innovative systems began to emerge. Researchers have tried to develop machines and software capable of solving problems, facilitating missions and proposing rational solutions. Indeed, artificial intelligence involves the development of digital techniques aimed at reproducing the cognitive abilities of human beings, improving the productivity capacity of companies and generating new services and intelligent functionalities [1, 2, 3]. These technologies present valuable tools for firms to push the limits of creativity and efficiency.

Machine learning techniques are of paramount importance in innovative business initiatives and strategies. They foster the creation of a new culture and a robust and efficient system. This development phase sparks a surge of creativity, innovation, and performance.

The software and technologies available to companies today, specifically at the financial level, allow them to achieve an average optimal level and an average achievement of objectives.

Therefore, innovation in terms of the use of artificial intelligence techniques has become an indispensable process in the activity of financial administrations since it strengthens their capacity, competitiveness and competitive advantage. Indeed, innovation constitutes a crucial imperative for the growth and sustainability of financial systems since it presents new ways and sources of financing that can boost financial profitability and consequently increase performance [4].

3. Artificial Intelligence in Corporate Finance: An Innovative Revolution Towards Development

The arrival of the digital age, technological development, and artificial intelligence is a path for businesses toward a modern financial environment characterized by continuous growth and sustainable evolution. Indeed, financial administrations have moved beyond the traditional manual management of accounting and financial operations. They are now aware of the importance of using intelligent systems and innovative tools in their financial activities to increase the productivity, efficiency, and clarity of financial practices.

Moreover, researchers in the financial field are stimulating the use of innovative and technological tools in the activity of financial administrations in order to optimize and boost results. In the same context, the emergence of artificial intelligence in the financial environment dates back to the work of various pioneering researchers. Since 1943, the results of the studies "A Logical Calculus of Ideas Immanent in Nervous Activity" by McCulloch and Walter Pitts have shown the use of artificial neural models in the financial activities of companies [5]. Moreover, in 1987, William P. Tastla and Michael G. Hogg in their research "Neural Networks for Financial Forecasting" exploited the application of artificial intelligence in terms of the use of personalized neural networks in financial forecasting [6].

Furthermore, the developments brought about by artificial intelligence have changed the entire value chain of firms. Financial services are currently in a phase of transformation and rapid evolution thanks to the use of new intelligent processes. In this regard, these processes make it possible to promote the financial management of firms while optimizing the capacity of factor processing and calculations and data, analyzing reports and examining accounting, financial and tax operations [7].

Additionally, artificial intelligence strengthens financial analysis to be efficient, optimal, precise, and more targeted. It also contributes to decision-making among financial managers by quickly providing clear and accurate financial data and information.

4. The finance function in the era of artificial intelligence

Accelerating economic pace, technological development, and environmental changes have led to the evolution of the finance function, its characteristics, tools, and processes. These developments have created new and innovative uses for the finance function to strengthen its activity and meet new demands.

Indeed, the finance function plays a pioneering role in driving performance and allocating financial resources in the organization. It maintains relationships with all parts and organizational units of the company, as well as it operates simultaneously at the level of the management team. The latter must always be in exponential development so that it can offer a high-quality service to all kinds of customers, as well as play a pioneering role in the transformation towards a sustainable high-performance organization [8].

Furthermore, artificial intelligence has brought about a profound transformation in organizations by revolutionizing the role of the finance function and its responsibilities. Artificial intelligence tools have inspired new uses and dynamics, propelling the financial operations of administrations.

financials towards a developed horizon. The automation of repetitive tasks, the speed of production of financial information and the continuous verification of financial transactions have given the finance function an unparalleled capacity to analyze and process massive data from accounting, tax and financial operations.

5.Method

In this study, we conducted an in-depth literature search to better understand the impact and importance of artificial intelligence practices in the evolution of the financial function in companies in order to increase performance and ensure their sustainability. Indeed, our study is based on 20 scientific articles from different scientific platforms (Cairn, Elsevier, Google scholar, etc.). The choice of articles for this research is not random, however, it essentially depends on the inclusion and exclusion criteria in order to improve the scientific information presented. In addition, the analysis of our results is a scientific reflection and an interpretation of previous research by different researchers.

6.Result

The evolution of the finance function in a smart environment is a necessity for performance. The finance function is the nerve center of organizations. Its evolution is a crucial step in adapting to new requirements and meeting new needs. Currently, the finance function goes far beyond traditional accounting and management operations; however, it is increasingly involved in decision-making, the development of financial information systems, and digital transformation, including the use of innovative systems to meet their objectives.

Indeed, technological evolution has strengthened the use of digital tools in financial administrations. In this regard, financial directors must reorganize and prepare to modify the exploitation of these technological resources while integrating artificial intelligence systems in order to comply with the conditions of an intelligent environment [9]. In addition, with the development and technological innovation, as well as the continuous evolution of the business environment and the increase in competition are the reasons why organizations put pressure and responsibility on the financial function [10].

Moreover, the evolution of the financial function is a path towards a radical transformation and a significant change in the company's financial system, which promotes value creation and competitive advantage. Indeed, the financial experience of financial directors strengthens the use of technological tools within the company [11]. In this regard, the integration of intelligent systems is a real lever for the development and evolution of the firm's functions [12, 13, 14].

Furthermore, intelligent automation of the finance function is an imperative for development. Indeed, the finance function has undergone a level of transformation and a successive wave of evolution. The financial, health, and economic crises are notably a notable catalyst for the development of the finance function in companies. They have implanted the innovative spirit among managers for the use of advanced technological tools to facilitate the execution of the organization's financial operations and consequently ensure profitability and increase performance.

Indeed, the automation of financial information is a crucial process that particularly influences operations related to the financial function [15]. It essentially consists of automating daily and repetitive manual operations related to financial management. Moreover, the automation of traditional operations of the financial function is a guarantee of performance that modifies all its components and implies rethinking their operation [16].

Furthermore, the role of the finance function is to collect, execute, analyze, combine and consolidate financial and accounting data [17]. Technological development challenges the execution of operations for financial directors. Therefore, their automation is a real lever to facilitate financial operations, reduce data processing costs, rapid processing of financial data volumes and efficient risk forecasting.

Furthermore, artificial intelligence in the financial function presents itself as a lever for performance and profitability. In order to guarantee sustainability, improving profitability and increasing performance are major challenges for financial directors. In this regard, the latter must play the role of energetic actors in the development of artificial intelligence tools at the heart of the financial function. Indeed, the integration of artificial intelligence increasingly allows the modernization of financial and accounting management processes while making them efficient and profitable. In addition, artificial intelligence leads to the optimization of production, the improvement of product quality and especially the efficiency of their production, the development of a dynamic service and efficient management and consequently guarantees continuous performance [18].

Artificial intelligence in the financial function is an opportunity for a change from a traditional and classic function to a modern, developed and intelligent activity which contributes to the development of companies [19]. Moreover, in a flexible environment, the use of artificial intelligence systems is a crucial step for companies to execute their financial operations in a fast, flexible and efficient manner, as well as they provide several resources to financial departments [20].

Indeed, in order to boost performance, specifically at the financial level, companies must increasingly move towards the use of artificial intelligence services [21]. Moreover, the use of intelligent tools impacts the performance of the company [12, 13, 22]. According to the research results of Kiel et al. In 2017, intelligent systems provide various benefits to companies. On the one hand, cost reduction through production optimization, which contributes to the improvement of planning and inventory management. On the other hand, improving profitability, effective cost management and optimization of financial operations contribute to increasing profit margins and consequently boosting the performance and profitability of the company.

In addition, artificial intelligence is a key factor for the financial function in the face of future challenges. In a globalized world characterized by a variation of challenges, artificial intelligence comes as a key player to strengthen the activity of companies. Indeed, advances in artificial intelligence are an essential element for firms since they allow them to strengthen financial activity and adapt to variations in the environment [23]. These tools provide added value, as well as strengthening the competitive advantage of organizations by seeking innovative financing avenues, which helps boost their performance and ensure their sustainability [23].

The integration of artificial intelligence into corporate risk management is a key factor in strengthening their resilience to future challenges. Corporate resilience depends in particular on mastering risk management by adapting preventive strategies and measures to reduce the probability of risk occurrence [24]. Therefore, artificial intelligence algorithms are a valuable and effective tool for predicting the probability of occurrence of hazards and future risks, as well as their degree of severity.

Furthermore, CFOs are now aware of the importance of innovation in terms of the use of intelligent systems in the finance function. These systems can be exploited at several levels. First of all, financial forecasting. Analyzing financial data using artificial intelligence tools is an important process in order to implement detailed, accurate and precise financial forecasts. This facilitates decision-making for CFOs.

make informed decisions on all financial operations. Then, risk predictions, current crises have shown the usefulness of the use of artificial intelligence by financial directors to anticipate financial risks, operational risks, security risks and risks of regulatory non-compliance. This tool quickly detects all types of risks and proposes effective solutions. Then, information security, monitoring financial data is an issue for financial directors. Artificial intelligence ensures the protection of financial information, the analysis of potential system vulnerabilities and especially detects phishing attempts. Finally, optimization of expenses, innovative and intelligent management helps to identify operations where costs can be minimized. Consequently, optimize expenses and boost performance.

7. Discussion

The evolution of the finance function reflects the development of the company's financial system's capabilities to respond to its environment according to its ultimate objectives. The growth and development of the finance function is a challenge for CFOs to strengthen business activity in the face of current crises. Indeed, the results of our study emphasized the role of the finance function in the technological development of the financial system. This refers to the idea that CFOs are more involved in the modernization of the finance function through the integration of innovation practices into their activities. Their main objective is to improve the efficiency of the financial system in a rapidly changing environment.

Furthermore, the automation of the financial function impacts all components of the company. It makes it increasingly flexible, agile, transparent, and cost-effective. In addition, it contributes to improving budget planning, reconciling financial data, and developing relevant analytical tools.

Furthermore, current innovation in the finance function depends on the use of artificial intelligence by financial directors. Artificial intelligence is a performance pioneer because it facilitates the execution of financial operations, detects risks and problems, and, above all, offers innovative solutions. Intelligent technologies are used to facilitate the processing of financial and accounting transactions, optimize production, develop rational and effective strategies, and ensure financial stability.

8. Conclusion

Artificial intelligence is proving to be a key and essential player in business innovation practices. Its disruptive potential, its advanced characteristics, its ability to respond quickly to needs, and its ability to analyze complex data and extract valuable information make it a major force that promotes creativity and efficiency. Integrating artificial intelligence algorithms into the business innovation process helps generate new perspectives and strengthen firms' ability to innovate significantly.

Furthermore, CFOs who drive performance cannot overlook the importance of innovation in the finance function. The latter is an asset that promotes and strengthens their activities in the face of economic, financial, and environmental challenges. Moreover, innovative and intelligent management among CFOs represents a window towards continuous evolution for the finance function. Indeed, the results of our study showed that the integration of artificial intelligence provides significant changes at the level of the financial system and generates a desire to modernize financial activity. This digital evolution constitutes a significant revolution in the finance function of companies that allows them to reduce costs, anticipate risks, and optimize performance.

In an environment characterized by exponential development, artificial intelligence occupies a central place for financial administrations. The implementation of intelligent systems with

companies refers to the creative culture of financial managers. These systems profoundly change the execution of financial operations in order to improve their profitability and performance.

Bibliographies

- [1] A. Benko, CS Lányi, "History of artificial intelligence", In Encyclopedia of Information Science and Technology, Second Edition pp. 1759-1762, 2009.
- [2] M. Haenlein, A. Kaplan, "A brief history of artificial intelligence: On the past, present, and future of artificial intelligence", California management review, Vol. 61, pp.5-14, 2019.
- [3] P. McCorduck, M. Minsky, OG Selfridge, HA Simon, "History of artificial intelligence". In IJCAI, pp. 951-954, 1977.
- [4] N. Badrane, and Z. Bamousse, "Innovation at the heart of financing choices: a vector of change transformer towards business performance in Morocco," in press.
- [5] McCulloch, S. Warren, Walter Pitts. "A logical calculus of the ideas immanent in nervous activity." The bulletin of mathematical biophysics, Vol. 5, pp. 115-133, 1943.
- [6] Gately, Edward. Neural networks for financial forecasting. John Wiley & Sons, Inc., 1995.
- [7] Y. Tang, "Corporate finance management in the age of ARTIFICIAL intelligence." Development, Vol.3, pp. 141-146, 2021.
- [8] L. Zoni, F. Pippo, "CFO and finance function: what matters in value creation", Journal of Accounting & Organizational Change, Vol. 13, p. 216-238, 2017.
- [9] F. Plaschke, I. Seth, R. Whiteman, Bots, algorithms, and the future of the finance function." Risk management, Vol. 20, pp. 20, 2018.
- [10] H. Chang, CD Ittner, MT Paz, "The multiple roles of the finance organization: Determinants, effectiveness, and the moderating influence of information system integration", Journal of Management Accounting Research, Vol. 26, pp.1-32, 2014.
- [11] C. Matt, T. Hess, A. Benlian, "Digital transformation strategies", Business & information systems engineering Vol. 57 pp. 339-343, 2015.
- [12] SL Wamba-Taguimdje, S. Fosso Wamba, JR Kala Kamdjoug, CE Tchatchouang Wanko, "Influence of artificial intelligence (AI) on firm performance: the business value of AI-based transformation projects", Business Process Management Journal, Vol. 26, pp. 1893-1924, 2020.
- [13] CJ Kelly, A. Karthikesalingam, M. Suleyman, G. Corrado, D. King, "Key challenges for delivering clinical impact with artificial intelligence", BMC medicine, 17 pp. 1-9, 2019.
- [14] VL Rubin, "On deception and deception detection: Content analysis of computer-mediated statements beliefs", Proceedings of the American Society for Information Science and Technology, Vol.47, pp.1-10, 2010.
- [15] X, Y. Lu, S. Shladover, "Integrated ACC and CACC development for heavy-duty truck partial automation", American control conference (ACC), IEEE, 2017.
- [16] C. Lambert, S. Sponem, "Roles, authority and involvement of the management accounting function: a multiple case-study perspective", European Accounting Review, Vol. 21, pp. 565-589, 2012.
- [17] SA Harrast, "Robotic process automation in accounting systems", Journal of Corporate Accounting & Finance, Vol. 31, pp. 209-213, 2020.
- [18] D. Kiel, JM Müller, C. Arnold, KI Voigt, "Sustainable industrial value creation: Benefits and challenges of industry 4.0", International journal of innovation management, Vol. 21, (2017)
- [19] D. Horváth, RZ Szabó, "Driving forces and barriers of Industry 4.0: Do multinational and small and medium-sized companies have equal opportunities?", Technological forecasting and social change Vol. 146, pp. 119-132, 2019.
- [20] DJ Teece, G. Pisano, A. Shuen, "Dynamic capabilities and strategic management." Strategic management journal, Vol. 18, p. 509-533, 1997.
- [21] C. Crews, "What Machine Learning Can Learn from Foresight: A Human-Centered Approach: For machine learning-based forecast efforts to succeed, they must embrace lessons from corporate foresight to address human and organizational challenges", Research-Technology Management, Vol. 62, pp. 30-33, 2019.
- [22] VL Rubin, "On deception and deception detection: Content analysis of computer-mediated statements beliefs", Proceedings of the American Society for Information Science and Technology Vol. 47, pp. 1-10, (2010).
- [23] ME Porter, JE Heppelmann, "How smart, connected products are transforming competition." Harvard business review, Vol. 92, pp. 64-88, 2014
- [24] G. Barzi, Z. Bamousse, "Resilience at the heart of the financial function of companies: a lever for sustainability against the effects of crises in Morocco - Case of Covid-19", in the economic and management review, Vol. 1, 2023