International Journal of Innovative Research and Scientific Studies, 8(4) 2025, pages: 2405-2415

IJIRSS
International Journal of Innovative Research & Scientific Studies

ISSN: 2617-6548

URL: www.ijirss.com

Financial management in university professors and artificial intelligence as a tool for economic improvement

Manco Chávez José Antonio[1*], Daniel Enrique Terrones Rojas[2], Bringas-Salvador Jorge Luis[3], Aranda Dextre Carmen Cristina[4], Carlos Aten Antonio Castro Josan[5]

[1,2,5]*Universidad Autónoma del Perú, Lima. Perú.*
[3]*Universidad Nacional Tecnológica de Lima Sur, Lima. Perú.*
[4]*Universidad Nacional Mayor de San Marcos (UNMSM), Lima. Perú.*

Corresponding author: Manco Chávez José Antonio (*Email: jmanco15@autonoma.edu.pe*)

Abstract

In today's era of rapid technological advancement, everything changes transcendentally due to informatics in the development of AI. This is a basic non-experimental research, with a transactional or correlational design, descriptive, with a quantitative approach, generally using statistical analysis such as Spearman's Rho correlation coefficient. The instruments were validated and passed the process of expert judgment intervention using Cronbach's alpha statistic; the reliability coefficient for the first variable, Personal Finance, was 0.836, and for the second variable, Artificial Intelligence as a tool for economic improvement, the alpha was 0.986. Results revealed a weak positive correlation (Spearman's Rho=0.222) between the personal finances of university professors and the perception of artificial intelligence as a tool for economic improvement, based on a survey of 46 university professors. However, the level of statistical significance (p=0.138) exceeds the standard threshold of 0.05, indicating that the relationship is not statistically significant. This may be attributed to limited familiarity or usage of AI tools in the personal financial practices of the surveyed educators. In conclusion, AI offers great potential to positively influence the personal finances of university professors by providing tools that simplify and optimize financial management. Although its direct impact may currently be limited, the advancement of these technologies promises to facilitate more informed and effective financial decisions.

Keywords: Artificial intelligence, Economic improvement, Finance and AI, Finance, Innovative professors.

DOI: 10.53894/ijirss.v8i4.8403
Funding: This study received no specific financial support.
History: Received: 27 May 2025 / **Revised:** 1 July 2025 / **Accepted:** 3 July 2025 / **Published:** 8 July 2025

Competing Interests: The authors declare that they have no competing interests.
Authors' Contributions: All authors contributed equally to the conception and design of the study. All authors have read and agreed to the published version of the manuscript.
Transparency: The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.
Publisher: Innovative Research Publishing

1. Introduction

Personal finances have taken a key role in making decisions about people's money, whether it is an expense or an investment. Therefore, it is essential that individuals consider their resource decisions and the impact they may have on their quality of life [1]. This issue involves all individuals, including university professors, those who usually face specific challenges and characteristics, due to regular income, relative job stability, and access to certain benefits inherent to the education sector [2]. Likewise, artificial intelligence has established itself as a transforming agent that impacts various sectors, one of which is financial management, which allows for resource optimization, participation in economic stability, decision-making, and helps to become a competitive advantage for university professors [3].

The problematic reality affecting university professors is that they often face challenges in their career path, due to the increasing pressure of balancing academic responsibilities, research, and the need to generate additional income. Many educators find it difficult to manage their financial resources effectively. In this context, artificial intelligence emerges as a promising tool that can facilitate financial decision-making and optimize time management. By integrating artificial intelligence-based solutions, professors can access platforms that analyze their expenses, propose savings strategies, and offer personalized recommendations to maximize their income. Additionally, these technologies can help identify professional development opportunities, such as online courses or consultancies, that allow them to diversify their sources of income. Combining sound financial education with the analytical capabilities of artificial intelligence not only boosts the financial stability of professors but also enriches the quality of the education they provide. This integrated approach benefits educators and contributes to the development of more sustainable institutions and the overall enhancement of the academic landscape. As artificial intelligence continues to evolve, its application in the personal financial management of university professors emerges as an area of significant potential and relevance.

At the international level, the World Bank Group [4] has emphasized the importance of personal finance within the educational context, highlighting that university professors, like other professionals, face significant challenges in managing their financial resources [5]. The institution has recognized that enhancing financial literacy is essential for empowering individuals at various stages of life, including educators [6]. Financial education not only supports professors in managing their income and expenses, but it may also positively influence the quality of teaching they deliver [7]. Adequate training in personal finance can lead to greater economic stability and, consequently, improvements in overall well-being and professional performance [8]. Moreover, the World Bank has implemented strategies to strengthen education systems and improve learning outcomes, which involve investing in teacher development and fostering an environment that encourages their economic and professional growth [4].

In addition, the United Nations Educational, Scientific and Cultural Organization [9] emphasizes the importance of financial education as a key tool to improve consumer welfare, especially in the context of increasing access to digital financial services [10]. According to their research, for individuals to fully benefit from this access, they need the skills and knowledge to make informed and responsible financial decisions [11]. This is critical to mitigate over-indebtedness or fraud, so financial education interventions must directly address these risks faced by consumers and work in conjunction with appropriate regulations to foster a more inclusive and responsible financial sector [1].

On the other hand, the Organization for Economic Co-operation and Development [12] emphasizes the role of artificial intelligence as a catalyst for economic growth, particularly through its responsible adoption in alignment with democratic values and human rights [13]. The OECD principles on trustworthy AI highlight the technology's potential to enhance efficiency and productivity across various sectors, including finance, education, and public services [14]. Furthermore, the organization recommends policies that boost investment in AI research and development, as well as training initiatives so that the workforce can adapt to technological changes and take advantage of new job opportunities created by AI [15].

Similarly, the Global Partnership on Artificial Intelligence - GPAI [16] identifies AI as a key driver of economic improvement by fostering innovation and boosting productivity across multiple sectors. In collaboration with the OECD, this institution promotes responsible AI approaches that encompass data governance, innovation, commercialization, and the future of work [17]. Its approach promotes the adoption of AI in economic development, ensuring that these technologies ethically and sustainably benefit both society and the global economy [18]. Mainly, international efforts are being coordinated to explore how AI can support the economies of both developing and developed countries through inclusive and equitable applications aimed at maximizing economic impact [19]. Through its working groups and the participation of global experts, it develops recommendations and tools for governments and businesses to implement AI in a way that stimulates economic growth without neglecting the rights and safety of workers and citizens [20].

At the national level, Ccama Delgado and Diaz Rodriguez [7] in their study on financial education and personal finance, it was concluded that it is essential to consider the relationship between financial knowledge and socioeconomic status, since individuals with higher incomes tend to demonstrate greater financial mastery, which directly influences their decision-making, saving behavior, resource optimization, and overall financial awareness [21]. Currently, financial education is understood as the process through which individuals acquire the knowledge and skills necessary to manage their financial resources effectively [22]. This includes learning about topics such as investment, budgeting, debt management, and the use of financial products [23]. The goal of financial education is not only to improve the understanding of these concepts but also to empower individuals to make informed decisions, avoid unnecessary risks, and engage in long-term financial planning [24].

Similarly, in the study conducted by Pérez Cajo [25] the findings indicate that personal finance among university professors refers to the management of economic resources that these professionals carry out to cover their needs and achieve financial stability [26]. Often, university professors face specific financial challenges, such as limited salaries compared to the high level of education they possess, and additional expenses associated with continuing education and the

acquisition of academic resources [27]. Planning and knowledge of financial products, such as savings accounts or investment funds, can provide individuals with greater economic security and improve their quality of life. Initiatives that promote financial education among professionals not only contribute to their personal well-being but also have a positive effect on their work performance and the example they can set for their students [28] and [29].

From the perspective of Ledesma Vallejos [30] artificial intelligence is a powerful tool for economic improvement, as it optimizes processes, reduces costs, and increases efficiency in sectors such as industry, financial services, health, data volumes, and making accurate predictions, which drives innovation and competitiveness in companies [31]. By improving productivity, artificial intelligence contributes to sustainable economic growth and facilitates the development of new business models, especially in emerging markets [32]. Similarly, AI promotes knowledge in finance through accessible digital solutions, allowing more people to access banking and financial services [10].

In addition, Sánchez-Caguana, et al. [33] consider that artificial intelligence facilitates financial inclusion, especially in emerging economies, by enabling people without access to traditional banking services to utilize digital tools for savings, investment, and microcredit [34]. This generates a positive impact on the economy by integrating a greater number of people into the formal financial system [25]. Therefore, it is crucial that government policies accompany the development of artificial intelligence, encouraging training and responsible adoption of this technology so that its benefits are distributed equitably [24].

Then, we can establish the following general objective: to determine the relationship between personal finances among university professors and artificial intelligence as a tool for economic improvement.

This research is justified by the urgent need to address the financial challenges faced by educators within a constantly evolving academic context. Many university professors work under employment conditions that often involve variable income and a lack of economic stability, which can negatively impact their personal and professional well-being. By exploring the use of artificial intelligence in personal finance management, a pathway is opened for innovative solutions that support financial planning and optimize available resources. This enables a deeper analysis of individual finances, empowering educators to make more informed and strategic decisions.

Developing the theoretical framework, according to [2], personal finance is the set of decisions and strategies that a person makes to manage their money efficiently, achieve their economic goals, and ensure their well-being. They involve savings, investment in assets to grow capital, and debt management [35]. In addition, they include taking out insurance to protect against unforeseen events, planning for retirement, and proper tax management. Personal finance seeks to optimize the use of available resources and ensure long-term financial stability [36].

Regarding the development of dimensions of personal finance, the contributions of Singht, et al. [37] are considered. They assess the budget and expense control dimensions, which are fundamental tools in financial management, both at the personal and business levels. A budget is a detailed plan that establishes the expected income and expenses for a given period, allowing for an efficient allocation of resources [38]. Moreover, it involves tracking actual expenses against the budgeted amounts to identify deviations and implement corrective actions. All these practices help to maintain financial stability, prevent economic crises, and optimize the use of available resources [6].

As Mejía [39] points out that the debt elimination dimension is a key process for recovering financial stability and improving economic health. It consists of reducing or settling outstanding financial commitments, which can be achieved through various strategies. This allows regaining control of personal finances and avoiding insolvency situations. In addition, consolidating debts or negotiating deadlines with creditors are viable alternatives [40].

On the other Tete, et al. [41] state that the emergency fund is a reserve of money intended to cover unforeseen or urgent financial situations, such as health problems, accidents, vehicle repairs, or loss of employment. The general recommendation is to save between three and six months of essential expenses to ensure economic stability during difficult times [42]. This fund should be accessible but not easy to use to avoid unnecessary depletion. Having an emergency fund provides peace of mind and helps avoid indebtedness in crisis situations; it is also a key tool for maintaining financial control and reducing stress during difficult times [43].

Regarding the investment for the future dimension, Gómez Rodríguez, et al. [44] declare that it is a key strategy to ensure long-term financial stability. It involves allocating resources today to instruments that generate returns over time, such as stocks, bonds, investment funds, or real estate. According to Kalinin, et al. [45] investing enables individuals to take advantage of market growth and the accumulation of compound interest, which can generate significant wealth. It is essential to diversify investments to mitigate risks and adapt to different time horizons and financial goals. In addition, planning and investing in a disciplined manner help to achieve long-term goals, such as retirement or children's education [46].

Each dimension is fundamental for financial management aimed at university professors. Proper budgeting and expense control allow you to manage your income efficiently, while eliminating debt and building an emergency fund provides security against unforeseen events. In addition, investing in the future ensures long-term stability, especially in professions where income may be more variable or limited. These practices help professors to maintain financial balance and ensure their economic well-being [47] and [48].

On the other hand, Gil [49] mentions that artificial intelligence is the key to global economic transformation, thanks to its ability to boost efficiency, innovation, and productivity in various sectors. In the financial sector, it analyzes large volumes of data to detect fraud, assess risks, and personalize services, which increases trust and operational efficiency [50]. AI promotes the creation of new business models and fosters technological innovation, transforming economies toward sustainability and global competitiveness. However, its implementation requires investment in infrastructure, training, and ethical regulation to ensure an equitable and sustainable impact [21].

Regarding the development of the dimensions of artificial intelligence as an economic improvement, the contributions of Sánchez-Caguana, et al. [33] were considered. They establish six relevant dimensions, where the first is accounting accuracy, which facilitates better decision-making based on reliable data, optimizes tax planning, and improves financial transparency, thereby strengthening the confidence of investors and business partners [51].

Artificial Intelligence systems can process and analyze large volumes of accounting data in real time, identifying errors, anomalies, and fraud patterns faster than traditional methods, and automate repetitive tasks such as bank reconciliation and transaction categorization, reducing the risk of human error and increasing efficiency [52].

Similarly, Vicedo [53] notes that minimizing human error supports the automation of repetitive and error-prone tasks, such as data entry, logistics management, or medical diagnostics. AI systems monitor processes in real time, detecting anomalies before they become serious issues and preventing mistakes in complex calculations and predictions, thereby improving accuracy. Furthermore, AI-based training enables workers to acquire more precise skills, optimizing outcomes and reducing costs associated with human errors [54].

On the other hand, as Appian [55] states that optimizing operational efficiency through AI drives economic improvement by reducing operating costs through process automation and more effective resource utilization, thereby enabling companies to increase their profit margins. Artificial intelligence reduces downtime by predicting failures and efficiently scheduling maintenance. It also enhances supply chain management and transportation routes, resulting in lower expenses [47]. These efficiencies lead to increased productivity, allowing companies to reinvest in innovation and development, generate employment, and promote sustainable and competitive economic growth [56].

Riedel [57] also notes that recurring tasks performed using AI are fast, accurate, and have a lower cost, and help to process invoices and manage inventories automatically, reducing human errors. The use of automated accounting systems powered by AI has proven to be an efficient strategy to decrease operating costs [58]. These tools increase accuracy in financial records and optimize accounting processes, allowing for more efficient management of time and available resources [40] and [54].

Similarly, although artificial intelligence offers multiple advantages in accounting, it also faces obstacles and limitations [59]. One of the main challenges is the need for high-quality data to train AI systems, as errors or inconsistencies in the data can generate inaccurate results. In addition, complex accounting tasks that require professional judgment or regulatory interpretation are still beyond the scope of AI [60]. Lack of specific regulations and ethical concerns regarding data privacy and security also pose barriers. Additionally, resistance to change among professionals and the initial costs of implementation limit its adoption in some organizations [61] and [62].

On the other hand, regarding the challenges of security and privacy in AI, [63] notes that AI systems often rely on large volumes of data to train models and improve their accuracy, which can expose personal and confidential information. Without adequate safeguards, this data may be vulnerable to cyberattacks, such as unauthorized access or data breaches [64]. Another risk involves the manipulation of AI systems by malicious actors for harmful purposes, such as fraud or propaganda. Therefore, it is essential to implement ethical regulations, model transparency, and advanced security technologies to mitigate these risks [65].

Artificial intelligence is positioned as a key tool for economic improvement by optimizing operational efficiency, fostering innovation, and transforming sectors such as industry, finance, healthcare, and agriculture. Its ability to automate processes, personalize services, and maximize resources drives productivity and global competitiveness. However, its adoption poses significant challenges in terms of security and privacy, requiring ethical regulation and safeguards. By balancing these benefits and risks, AI can contribute to sustainable development and the creation of a more efficient, innovative, and inclusive economic ecosystem [66].

2. Methodology

This is non-experimental basic research, with a transactional or correlational design, descriptive, with a quantitative approach that seeks to measure the relationship between two or more variables without intervention or experimental manipulation, mainly using statistical analysis such as Spearman's Rho correlation coefficient. The instruments were validated and passed the process of expert judgment intervention on the variables, dimensions, and questions corresponding to the survey. The validation was made through Cronbach's Alpha statistics, where the Alpha obtained for the first variable, Personal Finance, was 0.836, and for the second variable, Artificial Intelligence as a tool for economic improvement, was 0.986, indicating the analysis of its internal consistency. Likewise, the surveyed population of professors was 50, corresponding to the Department of General Studies, with 46 professionals responding to the survey. This allowed for describing contributions determined by the relationship between both variables and their respective dimensions, which strengthened the research in addressing the general and specific problems, objectives, and hypotheses.

Table 1.
Correlations between Personal Finance in University Professors and Artificial Intelligence as a tool for Economic Improvement.

			Personal finances of university professors	Artificial intelligence as a tool for economic improvement
Spearman's Rho	Personal finances of university professors	Correlation coefficient	1.000	0.222
		Sig. (2-tailed)		0.138
		N	46	46
	Artificial intelligence as a tool for economic improvement	Correlation coefficient	0.222	1.000
		Sig. (2-tailed)	0.138	
		N	46	46

3. Results

The analysis indicates a weak positive correlation (Spearman's Rho = 0.222) between university professors' personal finances and their perception of artificial intelligence as a tool for economic improvement, based on a survey of 46 university professors. However, the level of statistical significance (p = 0.138) exceeds the standard threshold of 0.05, suggesting that the relationship is not statistically significant, as many educators have little to no practical experience or use of AI in their daily lives due to its novelty and recent integration into society. This implies that, although there appears to be a slight association, it cannot be conclusively stated that the use of artificial intelligence directly correlates with improvements in personal finances, as previously mentioned. The sample size may limit the ability to detect a clearer relationship, but this research may contribute early insights into the growing body of knowledge regarding AI in personal finance, highlighting its potential to enhance individual economic well-being and financial systems. It remains to be seen how this tool will be integrated into society and into personal and collective economic systems.

Table 2.
Personal finances in university professors.

		Frequency	Percentage	Valid percentage	Cumulative percentage
Valid	Low level	14	30.4	30.4	30.4
	Medium level	20	43.5	43.5	73.9
	High level	12	26.1	26.1	100.0
	Total	46	100.0	100.0	

The descriptive analysis indicates that, in a sample of 46 university professors, 43.5% report a medium level of personal finance, representing the largest group. Approximately 30.4% have a low level, while 26.1% reach a high level, which is the smallest group. Cumulatively, 73.9% of professors are at low or medium levels, suggesting that most face significant financial constraints or possess moderate financial stability. Only a minority, less than a third, attain a high level of personal finances. This situation reflects an unequal distribution, where intermediate and low levels predominate, potentially indicating structural economic challenges or limited opportunities to improve financial conditions within this professional sector, possibly due to a lack of economic culture despite their professional status. The cumulative results further suggest that a substantial proportion of university professors exhibit a need for improvement in their financial well-being.

Table 3.
Artificial intelligence as a tool for economic improvement.

		Frequency	Percentage	Valid percentage	Cumulative percentage
Valid	Low level	23	50.0	50.0	50.0
	Medium level	9	19.6	19.6	69.6
	High level	14	30.4	30.4	100.0
	Total	46	100.0	100.0	

The descriptive analysis indicates that, out of 46 participants, half (50.0%) perceive that artificial intelligence has a low impact as a tool for economic improvement. This perception is primarily because many of the professors do not use this technology, representing the largest group. A total of 19.6% assess its influence at a medium level, while 30.4% consider its impact to be high, with a smaller group involved in AI's influence on their financial lives. Cumulatively, 69.6% of respondents rate the influence of artificial intelligence as low or medium, reflecting some limitations in its assessment as an effective economic solution. However, almost a third (30.4%) perceive a high level of usefulness, suggesting that a segment recognizes its significant potential. These results underscore a division of perceptions, possibly influenced by a lack of access, knowledge, or confidence in the applications of artificial intelligence in the economic sphere.

Table 4.
Cross-tabulation between University Professors' Personal Finances and the Perceived Impact of Artificial Intelligence as a tool for Economic Improvement.

		Artificial intelligence as a tool for economic improvement			
		Low level	**Medium level**	**High level**	**Total**
Personal finance in university professors	Low level	7.0	2.7	4.3	14,0
		39.1%	11.1%	28.6%	30,4%
	Medium level	10.0	3.9	6.1	20,0
		43.5%	66.7%	28.6	43,5%
	High level	6.0	2.3	3.7	12,0
		17.4%	22.2%	42.9%	26,1%
Total		23,0	9.0	14.0	46.0
		100,0%	100.0%	100.0%	100.0%

The analysis of the cross-tabulation between university professors' personal finances and the use of artificial intelligence as a tool for economic improvement reveals interesting associations between personal finances and the use of AI tools in their personal economy. At the low level of personal finance, 39.1% of the professors show a low impact of artificial intelligence due to the low use of it, while only 28.6% consider its impact to be high. At the medium level of finance, 43.5% of professors perceive a low impact, but 66.7% consider its impact to be medium. At the high level of finance, 42.9% of professionals identify a high impact of artificial intelligence, suggesting that this group perceives greater economic usefulness of these tools. In general, professors with better financial situations tend to value the impact of artificial intelligence more positively, suggesting a possible relationship between economic stability and technological perception.

Table 5.
Personal Finances in University Professors and the Dimensions of Variable Artificial Intelligence as a Tool for Economic Improvement.

		Personal Finances in University Professors	**Accounting Accuracy**	**Human Error Control**	**Optimizing Operational Efficiency with AI**	**Recurring tasks using AI**	**Obstacles and Limitations of AI in Accounting**	**Security and Privacy challenges in AI**
Spearman's Rho	Personal Finances in University Professors	1.000	0.321*	0.270	0.148	0.190	0.138	0.158
			0.030	0.069	0.328	0.228	0.360	0.295
		46	46	46	46	42	46	46
	Accounting Accuracy	0.321*	1.000	0.805**	0.792**	0.634**	0.742**	0.756**
		0.030		0.000	0.000	0.000	0.000	0.000
		46	46	46	46	42	46	46
	Human Error Control	0.270	0.805**	1.000	0.800**	0.804**	0.854**	0.890**
		0.069	0.000		0.000	0.000	0.000	0.000
		46	46	46	46	42	46	46
	Optimizing Operational Efficiency with AI	0.148	0.792**	0.800**	1.000	0.653**	0.851**	0.815**
		0.328	0.000	0.000		0.000	0.000	0.000
		46	46	46	46	42	46	46
	Recurring tasks using AI	0.190	0.634**	0.804**	0.653**	1.000	0.839**	0.878**
		0.228	0.000	0.000	0.000		0.000	0.000
		42	42	42	42	42	42	42
	Obstacles and Limitations of AI in Accounting	0.138	0.742**	0.854**	0.851**	0.839**	1.000	0.955**
		0.360	0.000	0.000	0.000	0.000		0.000
		46	46	46	46	42	46	46
	Security and Privacy challenges in AI	0.158	0.756**	0.890**	0.815**	0.878**	0.955**	1.000
		0.295	0.000	0.000	0.000	0.000	0.000	
		46	46	46	46	42	46	46

Note: *. Correlation is significant at the 0,05 level (2-tailed).
**. Correlation is significant at the 0,01 level (2-tailed).

The analysis conducted shows the correlation between the personal finances of university professors and the dimensions of artificial intelligence (AI) as a tool for improving professors' finances. It is observed that personal finance has a weak but significant correlation with some AI dimensions, such as accounting accuracy ($r = 0.321$) and human error control ($r = 0.270$), indicating that there is a moderate relationship. In contrast, optimizing operational efficiency with AI shows an even lower correlation ($r = 0.148$), which is not significant at the 0.05 level, suggesting that the relationship between personal finances and operational efficiency is limited in this context because many university professors and, moreover, ordinary people outside of education, do not practice the use of AI tools to develop an AI-managed life model in their economies. On the other hand, AI dimensions are strongly correlated with each other. The highest correlations are observed between human error control and obstacles and limitations of AI in accounting ($r = 0.854$), and between recurring tasks using AI and security and privacy challenges ($r = 0.955$), all with $p < 0.01$, showing a strong relationship between these areas.

Although the observed correlations are weak, they indicate that certain AI applications, such as accounting accuracy and human error control, could have a potential impact on improving personal financial management. This finding highlights an important gap in current knowledge regarding how AI can contribute to developing the financial management skills of professors, particularly in teaching practice. AI can transform not only the operational efficiency of educators but also that of the general population and students who generate income through innovative work initiatives involving both income and expenses. Furthermore, AI can influence financial decision-making processes. However, further research is needed to better understand the precise nature of these relationships within this emerging economic management approach using this technology, especially in academic contexts that allow for the evaluation of the variables' significance in improving individuals' economic conditions. This area remains under study, as reflected in this academic work, and calls for practical interventions that can maximize the economic benefits of AI for educators.

4. Discussion

The analysis addresses the personal finances of university professors and the perception of artificial intelligence as a tool for economic improvement, and the discussions focused on the theoretical foundations and results acquired from the research.

According to previous studies, it has been identified and evidenced that the relationship is not statistically significant. This could be explained because many professors do not use or have experience with artificial intelligence in their daily routines, as it is a recent technology still in the process of being integrated into everyday life. This finding is related to the paper by Rodrigo [67], where they state that, although AI offers more accurate predictions in certain scenarios, it also presents challenges, such as the difficulty in interpreting its results. This has generated discussions about its application and viability in day-to-day contexts, such as finance.

The discussion began by addressing the general hypothesis stated above; likewise, Spearman's correlation coefficient was used for data analysis [34], which shows a weak positive correlation between the personal finances of university professors and the perception of artificial intelligence as a tool for economic improvement. This evidence suggests that there are practical and contextual barriers that limit the effective integration of AI in the financial management of university professors. These barriers could be due to a lack of knowledge about AI capabilities or mistrust in these tools. Moreover, personal finances are influenced by multiple external factors, such as income, expenses, financial education, labor and economic policies, and the influence of artificial intelligence could be limited compared to these more determinant factors. This connects with the research of Zubillaga, et al. [67] where the authors mention that AI is used in various areas of finance, such as payment systems, financial planning, financing, trading, investments, and insurance, among others, but there are difficulties related to improving operational efficiency, wasting time, and effort.

Regarding the first specific hypothesis, the relationship between personal finances in university professors and the accounting accuracy dimension of AI was analyzed, where a weak but significant correlation was found ($r = 0.321$). It is interpreted that greater use of AI tools that improve accounting accuracy could be associated with a favorable impact on professors' personal finances. These technologies could help educators better manage their income and expenses, identify saving opportunities, and minimize financial errors, resulting in greater financial stability and peace of mind in their daily lives [37].

Regarding the second specific hypothesis, the relationship between personal finances in university professors and the human error control dimension was studied, where a weak but significant correlation was found ($r = 0.270$), indicating that, although it cannot be confirmed with statistical certainty, there is a possible trend in which the improvement in human error control, facilitated by technological tools such as AI, could favorably influence the financial management of professors. Furthermore, this is related to the study by Sánchez-Caguana, et al. [33] where authors refer that artificial intelligence has the ability to reduce human errors and speed up processing times, in addition, that these advantages are fundamental to ensure accuracy and speed in financial reporting, however, the performance of AI depends directly on the quality of the data and methods used, underlining the need for sound data management.

Regarding the third specific hypothesis, the relationship between personal finances of university professors and the dimension of operational efficiency optimization with AI was evaluated, showing an even lower correlation ($r = 0.148$). This suggests that, although operational efficiency through the use of artificial intelligence may be relevant to other areas, its direct impact on professors' personal finances is not evident in this dataset, as mentioned in their research Prats [54], AI helps to increase accuracy in financial records and optimize accounting processes, allowing for more efficient management of time and available resources. However, it has a broader reach in other areas with better results in turn.

Regarding the fourth specific hypothesis, the relationship between personal finances in university professors and the recurrent tasks dimension was evaluated using AI, which shows a weak correlation (r = 0.190), indicating that although AI has the potential to improve efficiency in recurrent tasks and thus positively influence professors' personal finances, the relationship observed in the analysis is not conclusive due to factors such as lack of familiarity with the technology, limited access to AI tools, or lack of training in their use, which could be limiting the potential benefits.

Regarding the fifth specific hypothesis, the relationship between personal finances of university professors and the dimension of obstacles and limitations of AI in accounting was analyzed (r = 0.138). These results suggest that the challenges associated with the obstacles and limitations of AI in accounting, such as implementation problems, costs, or technical barriers, do not have a direct or notable impact on the personal finances of professors, and this is related to the article by Sánchez-Caguana, et al. [33], which highlights that AI not only helps to reduce labor effort and operating expenses but also facilitates a more agile reaction to the financial demands of the market. However, the results stress that while AI significantly impacts its own dimensions, its direct relationship with university professors' personal finances appears to be limited, indicating areas for further research.

Finally, regarding the sixth specific hypothesis, the relationship between the personal finances of university professors and the dimension of security and privacy challenges in AI was analyzed, showing a correlation coefficient (r = 0.158). This suggests that professors may not perceive security and privacy challenges as factors directly affecting their financial situation, as these issues are typically associated more with the implementation of technologies in companies or institutions than with personal finances. Additionally, there may be a disconnect between the adoption of artificial intelligence technologies in accounting and their tangible impact on individuals, especially if professors do not use AI tools directly to manage their financial resources.

Therefore, after this analysis, it is evident that the personal finances of university professors have weak relationships with specific dimensions of artificial intelligence, such as security and privacy challenges, and obstacles in accounting, without reaching statistical significance. However, dimensions such as accounting accuracy present moderate and significant correlations, suggesting that AI could indirectly contribute to an improvement in personal finance by optimizing related processes. This suggests that the positive impact of AI in this area requires overcoming its technical and security limitations. As expressed by Sánchez-Caguana, et al. [33] in their article, the authors point out that, with the advancement of AI, its influence on accounting is expected to grow, providing innovative solutions and opportunities that respond directly to the demands of the accounting sector, ensuring an efficient and appropriate implementation of these technologies.

5. Conclusion

Artificial intelligence offers significant potential to positively influence the personal finances of university professors by providing tools that simplify and optimize financial management. Although its direct impact may currently be limited, advancements in these technologies promise to facilitate more informed and effective financial decisions. However, adopting AI in this area requires overcoming barriers such as access, technical knowledge, and confidence in its use. To summarize, integrating AI into professors' personal finances can become a key factor in enhancing their long-term quality of life by offering practical solutions that simplify complex tasks such as tracking income and expenses, budget planning, and identifying savings opportunities. Nonetheless, implementation necessitates overcoming challenges like the need for training in these technologies and ensuring they are accessible and secure. As these tools evolve, they could significantly contribute to the economic stability and financial well-being of university professors, strengthening their capacity to meet economic challenges and improve their quality of life over the long term.

References

[1] U. Q. Estrada, J. A. S. Aguirre, A. A. Ríos, and L. F. G. Giraldo, "Financial risks in small and medium-sized enterprises," *Revista Venezolana de Gerencia*, vol. 25, no. 91, pp. 1076-1094, 2020.

[2] I. S. Bazán, K. S. Rosero, Y. S. Quispe, Y. V. Zambrano, and T. L. Flores, *Financial education and its impact on the personal finances of teachers at an educational institution in Peru*. Lima, Peru, 2023.

[3] R. M. Reátegui, "National development plans and market process: A revision from law & economics, IA, and the public issues perspectives," *University* vol. 73, 2024.

[4] World Bank Group, *Global economic prospects*. Washington, DC: World Bank Publications, 2022.

[5] J. R. Sanchis Palacio and V. Campos Climent, "Economy for the common good and ethical finances," *Ciriec-espana journal of public, social, and cooperative economy*, vol. 93, pp. 241-264, 2018.

[6] W. M. López and D. T. V. Cerquera, "Financial education from the perspective of human development theory: A conceptual contribution to SDG management," *European Public & Social Innovation Review*, vol. 9, pp. 1-16, 2024.

[7] A. D. Ccama Delgado and S. M. Diaz Rodriguez, *Financial education and personal finance for young people in San Juan de Lurigancho*. Cesar Vallejo University, 2024.

[8] M. Peñarreta and R. Armas, "Financial education in ecuadorian university students: A machine learning application," *Revista Ibérica de Sistemas e Tecnologias de Informação*, no. E71, pp. 528-542, 2024.

[9] UNESCO, "Education financing observatory ", UNESCO Institute for Statistics, 2022.

[10] M. Finio and A. Downie, *What is artificial intelligence in finance?* . Armonk, New York, United States: International Business Machines Corporation, 2023.

[11] C. A. G. Prieto, J. S. S. Santa, and L. C. V. Álvarez, "Financial education as a mediator between financial planning and financial performance in microentrepreneurs in the solidarity sector," *Cuadernos de Economía, Bogotá, Colombia*, vol. 43, no. 91, pp. 265-295, 2024.

[12] OECD., "The OECD reviewed and updated its AI rules in response to advances in this technology. Portafolio.co. ," Bogotá, Colombia, 2024.
[13] Ö. Ö. Yıldız and S. Görkey, "Causal links between patents and economic growth: Empirical evidence from OECD countries," *International Journal of Innovation*, vol. 12, no. 2, pp. e26107-e26107, 2024.
[14] J. E. Perezchica-Vega, J. A. Sepúlveda-Rodríguez, and A. D. Román-Méndez, "Inteligencia artificial generativa en la educación superior: Usos y opiniones de los profesores," *European Public & Social Innovation Review*, vol. 9, pp. 1-20, 2024.
[15] L. Cotino Hueso, "Artificial intelligence, language technologies and resources: Policies and law for the exploitation of corpuses and databases.," *Journal of Language & Law/Revista de Llengua i Dret*, vol. 79, 2023.
[16] GPAI, "Joint statement of the founding members of the global partnership on artificial intelligence," Mexico, 2020.
[17] C. Li and J. Jurgens, *We must come together to ensure AI governance that works for all*. Geneva, Switzerland: World Economic Forum., 2024.
[18] K. Georgieva, "The global economy transformed by artificial intelligence must benefit humanity," *IMF Blog*, vol. 16, 2024.
[19] A. Economía, "AI and economic development: Opportunities and challenges for sustainable growth in the region," Santiago, Chile, 2024.
[20] H. Domin, *AI applied to accounting. Billin's blog*. Foro Económico Mundial, 2024.
[21] C. P. Pareja-Daza, I. E. Orlandini-Gonzalez, and A. M. Mariano, "Business models and digital entrepreneurship: A bibliometric analysis. Iberian Journal of Information Systems and Technologie," *Iberian Association of Information Systems and technologies*, vol. E66, pp. 423–435, 2024.
[22] U. O. I. Cabrera and C. d. J. M. Aquituari, "Machine learning in finance," *Mount Scopus Journal*, vol. 4, no. 7, pp. 6-38, 2024.
[23] T. L. Ramos Changanaqui and S. M. Servan Tafur, "Personal finances and financial education among bank savers in Lima," Lima, Perú, 2021.
[24] J. Z. Antón and L. M. Castellanos, "Advances in decision-making theory: Implications for public financial education policies in Argentina," *Revista Argentina de Ciencias del Comportamiento* vol. 16, no. 1, pp. 38-53, 2024.
[25] E. Pérez Cajo, "Financial education and personal finance for small and micro-entrepreneurs in the Ayaymama regional market, Moyobamba, 2021," Tarapoto, Peru., 2021. https://hdl.handle.net/20.500.12692/66611
[26] J. F. Ponce-Dominguez, M. M. Erazo-Moreno, J. Nina-Cuchillo, and M. E. Colichón-Chiscul, "Institutional climate and faculty performance at a public university in Lima " *Formación Universitaria*, vol. 17, no. 3, pp. 95-106, 2024.
[27] E. G. Estrada-Araoz *et al.*, "Assessment of the level of knowledge about artificial intelligence in a sample of university professors: A descriptive study," *Data and Metadata*, vol. 3, pp. 285-285, 2024.
[28] N. D. P. P. Tomanguillo, D. D. P. B. Arévalo, C. D. R. Bardalez, and S. L. P. Tomanguillo, "The impact of quality management on the financial competitiveness of the Peruvian banking sector: An empirical study. Sapienza," *International Journal of Interdisciplinary Studies*, vol. 6, no. 2, pp. e25018-e25018, 2025. https://www.scopus.com/pages/publications/105003863685
[29] A. Alonso-Robisco and J. M. Carbó, "Artificial intelligence and finance: A strategic alliance," in "Documentos Ocasionales/Banco de España, 2222," Madrid, Spain, 1696-2230, 2022.
[30] K. S. Ledesma Vallejos, "Attitudes and perceptions toward Artificial Intelligence in educational practices among university students and teachers in Trujillo," Trujillo, Peru, 2024. https://hdl.handle.net/20.500.12692/149934
[31] C. Planuch-Prats and R. Salvador-Vallés, "Digitalization and knowledge management in financial services," *DYNA*, vol. 93, no. 4, pp. 356-356, 2018.
[32] S. O. Fernández, "The digital divide as a determining factor in inequality and economic growth," *European Public & Social Innovation Review*, vol. 9, pp. 1-17, 2024.
[33] D. F. Sánchez-Caguana, M. A. Philco-Reinozo, J. M. Salinas-Arroba, and J. C. Pico-Lescano, "Impact of artificial intelligence on the accuracy and efficiency of Modern accounting Systems," *Journal of Economic and Social Science Research*, vol. 4, no. 3, pp. 1-12, 2024.
[34] A. Z. Rego, I. P. López, and P. G. Bringas, "Artificial intelligence: An approach from finance," *Boletín de estudios económicos*, vol. 75, no. 229, pp. 99-117, 2020.
[35] C. E. Rodríguez, "Financial management and university quality: A quantitative study from Chile," *Interciencia*, vol. 50, no. 2, pp. 93-98, 2025.
[36] V. R. Cairo, R. A. S. Pacheco, J. Y. Cueva, and J. I. R. Reyes, "Financial stability and systemic risk management in advanced economies and the Pacific alliance," *Revista Venezolana de Gerencia*, vol. 28, no. 103, pp. 1001-1020, 2023.
[37] M. Singht, A. Amwar, H. Suthar, A. Anil, and N. Dhusia, *Principles of financial management*. New Delhi, 2024. https://www.researchgate.net/publication/380364664
[38] R. Pérez-Campdesuñer, A. Sánchez-Rodríguez, M. Noda-Hernández, G. García-Vidal, and R. Martínez-Vivar, "Optimizing budget use in the quality improvement process at a higher education institution in Ecuador.," *University and Society*, vol. 15, no. 1, pp. 708–722.
[39] G. Mejía, "How to get out of debt fast. helping you achieve financial freedom.," USA, 2024. https://guillermomejia.com/herramientas/eliminacion-de-deudas/
[40] C. Castellanos, *How to get out of debt? A beginner's guide to finance*. Soc Asesores, 2024. https://blog.socasesores.com/como-salir-una-deuda/
[41] A. E. M. Tete, A. I. De La Hoz Suárez, H. U. Berrio, and B. de la Hoz Suárez, "Economic growth through voluntary savings to leverage fishing production processes in Puebloviejo, Colombia," *Revista de ciencias sociales*, vol. 28, no. 6, pp. 364-379, 2022.
[42] D. Cáceres, "109 easy but high-impact tricks to save a lot of money every day ", Business Insider Spain, 2024.
[43] P. Venugopal, "Examining the relationship between financial knowledge, risk tolerance, and past behavioural bias on investors actual investment behavior," *Environmental & Social Management Journal/Revista de Gestão Social e Ambiental*, no. 6, p. 18, 2024.
[44] T. Gómez Rodríguez, H. Ríos Bolívar, and A. Zambrano Reyes, "Interaction between economic growth, stability and financial inclusion: International empirical evidence," *Accounting and Management*, vol. 66, no. 1, 2021.

[45] O. Kalinin, V. Gonchar, O. Zakharchenko, O. Darushyn, M. Maltsev, and P. Datsiuk, "A comprehensive methodology for evaluating economic security in the digitalization of investment processes," *Revista de Gestão Social e Ambiental*, vol. 18, no. 5, p. e05441, 03/14 2024. https://doi.org/10.24857/rgsa.v18n5-026
[46] A. Redondo, "Diversifying your investments. Why do It? 5 Ways. ," De Inversión, E. C. The Investment Club. , 2024. https://www.elclubdeinversion.com/diversificacion-de-inversiones/
[47] G. S. Miñan Olivos, J. A. Estrada Espinoza, A. A. Cruz Aguilar, J. A. Moreno Ramos, and C. B. Cisneros Hilario, "Business intelligence as a competitive advantage in organizations," *A Systematic Review of the Literature*, vol. 1, no. 8, 2023. https://www.scopus.com/record/display.uri?eid=2-s2.0-85172353344&origin=resultslist&sort=plf-f&src=s&sid=30b77c7279be10361bbf58f145e4e6d3&sot=b&sdt=b&s=TITLE-ABS-KEY%28inteligencia+AND+artificial+negocios%29&sl=36&sessionSearchId=30b77c7279be10361bbf58f145e4e6d3&relpos=1
[48] D. Mora, "A Practical application of artificial intelligence in personal finance analysis," Madrid, Spain, 2022.
[49] A. Gil, *The impact of artificial intelligence on the global economy by 2030. Managers and Companies*. Madrid, Spain, 2024.
[50] J. Kauflin, "How AI is empowering financial fraud and making it harder to detect," Forbes Mexico, 2023. https://forbes.com.mx/como-la-ia-esta-potenciando-el-fraude-financiero-y-haciendolo-mas-dificil-de-detectar/
[51] M. Torres, "Accounting: what is it, definition, and concept? accounting news.," Mexico City, Mexico, 2022.
[52] M. De la Cueva, *AI applied to accounting*. Billin's Blog, 2024.
[53] M. Vicedo, *Task automation: The impact of AI. work meter*. Spain: Madrid, 2024.
[54] G. M. Prats, "Technology and its social impact on financial education," *TECHNO REVIEW. International Technology, Science and Society Review/Revista Internacional de Tecnología, Ciencia y Sociedad*, vol. 13, no. 4, pp. 1-8, 2023.
[55] D. Appian, "Process optimization with AI : 5 ways to boost business efficiency," McLean, Virginia, United States, 2023.
[56] R. J. A. Vanoy, "Educational transformation: Optimizing the teaching of logistics in international business through the application of artificial intelligence in higher education institutions. health, science and technology," Bogotá, Colombia, 2023, vol. 2, pp. 422-422.
[57] F. Riedel, "What specific tasks can AI automate? Cirion Technologies. ," Egypt, 2024. https://blog.ciriontechnologies.com/specific-tasks-can-AI-automate
[58] N. Sanabria Tarazona and J. P. Barajas Picón, "Exploring the application of Artificial Intelligence in accounting processes, understanding its influence on efficiency, accuracy, and decision-making in business accounting.," Bucaramanga, Colombia, 2024.
[59] H. González, *Artificial intelligence (AI) has revolutionized many aspects of our daily lives. Herschel González*. Mexico City, Mexico., 2024.
[60] A. Lug, "The 10 biggest challenges of artificial intelligence in," Barcelona, Spain, 2024. https://andrelug.com/es/los-10-mayores-desafios-de-la-inteligencia-artificial/
[61] Á. Serrahima de Bedoya, "Advances and Challenges of Artificial Intelligence," Madrid, Spain, 2022.
[62] V. García, A. López, and M. Usaquen, "Integration model for financial technology and digital marketing supported by knowledge management," *RISTI-Revista Iberica de Sistemas e Tecnologias de Informacao*, vol. 2020, no. E34, pp. 450-462, 2020.
[63] M. Bachelet, "The privacy risks of artificial intelligence demand urgent action," *Comunicado de Prensa, OACNUDH*, vol. 15, 2021.
[64] O.-Y. Aparicio-Gómez and M. A. C. Gallego, "Ethical challenges of artificial intelligence in learning personalization," *Revista Interamericana de Investigación Educación y Pedagogía RIIEP*, vol. 17, no. 2, pp. 377-392, 2024.
[65] B. L. Liu *et al.*, *Opportunities and challenges of the artificial intelligence era for higher education: An introduction for higher education stakeholders*. París, Francia, 2023.
[66] A. D. T. Rivera and L. A. Díaz-Torres, "Applications of artificial intelligence in digital business models," *Recherches en Sciences de Gestion*, vol. 141, no. 6, pp. 67-88, 2020.
[67] M. F. Zubillaga *et al.*, *Amaranth irrigation frequency in northeast Patagonia*. Argentina, 2021.