



FINANCIAL INTELLIGENCE AND ITS ADOPTION IN LATIN AMERICA: PERSPECTIVES, CHALLENGES AND OPPORTUNITIES CASE OF COLOMBIA, ECUADOR, CHILE AND VENEZUELA

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Abstract

This scientific article presents a complete overview of the knowledge and applications of financial intelligence in South America. A wide survey was applied to measure and collect the level of knowledge and application of financial management in the surveyed region. The main objective is to analyze the knowledge, application and perception of financial intelligence in South American countries, as well as the potential economic impact on regional economic development.

The methodology of the present investigation combines quantitative and qualitative study approaches, study of the financial intelligence theory, online surveys, semi-structured interviews, and regional economic data analysis. Data collection was obtained from an adequate sample of 100 participants in the survey, in the following countries: Colombia, Peru, Chile, Venezuela, and Ecuador. The theoretical framework accounted for basic concepts, theories, models, tools, benefits and challenges of financial intelligence, as well as its evolution and recent prospects.

The relevance of this study is justified by the importance of financial intelligence as crucial for economic development, improvement of decision-making, bridging the gap of knowledge, regional comparison and knowledge growth and development. The findings aim to provide useful information to boost knowledge and practice of financial intelligence in South America, contributing to the economic and financial progress of the region.

Key words: Financial intelligence. South America. Economic growth. Decision-making. Adoption

1. Introduction

This scientific article aims to take a close look at the knowledge and application of financial intelligence in South America. To discuss this topic in depth, a survey has been carried out as a means of collecting complete and accurate information on the level of knowledge of people in the region on the subject in question, as well as their degree of adoption of intelligent financial practices. In order to produce solid and practical suggestions to support the growth of financial intelligence in the area, the present research has aimed to obtain an amplified global image of the current state of the knowledge and adopted practices of financial intelligence in South America. In this section, the main findings derived from the application of the aforementioned survey will be discussed in an exhaustive

and precise manner. The discussion of the findings will include an in-depth analysis of people's level of knowledge in relation to financial intelligence, as well as their degree of adoption of smart technologies. In addition, the different factors around which the level of knowledge and adoption of practices in financial intelligence throughout South America gravitate will be analyzed with special attention, with the purpose of providing an integrated perspective of the current panorama.

In this way, this work aims to be an essential tool for the scientific and non-scientific community interested in financial intelligence and its applications to the South American context. Based on the conclusions and recommendations formulated from the results of this research, it is expected that the indicated field will grow and be strengthened in the area, safeguarding the importance of developing knowledge about the practical applications of financial intelligence in a variety of South American social spheres.

In short, this article aims to contribute with its results to the economic and financial advancement and progress of the region, promoting a culture of effective financial intelligence. The general objective of this research is to evaluate the level of knowledge, adoption and perception of financial intelligence in the countries under study in South America, in order to understand its potential impact on the economic growth of the region. To achieve this, three specific objectives are proposed: first, to determine the level of knowledge and understanding of financial intelligence that individuals, companies and organizations have in the different countries of South America; second, to identify the types of financial intelligence tools that are currently in use or there is interest in using, as well as the perceived benefits of their adoption in organizations and the personal lives of respondents; and thirdly, to analyze the main challenges and barriers faced by individuals, companies and organizations in the region to adopt financial intelligence, including aspects related to training and education in this field.

To achieve the objectives, a field study will be carried out in which surveys and interviews will be applied to a representative sample of the population of each South American country. Conducting studies in the field will allow us to gather both quantitative and qualitative data which can be used to interpret how much people know about financial intelligence within this region, comparing different countries within their respective economic sectors. This work is interested in the significance of economic growth through financial information dissemination in Latin America.

To ensure the preservation of regional stability and economic growth, sound budget decisions are essential. It is only possible to understand regional development patterns and promote financial education by assessing local awareness and acceptability of knowledge. Below are some of the aspects to evaluate:

1) Importance of Latin American Economic Growth: For Latin American countries, the key to boosting their economic growth and international competitiveness lies in understanding how financial information is used within the region. More importantly, by doing this we shall be able to come up with better ways of utilising it thus ensuring that our countries thrive economically. Perhaps most importantly of all however would be for us also devise means through which its usage can be promoted (Mamani Ruelas, 2023).

2) Create Learning Strategies, Policies and Initiatives: In order to promote the exploration of finance within any given jurisdiction; whether national or otherwise, governments need deep insights about levels of skills existing there, kinds tools being applied as well advantages versus disadvantages that come with implementation he added pointedly while looking at me expectantly over his spectacles from across the table where we sat during lunch break at work last week - The study provides comprehensive information concerning skill level required, tools utilized plus merits and demerits associated with adoption of the said economic.

3) Closing knowledge: There is no information about research and financial information in South America. This study will help to cover this gap and provide a strong base for other research and activities in this field (Rodrigosz and Kiroz, 2024).

4) Regional comparison: In many cases, focusing on this study, best practices and effective strategies for strengthening financial intelligence across the region can be identified through regional comparison through data collection and analysis.

5) Advanced knowledge: The use of AIDIS and advanced financial solutions is part of financial intelligence and helps create regional competitiveness, skills and long-term economic development opportunities.

6) Social responsibility: Social factors including financial education, economic benefits including financial literacy, financial education and efficient management of resources (Martinez, 2023). This study shows how important financial information is becoming.

Solórzano-Hernández (2022) employed interviews with financial experts and analysis of economic data as a methodology. It was a mixed method where quantitative and qualitative methods were used. The research design was non-experimental, descriptive, correlational (Álvarez-Risco, 2020). The population of interest included people from Colombia, Peru, Chile, Venezuela and Ecuador. A sample size of 100 participants was randomly selected from different regions in South America. Sample size calculation aimed at achieving representative results that are statistically significant with 95% confidence level and 5% margin of error (Sucasaire Pilco, 2022).

Online surveys, semi-structured interviews among others were some means through which information was gathered. An online questionnaire alongside an interview schedule were some of the tools used (Gutiérrez, 2021). Descriptive statistics, hypothesis testing and multivariate analysis were some of the methods used to analyze data collected quantitatively while interview content analysis represented the qualitative part of data analysis in this study (Cubillos & Carmona, 2023). Ethical aspects like acquiring fully informed consent from research subjects before their involvement in the study; ensuring that confidentiality is maintained at all levels starting from where data are being collected up to when the report is written; safeguarding data storage media against unauthorized access so as to protect the privacy rights guaranteed by laws on safeguarding personal records or any other relevant legislation enacted for this purpose were observed by the researcher(s). In addition, a specific plan for each stage of inquiry was developed with due allocation of human resources, funds and materials intended to facilitate smooth running of the research (Lara-Felix and Cervantes-Aldana, 2023).

2. Theoretical framework

This theoretical framework encompasses the fundamental principles of financial intelligence, the relevant theories to it, the research and practice models, as well as the tools and techniques used in measuring it. Besides, it entails the probable merits of being financially smart, the hindrances towards this status and the specific context studied across different countries. It is also important to note that they may refer to previous studies carried out in this area; in addition, there exist various approaches within financial intelligence such as those which are built on the theory of knowledge construction (KBT), or alternatively adopt the behavioral science perspective incorporating financial education theories with other behavioral theories e.g., cognitive psychology etc (Terán-Yépez & Guerrero-Mora, 2020). These perspectives enable us to understand what financial literacy means for individuals residing in Latin America.

2.1. Concept of Financial Intelligence:

Financial Intelligence Definition and Scope: In South America, financial intelligence refers to an individual's or organization's ability to understand and use financial concepts in decision-making. It means being well-versed in budgeting, investing, saving, borrowing among others; it also requires the capacity for assessing and mitigating risk as well as planning for control over scarce economic resources within a given environment taking into account its peculiarities.

Another important concept is about developing skills in relation with money management through making good decisions about it. This includes things like planning for finances; managing budgets

effectively; investing wisely (Rojas Fernández, 2023) – which can be defined as knowing how one should take care of their own funds or those entrusted by others so that they grow while remaining safe at all times according to Silva Díaz & Vargas Vilca (2020).

Therefore financial literacy may be described as an understanding of what needs doing today so that there will always be enough tomorrow too. Avendaño and Velasco (2021) state that this also involves knowing how best to use one's resources in order to ensure a sound economic future for oneself as well as others depending on them financially.

2.2. Importance of financial intelligence in decision-making

Financial literacy plays a role, in decision making whether its for individuals or businesses (Caicedo Monserrate et al., 2021). It helps in assessing and choosing the investment opportunities, effectively managing finances reducing financial risks and reaching financial objectives. Moreover having acumen is vital for making decisions within a company, such as planning projects, managing capital and evaluating business prospects. In South America, where economic conditions can be unpredictable having intelligence becomes more important to tackle challenges and capitalize on available opportunities in the region (Betancourt & Álvarez, 2022).

Nevertheless the significance of intelligence in South America necessitates an examination of economic patterns and influencing factors to grasp its impact on the regions economic progress. This analysis can lead to proposing strategies, for enhancing intelligence and fostering growth (Rubaceti et al., 2022).

2.3. Evolution and trends in financial intelligence

The evolution of financial intelligence has been dramatic in the past decades as a result of the speed and disruption brought by digital technologies in conjunction with the explosion of financial data (Parada Campillo, 2023). Where once spreadsheets and basic financial modelling applications were sufficient, today's tools have become more and more advanced and sophisticated. Artificial intelligence applications and algorithms have been developed to analyse large amounts of data in real time (Moreno-Hernandez et al.2023), and these tools are helping to enhance the capacity of financial institutions to make decisions based on up-to-date and accurate information (Rocha-Granados, 2022). Similarly, financial intelligence techniques that rely on machine learning and data mining have been scaled up. (Sanchez et al., 2023)

One point of note in the history of financial intelligence is when there was a widespread use of systems that plan enterprises' resources and business intelligence applications came into place to manage financial records (Akyurt et al., 2020). As a result, they collect, store and process massive amounts of finance data within short periods that will enable you to make better decisions on investments. Similarly, technology advancement include the creation of AI tools capable of making financial data interpretation faster while improving accuracy levels (Carvajal Grau, 2023).

Nevertheless it is still the original innovation of disruptive technologies like big data, AI and machine learning that has truly revolutionized this space, bringing with it the age of financial enlightenment and intelligence. The possibility of processing large datasets within shorter periods; identifying intricate patterns better than any human capacity ever could and making more accurate forecasts possible plus implementing information-based decision making as well as more effective investment strategies within finance has been quickened too (Zaga, 2023).

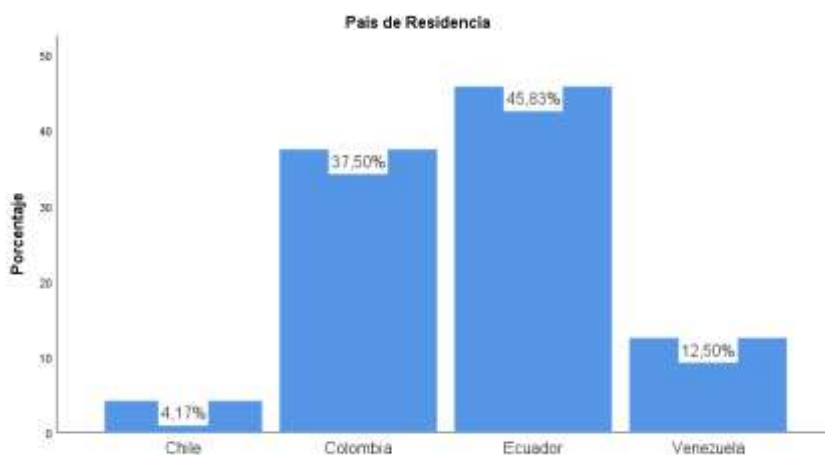
Natural language processing (NLP) and deep learning have become a recent development within financial intelligence through advanced technologies. These systems are able to extract relevant information automatically when unstructured data is analyzed, for instance textual financial statements (Núñez, 2020). Additionally, progress made in cryptocurrencies together with decentralized finance (DeFi) have led to emergence of specific tools for this growing sector in financial intelligence. Blockchain transactions can be studied using these technology tools among

other things like monitoring cryptocurrency markets or evaluating risks within such environments; virtual environments (Iglesias & Llorente, 2022).

3. Survey Results

When considering the country where participants are living, 87.5% of responses can be seen to fall into two categories when accumulated into percentages: Ecuador (45.83%) and Colombia (37.50%). These figures imply that most people polled inhabit either Ecuador or Colombia and there is less representation from Venezuela as well as Chilean citizens in this sample set. Several factors may account for such an outcome including varying economic capabilities across nations together with their distinct financial policies (Figure 1).

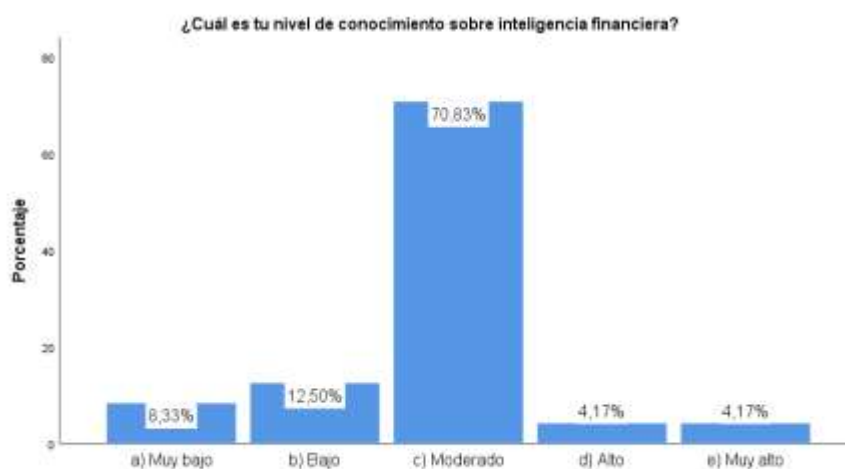
Graphic 1. Country of Residence



Source: Authors' own creation (2023)

Regarding the level of knowledge about financial intelligence, the accumulated data reveal that 91.7% of the observations are in the categories of "very low" to "moderate", representing 70.83% of the total. Only the remaining 8.3% fall into the "high" and "very high" categories. This suggests that the majority of the population possesses a limited level of knowledge in terms of financial intelligence (Figure 2).

Graphic 2. Level of Knowledge in IF



Source: Authors' own creation (2023)

When inquiring about the level of use of financial intelligence tools in the organization or in personal life, the cumulative percentages reveal that 62.5% of the observations are grouped into the categories "I do not use any tools" and "I use tools sporadically". In contrast, the remaining 37.5% fall into the categories of "I use tools on a regular basis" and "I use tools extensively." This indicates that a significant portion of respondents use financial intelligence tools occasionally. 25% of the sample, specifically. This implies that a quarter of respondents do not use financial intelligence tools (Figure 3).

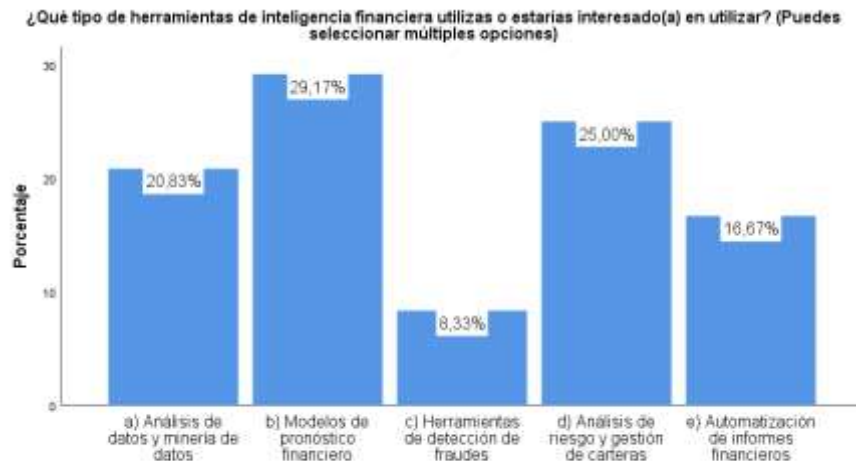
Graphic 3. FI Tools Used in the Organization



Source: Authors' own creation (2023)

This suggests that respondents appreciate tools that allow them to forecast future financial scenarios and make informed decisions about risk management and investment portfolios. In business or personal settings, accurate financial projections and proper risk management are essential for strategic decision-making and wealth preservation. In addition, there is also a strong interest in "Data Analytics and Data Mining" (20.8%), indicating that respondents recognize the importance of harnessing the potential of data to gain valuable insights and gain a competitive advantage in the financial arena. On the other hand, tools related to "Financial Reporting Automation" (16.7%) and "Fraud Detection" (8.3%) were less popular, although they were still chosen by some respondents. This could indicate that while they are considered useful, they are not perceived as immediate priorities or as relevant as the tools mentioned above (Figure 4).

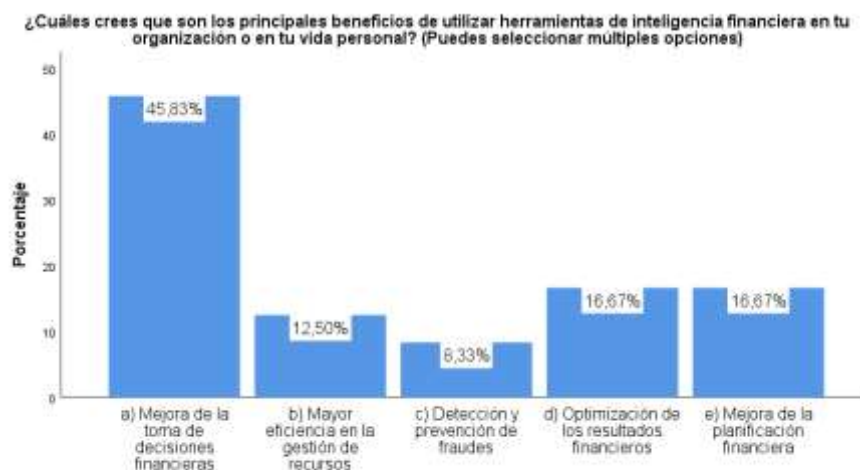
Graphic 4. Using Personal IF Tools



Source: Authors' own creation (2023)

When researching the main benefits of using financial intelligence tools in the organization or on a personal level, the data shows that the main benefit perceived by respondents when using such tools is "Improved financial decision-making", chosen by almost half of respondents (45.8%). This highlights the importance placed on having solid information and analysis that allows for more informed and efficient financial decisions. In second place are two closely related benefits: "Optimization of financial results" and "Improvement in financial planning," both with 16.7% of selections. This suggests that respondents recognize the potential of these tools to improve financial outcomes through more accurate and effective planning. In addition, although to a lesser extent, some respondents (12.5%) identified "Increased efficiency in resource management" as a relevant benefit of using these tools. This implies that financial intelligence tools can contribute to the optimal allocation and use of available resources, which is essential for long-term financial sustainability. On the other hand, the least valued benefit was "Fraud Detection and Prevention," with only 8.3% of selections. This could be because this aspect is not perceived as an immediate priority or as relevant as the other benefits mentioned, although it is still important in certain contexts and scenarios (Figure 5).

Graphic 5. Benefits of IF tools



Source: Authors' own creation (2023)

In relation to the main challenges or obstacles to implementing financial intelligence in the organization, the lack of knowledge and understanding on this topic represent significant barriers. Many organizations and practitioners still do not fully understand the associated benefits, theories, and models. This highlights the need to establish continuing education and training programmes to transfer knowledge and skills in this area. Implementation costs and resource optimization are critical challenges. Organizations should carefully evaluate the expenses related to acquiring, implementing, and maintaining financial intelligence tools. They must also properly plan the allocation of human, technological and financial resources to maximize the return on these investments. On the other hand, having access to reliable, up-to-date, and quality information is essential to achieve success in the field of financial intelligence. Organizations must address aspects related to the centralization, distribution, and control of data, in addition to establishing mechanisms to obtain relevant and timely information for decision-making. In the same way, the choice and correct use of financial intelligence tools represent essential challenges. When evaluating available options, companies should carefully examine features such as scalability, security, ease of use, and reliability. Rules and safeguards must be in place to ensure tools and data are handled correctly. The challenges facing corporate structure and culture cannot be ignored. Financial information can also be used to change employment practices, corporate culture and decision-making processes. For organizations to effectively use new technologies, these challenges must be addressed through strong leadership, training and communication (Figure 6).

Graphic 6. Challenges or barriers in adopting FI



Source: Authors' own creation (2023)

When it was investigated whether they have received training or education in financial intelligence, the cumulative percentages show a clear polarization in the responses. 83.3% of respondents focus on the "No" option, while the remaining 16.7% choose the "Yes" option. These results suggest that there is a significant gap in financial intelligence training and education within the surveyed population. The vast majority of participants have not had access to or received this type of training, which could be an obstacle to effectively adopting and using financial intelligence tools. This lack of training may be related to some of the challenges identified above, such as lack of knowledge and lack of knowledge about financial intelligence, its fundamentals and models. It may also reflect the need to strengthen education and training programs in this field, to facilitate greater adoption and use of these tools in organizations. (Figure 7.)

Graphic 7. FI Training



Source: Authors' own creation (2023)

When examining how financial intelligence can benefit the economic growth of countries in South America, the results indicate that 50% of respondents believe that financial intelligence will make a major contribution to South America's economic growth, while 37.5% believe that it will contribute greatly. Together, these figures add up to a total of 87.5% of respondents who have a strong and positive perception about the impact of financial intelligence on the region's economic growth. On the other hand, only 12.5% of respondents believe that the contribution will be moderate. This analysis suggests a general trend towards a positive view of the importance of financial intelligence in the economic development of South America. The high percentage of responses indicating that financial intelligence will contribute greatly or a great deal suggests significant confidence in this tool as a key enabler of economic growth in the region. This level of trust could prompt the implementation of measures to strengthen financial literacy and financial intelligence skills, which in turn could have a positive impact on the stability and economic growth of countries in South America. (Figure 8.)

Graphic 8. FI's Contributions to Economic Growth



Source: Authors' own creation (2023)

4. Discussion

The survey results provide an in-depth analysis of how financial intelligence is perceived, understood, and utilized by the respondents, as well as their thoughts on its potential impact towards economic growth in South America.

RehumanizeOn the other hand, it should be noted that most people who answered the poll come from Ecuador and Colombia; this compilation makes 87.5% of all answers received so far. This might be due to several factors such as changes in tax policies or even different levels of income flow between countries. Nevertheless, 91.7% of participants fell under “very little knowledge” or “no knowledge at all” categories about financial intelligence which clearly indicates that the majority lack this kind of understanding hence the need for instructional improvement in fields concerning them should be made promptly.

Financial intelligence tools are used by an important number of respondents periodically, although 62.5% do not use it at all or just sometimes. Accordingly, this result showcases the necessity to increase adoption rates and maintain usage levels for these tools. Moreover, the outcome reveals distinct interest in financial forecasting, risk analysis and portfolio management tools in relation to financial literacy. Consequently, there is a need for decision-making instruments that will provide insights and oversee optimal utilization of financial resources.

The primary advantage of financial intelligence tools identified by the respondents is better financial decision-making. Thus, it can be concluded that the right information and analysis are essential for making informed financial decisions. However, significant challenges to the effective implementation of financial intelligence were identified, such as lack of knowledge and understanding, implementation costs and resource optimization, as well as cultural and organizational challenges.

Perception of the impact on economic growth: Analysis of the perception of the impact of financial intelligence on economic growth reveals a general trend towards a positive view. According to 87.5% of respondents, financial information has an important or significant impact on economic expansion in Latin America. With this high level of confidence, there can be great opportunities to promote policies that improve financial literacy and intelligence that foster local economic growth.

5. Conclusions and recommendations

Analysis of data from Ecuador and Colombia suggests a representative sample of these two countries compared to Venezuela and Chile. Most of the participants have a limited level of financial intelligence, highlighting the need for improved education and training in this area. Many participants don't use financial intelligence tools on a regular basis, which is an opportunity to increase adoption. There is a significant interest in tools related to the projection, analysis and management of financial risks. Improved financial decision-making is the top benefit identified by half of the participants, followed by optimization of results and improvement in financial planning. Significant challenges, such as lack of knowledge, implementation costs, and resource optimization, must be addressed to achieve successful adoption of financial intelligence. Most of the participants have not received training in financial intelligence, highlighting the need to strengthen education and training programs. The majority of participants believe that financial intelligence will contribute greatly to South America's economic growth, indicating a positive perception of its role in regional development.

It is proposed to strengthen education and training in financial intelligence consists of implementing teaching programs that increase the level of knowledge and skills in financial intelligence among the population. In addition, it seeks to promote the adoption and periodic use of financial tools that facilitate access to and application of tools that help improve economic decision-making and risk management. It also intends to invest in infrastructure and resources for the implementation of financial intelligence. This will make it possible to properly assess and allocate human, technological and financial resources with the aim of maximizing the return on investments in financial intelligence.

Another crucial aspect is building collaborative networks among educational institutions, government, private sector players that will facilitate exchange of best practices and promote collaboration. This creates a channel through which financial information can be shared based on experience and knowledge. Besides, it's critical to have a corporate culture that cherishes financial literacy. Therefore, this implies elevating your expertise and skills in this field and embracing a proactive stance towards the fiscal data of your organization. Last but not least is appraising financial information's value from a systematic standpoint. In doing so, we are able to continuously appraise activities related to financial intelligence aimed at establishing how they impact economic growth as well as people's welfare in terms of finance generally constructed.

Bibliography

1. Akyurt, Z., Kuvvetli, Y., & Deveci, M. (2020). Enterprise resource planning in the age of industry 4.0: A general overview. *Logistics 4.0*. researchgate.net
2. Álvarez-Risco, A. (2020). Classification of investigations. *ulima.edu.pe*
3. Avendaño Castro, W. R., & Velasco Burgos, B. M. (2021). Financial perceptions, knowledge, and skills in high school students. *Revista Venezolana de Gerencia*, 26(93 (2021)), 209-226. *ufps.edu.co*
4. Betancourt, N. C., & Álvarez, A. M. L. (2022). Water Strategy and Geopolitics in Latin America: A Strategic Intelligence Perspective. *Perspectives in Intelligence*. *revistascedoc.com*
5. Caicedo-Monserrate, D. L., Beltrán-Mora, M., Espinoza-Pambaya, O. E., & Cevallos-Cortez, S. A. (2021). Impact of accounting information on company decision-making. *FIPCAEC Scientific Journal (Promotion of multidisciplinary scientific-technical research and publication)*. ISSN: 2588-090X. Pole of Training, Research and Publication (POCAIP), 6(1), 162-172. *fipcaec.com*
6. Carvajal Grau, D. F. (2023). Impact of artificial intelligence on the development and quality of life of human beings. *usta.edu.co*
7. Cubillos, A. A. E. & Carmona, E. R. (2023). Multivariate statistical techniques used in the field of university social responsibility: a review of the state of the art. *Futurology*. *uac.edu.co*
8. Gutierrez, R. L. (2021). CHAPTER 4 STRUCTURED, SEMI-STRUCTURED AND FREE INTERVIEWS. CONTENT ANALYSIS. *Qualitative Research Techniques in the Health and Social Health Fields*, 171, 65. HTML
9. Iglesias, M. O. & Llorente, P. O. (2022). Cryptocurrencies, stablecoins, and the crypto-economy: the state of the art. Working Paper. *realinstitutoelcano.org*
10. Lara-Felix, J. H., & Cervantes-Aldana, J. (2023). The Repercussions of Covid-19 on Communication and Consumer Behavior: A Longitudinal Study of Generation Z. *Revista de Investigaciones Universidad del Quindío*, 35(1), 84-101. *uniquindio.edu.co*
11. Mamani Ruelas, A. H. (2023). Effectiveness of the Financial Intelligence Unit and the fight against money laundering. *ucv.edu.pe*
12. Martinez, V. A. C. (2023). Education and financial inclusion in the economically active population of the city of La Paz, department of La Paz, year 2023. *unitec.edu*
13. Moreno-Hernández, J., Campos-Molano, J., Medina-Betancourt, Y., & Poloche-Valencia, D. (2023). Artificial Intelligence as a Tool for the Detection of Tax Fraud: Colombia Case. *Economic Review*, 11(2), 25-35. *unl.edu.ec*
14. Núñez, C. R. (2020). Technological dependency, transnational corporations and artificial intelligence in Latin America. *unam.mx*
15. Parada Campillo, A. (2023). History and evolution of trade between Spain and Italy in the last century. *uva.es*
16. Quiroz Martinez, M., Aguilar Duarte, R. A., & Intriago Cedeño, D. B. (2020). Design process of a Big Data architecture for the analysis of large volumes of data and information. *Opuntia brava*, 12(1). *archive.org*

17. Rocha-Granados, S. C. (2022). ... of analytical processes having information as the main asset using data loading, extraction and transformation techniques for financial institutions. ucatolica.edu.co
18. Rodríguez, L. G. L., & Quiroz, C. E. G. (2024). Basic Education Career Management: An Approach to Educational Excellence. *Scientific Journal of Educational Innovation and Current Society "ALCON"*, 4(1), 37-48. soeici.org
19. Rojas Fernández, D. L. (2023). Financial education and its influence on the efficient management of the money of individuals in the Municipal Stop of Bagua Grande, Amazonas Peru, 2022. upa.edu.pe
20. Rubaceti, N. A. B., Giraldo, S. R., & Sepúlveda, M. Z. (2022). A literature review of Fintech and its main subareas of study. *Cuc*, 43(1), 83-100. cuc.edu.co
21. Sanchez, D. D. D., Brítez, M. Á. A., & Girett, V. A. R. (2023). Adoption of artificial intelligence in tax administrations. Literature review. *Journal of Economic Sciences*, 4(7), 19-29. unirioja.es
22. Silva Díaz, L. A. & Vargas Vilca, L. O. (2020). Financial education to improve the personal finances of teachers at Educational Institution N 00518 in the district of Yantaló, 2019. ucv.edu.pe
23. Solórzano-Hernández, R. G. (2022). Modification of the altman Z Score model: financial stability indicator. *Revista Tecnológica-Educativa Docentes 2.0*, 14(1), 36-42. scielo.org
24. Sucasaire Pilco, J. (2022). Guidelines for the selection and calculation of the size of the research sample. concytec.gob.pe
25. Terán-Yepez, E. & Guerrero-Mora, A. M. (2020). Theories of Entrepreneurship: A Critical Review of the Literature and Suggestions for Future Research. *Spaces Magazine*. revistaespacios.com
26. Zaga, F. A. R. (2023). Transformative implications of the Fourth Industrial Revolution on the labour market. *Newman Business Review*. epnewman.edu.pe