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Financial literacy and personal financial management in public administration students: a case study in Villa Serrano

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Financial education as an interdisciplinary field has been evolving in recent years in order to respond to contemporary organizational needs. This research aims to analyze how financial education influences the financial decision-making of university students, highlighting the urgency of curricular interventions adapted to local socio-economic realities. To this end, a metadata-based review of documents published over a period of 20 years (2005–2024) is generated, covering a total of 670 documents from the scientific database Scopus, "The metadata analysis allowed us to identify thematic trends in previous publications, serving as a basis for the design of the instruments applied in the fieldwork". In addition, given that the article presents a case study, structured surveys and semi-structured interviews were applied to assess financial knowledge, attitudes and practices of students of the Management and Public Administration degree at the San Francisco Xavier University of Chuquisaca, Villa Serrano campus, in financial education and personal economic management. The results reveal that 75% of the students have low credit knowledge and 80% face difficulties in saving, showing limited management skills and inadequate financial habits, and 83% of those surveyed expressed the need to incorporate financial education content into the university curriculum. At the same time, a specific programmer proposal was positively evaluated by experts in the field. These results highlight a critical training gap that could negatively influence students' economic decision-making skills in their future professional life. In this sense, it is concluded that the systematic integration of financial literacy programs in higher education is essential to foster economic autonomy, effective financial planning and the long-term well-being of future professionals.

KEYWORDS
decision-making, financial dependency, financial education, investment, learning, personal financial management, savings

1 Introduction

In an increasingly complex global economic landscape, it is essential to acquire financial literacy, which builds essential skills to make sound and judicious economic decisions. Financial literacy not only benefits the individual but also promotes the economic soundness of society by encouraging prudent financial habits, such as saving, investing and the correct use of credit (Lusardi and Mitchell, 2014).

In Latin America, multiple research projects have shown that young people have a poor understanding of finance, particularly university students, who face greater difficulties in managing their economic resources in a context of job instability and restricted access to formal financial services (OECD, 2020b). In Bolivia, this situation is most evident in rural or intermediate areas, where opportunities to improve financial literacy are very limited and economic dependence on the family remains a predominant trend.

University, as a complete educational environment, has an essential role to play in shaping the financial skills of tomorrow's professionals. However, in a large number of higher education programs, especially in fields that are not directly related to economics or finance, the inclusion of financial education topics is scarce or absent. This reality creates a gap in training that can impact financial autonomy, personal management and decision-making during and after university.

Financial education has established itself as an essential component of informed economic decision-making, enabling individuals to effectively manage their resources, plan for their future and reduce financial risks. Numerous studies have shown that low financial literacy is associated with poor decisions in key areas such as borrowing, saving and investing (Garg and Singh, 2018; Proscovia et al., 2021). This issue is especially critical in the university context, where students face relevant financial decisions without the necessary training (Agnew et al., 2018; Herawati et al., 2020).

In Bolivia, the limited formal incorporation of financial education content in university curricula limits the development of economic skills that are fundamental for young people's financial autonomy and well-being. In particular, students in the Management and Public Administration program at the Universidad San Francisco Xavier de Chuquisaca, Villa Serrano campus, show low levels of financial knowledge due to a strong family economic dependence and limited application of practices such as budgeting and savings planning. While research has shown that financial education programs can significantly improve financial literacy and personal financial management (Alkan et al., 2020; Clarabel et al., 2021), it has also been noted that even students in management-related careers are deficient in this area (Shanbhag, 2022). This paradox reveals the need to strengthen both the personal development and professional performance of future graduates, especially those who aspire to work in the public sphere.

In this context, the aim of this research is to analyze how financial education influences the financial decision-making of university students, providing empirical evidence to support the need to include this content in the academic training of public administration courses.

While international research on financial literacy has grown substantially over the past two decades, e.g., Lusardi and Mitchell (2014) and OECD (2022), most studies have focused on students in business, economics, or engineering programs, and primarily in urban or high-income contexts. In contrast, evidence from rural Latin America remains scarce, particularly regarding students in Public Administration, who are expected to manage public resources yet display significant personal financial gaps. This paradox highlights the originality of the Bolivian case: it not only documents low levels of financial literacy in a rural setting, but also exposes how structural dependence on family income, limited access to financial tools, and cultural factors shape financial behavior. By addressing this underexplored context, the study extends international debates on financial literacy beyond conventional populations and contributes to designing context-sensitive curricula for higher education in emerging economies.

To address this research gap, the primary objective of this study is to analyze the level of financial literacy and personal financial management practices among Public Administration students at a regional university campus in rural Bolivia, and to assess the need for structured curricular financial education interventions. The core contribution of the article is therefore empirical, grounded in a case study conducted at the Villa Serrano campus of the Universidad San Francisco Xavier de Chuquisaca.

The bibliometric and metadata-based review does not constitute an independent objective of the study, but rather serves a complementary and instrumental role. Specifically, it is used to contextualize the research within the international literature, identify dominant thematic trends, and inform the design of the empirical instruments applied in the fieldwork. This two-level approach allows the study to link global research patterns with local empirical evidence, while maintaining a clear focus on the case study as the central analytical component.

2 Theoretical framework

Financial education has been a topic that has positioned itself as one of the most important tools within the educational context, as it allows for significant progress in terms of personal growth. Likewise, given that it contemplates multiple possible scenarios, ranging from the contribution of empirical knowledge to its different modes of application in practice.

The Organization for Economic Co-operation and Development (OECD, 2012) defines financial education as a process by which consumers and financial investors improve their understanding of financial products, concepts and risks and, through information, instruction and/or objective advice, develop the skills and confidence to become more aware of financial risks and opportunities, make informed decisions, know where to turn for help and take other effective actions to improve their financial well-being.

This study is theoretically based on the Theory of Planned Behavior (TPB) proposed by Ajzen (1991), which is one of the most robust frameworks for explaining individual financial behavior. According to this theory, behavior is mainly determined by behavioral intention, which is shaped by three components: attitude toward behavior, subjective norms and perceived behavioral control.

In the field of financial education, financial knowledge and skills directly influence the formation of favorable attitudes toward saving, budgeting and responsible use of credit. Likewise, economic dependence on the family environment, particularly relevant in rural contexts such as Villa Serrano, influences the configuration of subjective norms, reinforcing or limiting students' financial autonomy.

For its part, perceived behavioral control, closely linked to financial self-efficacy, is strengthened through structured financial education training processes, enabling students to transform their intentions into effective financial behaviors. From this perspective, financial education is not limited to the transmission of knowledge, but acts as a mechanism that enhances perceived control and the capacity for informed economic decision-making.

Complementarily, this study adopts the financial capability approach developed by organizations such as the OECD and the World Bank (Xiao and O'Neill, 2016; OECD, 2022), which broadens the concept of financial literacy by integrating not only knowledge but also practical skills, attitudes, financial behaviors and effective access to financial products.

From this perspective, the low levels of budgeting, saving and knowledge of credit products observed among students in Villa Serrano are not solely due to information deficits, but also to structural and contextual constraints that limit the effective application of financial knowledge. In this sense, financial education acts as an enabling factor that strengthens financial capacity and promotes more autonomous and sustainable economic management.

However, over the years, this theoretical conceptualization has undergone various adaptations, as it is necessary to keep the different frameworks on which financial education is based up to date (OECD, 2022). Furthermore, and in relation to the above, it is essential to highlight the role of the World Bank within this type of knowledge analysis, as this institution allows for the recognition of the existence of financial capability, which is able to include and contribute in both empirical and practical ways to the study, to the extent that it includes the skills and knowledge necessary for people to have the ability to correctly access financial services (Achew et al., 2021). This allows the study to characterize the key understanding factors in financial education from the processes of planning, organizing, managing and controlling financial scenarios possible within different settings, whether individual or group (Billingsley et al., 2016). In order to understand the concept more easily, it is necessary for individuals to understand the definition of budgeting, saving and investing, which, as analyzed by Xiao and O'Neill (2016), enable a better interaction of finance with personal financial planning.

Financial education has historically been a cross-cutting issue, in which a special emphasis on memorization and conceptual understanding is recognized (Olin, 2014). In addition, as the author explains, it has become evident that financial literacy within the comprehensive financial plan has presented many challenges in which a pattern is recognized in terms of the complexity of understanding basic concepts.

Likewise, literacy has been one of the greatest limitations when it comes to managing financial resources, given the large number of people who do not recognize different basic terms. In this regard, Lusardi and Mitchell (2014) consider that the lack of financial education generates little ability to make decisions based on a lack of economic information, which, in turn, is limiting financial planning in the short and long term, affecting liquidity, wealth accumulation and debt. Similarly, Mishra et al. (2024) reiterate the importance of financial education in growth areas, especially in emerging economies.

It is important to highlight that financial education is approached from various theoretical perspectives that attempt to explain and improve financial decision-making. Initially, Thaler (2015) emphasizes one of the most evident problems in terms of literacy, where it is stated that there are different people who deviate given the various cognitive biases, in which loss aversion stands out, mainly.

Likewise, Fernandes et al. (2014), recognize the role of financial education in the perspective of valuing essential elements, which are minimum impulses that contribute, in a broad and exemplary way, to financial decision-making within individuals.

According to Lusardi and Mitchell (2023), one of the key tools for managing financial education is the knowledge of a fixed and variable objective, around which the transcendental skills of each individual constantly revolve. These can be oriented toward economic well-being, promoting new rational perspectives on decision-making, considering rationality in savings, investment and retirement planning.

Likewise, Frees et al. (2024) emphasize the importance of individuals receiving sound and enjoyable financial education, which can have an immediate and direct effect on improving financial health, particularly with sound and properly stipulated structures. Khare and Kapoor (2024), consider that informed decision making considerably minimizes financial risks, while argues that decision making needs to be managed and promoted to be useful in the common life cycle.

Núñez-Letamendia et al. (2021) conclude in their study that household savings may follow several common flow patterns, which is argued by the biases presented by uncertainty and longevity. Next, Décaro Santiago et al. (2024) propose a broader analysis of the life-cycle hypothesis, where it is shown that it is consistent with informed decision-making, despite the existing limitations on financial literacy.

In terms of the educational approach, Amagir et al. (2018, 2020) recognizes the specialty of teaching and learning processes in the pursuit of financial literacy, acknowledging that when done actively, they advocate the development of integrated and practical competencies to enable the transmission of knowledge. Furthermore, active learning methods can be useful in enabling individuals to effectively recognize economics (Zapata-Lascano et al., 2024).

On the other hand, financial literacy is a multidimensional construct. The International Network on Financial Education (OECD, 2022), proposes a framework that assesses three interconnected components, first identifying financial knowledge, which involves the understanding of basic as well as advanced financial concepts. In this way, Abdillah Akbar and Sutrisno (2024) link financial literacy to better financial planning among young people, recognizing aspects of inflation, risk diversification, among others.

As analyzed by Castro-González et al. (2020) it is also important to recognize financial attitudes and perceptions, which are considered a predictor of financial behavior, as well as allowing a better orientation toward the future and creating confidence in the ability to make decisions. Then, in the third position, we refer to economic practices and behaviors, which are understood as all actions put in the sense of elaboration and follow-up. For this reason, Susilowati et al. (2020) found that positive financial behaviors are significantly influenced by financial literacy.

In turn, university students constitute a demographic group for financial education interventions, as they are in a transitional stage toward greater financial autonomy and responsibility. This is why different studies have identified this population as one of the most affected by their low financial literacy. Thus, the PISA survey (OECD, 2020a) reveals important data to demonstrate the effects on this group of people, where it highlights that students in the age range of 15 years are those who, mostly, fail to achieve a basic level of financial competence (p. 2).

This led Khalisharani et al. (2022) to identify certain limitations for young university students, starting with the economic dependence to which the vast majority must adhere, as many depend on the income provided by their parents, which, together with the little expertise they possess for the correct management of their finances, is largely consolidated by the poor understanding of the responsible use of money (Xiao and Porto, 2017).

Figure 1 shows how education promotes economic autonomy (Serido et al., 2010; Proscovia et al., 2021; Kaiser et al., 2022):

Another of the most evident problems is related to the lack of expertise in terms of financial skills among this population. It is evident the excessive indebtedness that these people may have because they do not know the useful tools for managing their money, where they tend to acquire, irresponsibly, credit lines or consumer loans that, in the future, become unfavorable situations (Lim et al., 2014). To this it is relevant to include elements related to compulsive consumption, the rise of digital marketing and social pressure, aspects that generate increased spending (Herawati and Dewin, 2020).

However, gender gaps are also evident where women tend to have lower levels of knowledge of the financial world, less than men who, apparently, are better able to consider this type of situation in their daily lives, although this is always influenced by different external agents, such as the cultural context or the use of certain tools or indicators (Grohmann, 2018; Lusardi, 2019). In addition, there are also perceived limitations for people who have grown up in settings where the socio-economic environment is poorer, which furthermore causes limitations in education (Bottazzi and Oggero, 2023). Geographic gaps, both between and within countries (urban vs. rural), are also evident, often linked to access to formal education and financial services (OECD, 2023).

Also, more recent research in university settings, such as Potrich et al. (2024) in Brazil, or Khurshid et al. (2024) in Pakistan, reveal levels of financial literacy that could be considered insufficient for complex decision-making. These findings are consistent with the "low level of financial literacy among participants" in the Villa Serrano study, and with Agnew et al.'s (2018) report of low levels among young adults. Garg and Singh (2018) also associate this low literacy with poor decision-making, underscoring the criticality of the problem.

It is paradoxical that students in economics, business or management-related careers, who would be expected to have greater exposure to financial concepts, do not always demonstrate higher levels of personal financial literacy. As stated by Herawati et al. (2020), cited in the background paper, he already pointed out this situation for accounting students. It is also relevant to consider studies such as that of Jayaraman and Jambunathan (2018) in India, which reveals an important gap in professional training, as many students, mostly focused on business-related careers, demonstrate that the theoretical knowledge provided by institutions does not manage to supplement the development of their basic competences to continue with responsible financial behavior.

The Theory of Planned Behavior (Ajzen, 1991) is a widely used framework for explaining financial behavior. It posits that behavioral intention is shaped by three antecedents: attitude toward the behavior (the individual's positive or negative evaluation), subjective norms (perceived social pressure to perform or not perform the behavior), and perceived behavioral control (the perceived ease or difficulty of performing the behavior).

Studies such as Klontz et al. (2019), have applied CCT to explain savings behaviors in young people. The "strong economic dependence on the family environment" observed in Villa Serrano could significantly influence the subjective norm and the perceived behavioral control of students, making it possible to see how financial education can strengthen perceived behavioral control by improving knowledge and skills.

Therefore, it is essential to highlight the influence that behavioral approaches and cognitive biases have on the necessary foundations for adequate financial education. In this regard, Fernandes et al. (2014) manage to carry out a methodological review on the topic under study, concluding that there are several situations in which it is emphasized that there is overconfidence on the part of people, which is also creating discrepancies in terms of their meaning in the face of financial loss (Shanbhag, 2022). In the same way, Kaiser and Menkhoff (2017), make a call for the need to lay new foundations that allow improvements in terms of behavioral elements, in order to limit the cognitive deviations that could not be generated. Therefore, it is emphasized that financial education does not only refer to these theoretical bases and with a view to technical knowledge, but also to the importance of applying them to behavioral economics, influencing adaptation.

Adapting to the findings from Ajzen's (1991) study, three elements can be recognized as intrinsically involved in financial education, highlighting attitude toward behavior, subjective norm and perceived behavioral control. Thus, financial education strengthens perceived behavioral control, which increases the intention and effective action to save (Klontz et al., 2019).

It is important to recognize that several Latin American countries have implemented National Strategies for Financial Inclusion and Education (ENIEF), following recommendations from organizations such as CAF and the OECD, Initiatives in countries such as Mexico [Comisión Nacional para la Protección y Defensa de los Usuarios de Servicios Financieros (CONDUSEF), 2022], Colombia (Castaño et al., 2020), seek to integrate financial education into school curricula, offer programs for adults and improve the transparency of financial products. However, the implementation and effective impact of these strategies vary, and rigorous evaluation of programs remains an area for improvement.

In Bolivia, the Financial System Supervisory Authority (ASFI) has been the main promoter of financial education initiatives, mainly aimed at users of the financial system. Law No. 393 on Financial Services establishes the need to promote financial education. However, systematic integration into the formal education curriculum, both at school and university level, still seems to be limited. Previous studies specifically on the financial

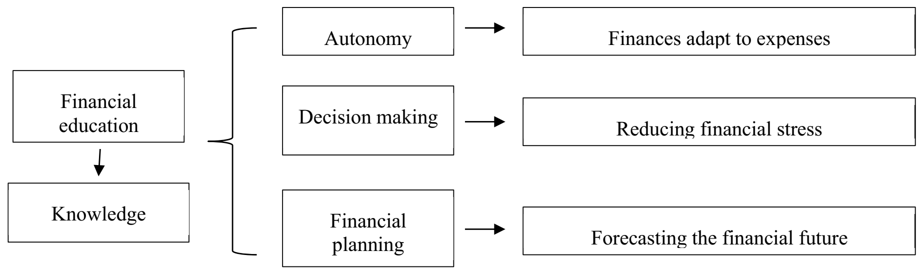

FIGURE 1
Education promotes economic autonomy. *Source* Based on Serido et al. (2010), Kaiser et al. (2022), Proscovia et al. (2021).

literacy of university students in Bolivia, and particularly in regional centres such as Villa Serrano, are scarce. Research such as that of Zambrano-Farías et al. (2021), on micro-entrepreneurs in Bolivia, although not focused on students, shows the need to strengthen financial capabilities in the country.

However, the Bolivian rural context presents persistent structural barriers that directly affect the possibility of implementing effective financial education programs. The country's rural communities face severe limitations in terms of educational infrastructure: many schools operate in precarious conditions, without access to basic services such as electricity, potable water or internet, which restricts not only traditional teaching, but especially the incorporation of digital and financial content (Fabricant, 2010). According to data from the National Institute of Statistics (INE), only 26 % of rural households have access to the internet, compared to more than 80 % in urban areas (INE, 2023), which deepens digital and therefore financial exclusion. This structural gap also translates into educational inequalities: indigenous and rural students in Bolivia achieve on average only 5.9 years of schooling, compared to 9.6 years for their non-indigenous urban peers (Pérez, 2020, p. 57).

In addition, school dropout rates among these groups reach critical levels, with 42.4 % of the indigenous population dropping out of primary school, compared to 17.6 % among non-indigenous people (ECLAC and CEPAL, 2018, p. 88), These conditions not only affect academic training but also have a direct impact on people's economic capabilities. Recent studies have shown that lack of education limits informed financial decision-making, while interventions such as access to microcredit and female empowerment have been successful in improving child schooling in rural contexts, showing the interdependence between human capital, financial inclusion and local development.

Similarly, universities play a key role in promoting financial literacy, not only for students in economics programs, but for the entire student community. They can achieve this through the inclusion of compulsory or elective courses, workshops, extra-curricular programs and the cross-cutting integration of financial content in various subjects (Opletalová, 2015).

Thus, financial education has proven to be an essential tool for those who are in the process of training in public administration, since they are the ones who should be responsible for making efficient decisions that promote welfare.

Moreover, financial literacy transcends personal management but also plays a fundamental part in the ability of public managers to analyze and understand public budgets, promote fiscal transparency, while assessing the feasibility of policies, and manage resources effectively and efficiently. Ultimately, this enables management to become a cross-cutting competence while making decisions that are both accountable, effective and equally ethical toward the sector. As for the students of Villa Serrano, those graduates in Management and Public Administration should be involved in different roles in understanding financial principles while formulating public policies taking into account economic implications, while having an oversight of financial entities as regulatory bodies, which ensure the proper management of resources in social programs. Therefore, public sector competencies are in greater demand with the passage of time, so having the ability to perform financial analysis is crucial, which, without it, can lead to a limitation in professional effectiveness.

The incorporation of financial literacy in curricula is an important asset for both professional and personal life, as it is a relevant and necessary skill that improves financial well-being and better prepares professionals for their future responsibilities. In this sense, having curricula and courses specifically designed to improve these skills can reduce and eradicate financial literacy, which is a growing problem in society (Borden et al., 2008).

According to Mandell and Klein (2009), there are several examples of the integration of financial education into the curriculum, the most prominent being in the United States, where the inclusion of financial content in schools has been implemented thanks to an initiative called Jump$tart Coalition for Personal Financial Literacy, which has made it possible to include this knowledge between secondary and tertiary (university) education, which has brought positive results in three main areas: personal budgeting, savings indicators and credit management. On the other hand, we have the National Consumer and Financial Literacy Framework, an initiative that arose in Australia with the same purpose as its US counterpart, which, from basic education, trains students in financial skills that foster good citizen development and effective and responsible economic participation (ASIC, 2011). Other examples, such as that of Canada, show the evolution of financial education, since in this country it has become an obligation in certain provinces of the country, which demonstrates how its institutionalization makes it possible to reduce knowledge gaps from an early age, while developing technical knowledge and

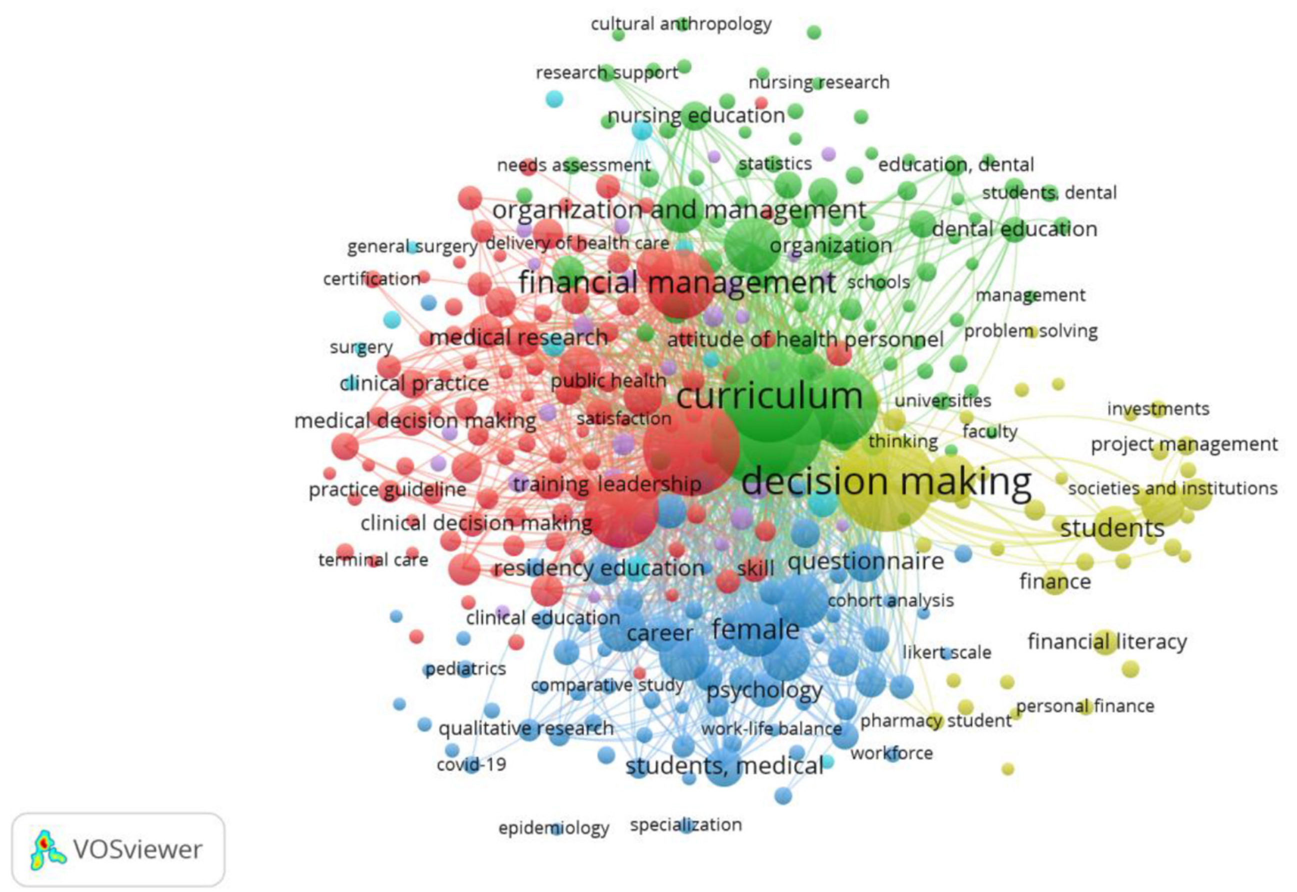

FIGURE 2
Cooccurrence network map. *Source* Own elaboration based on VOSviewer 2025.

critical and autonomous thinking in the youngest students (OECD, 2020b).

By conducting a literature review through a bibliometric analysis of the concept of financial education from the cognitive, behavioral and attitudinal dimensions, we identified research oriented toward the financial well-being of young university students who are in transition to an independent sphere.

Figure 2 identifies a keyword co-occurrence network map produced using the VOSviewer tool. In this, 343 elements are recognized, with 6 clusters of different color where they are all connected, together with 19,570 links.

Now, in Figure 3, this visualization shows that the word "decision-making" appears as the most prominent term, with a high density of connections that exceed those of other keywords, indicating its centrality in the network. Closely related, the concepts of "curriculum" and "financial management" also stand out with strong linkages, suggesting that they are crucial in the discussion of financial education and organizational learning. Furthermore, terms such as "students", "financial literacy", and "project management" appear highly relevant, reflecting the importance of integrating financial knowledge into educational processes and professional training. Overall, the clusters demonstrate that financial education is strongly associated not only with decision-making processes but also with curriculum design, institutional management, and the development of competencies for students and health professionals.

In the heat map elaborated from the VOSviewer tool, the keywords most frequently associated in the research are identified, with "decision making", "curriculum", and "financial management" emerging as the central terms with the greatest concentration of links. Surrounding them, concepts such as "students", "financial literacy", and "project management" appear highly relevant, indicating the convergence between education, financial competencies, and institutional management. The visualization demonstrates that studies in this field emphasize the interaction between decision-making processes, curricular structures, and the integration of financial education as a key element for both academic and professional development.

Figure 4 shows aspects related to financial education for decision-making in university curricula. A total of 397 documents from 258 sources were identified, reflecting the contributions of 2,861 authors working on the topic. The field shows an annual growth rate of 6.09%, indicating a steady increase in publications over time. Furthermore, 3,127 keywords were used by the authors, evidencing the thematic richness and importance of the subject. Collaboration is also significant, with 11.08% of works produced through international co-authorship and an average of 10.2 co-authors per document. Finally, the documents present an average

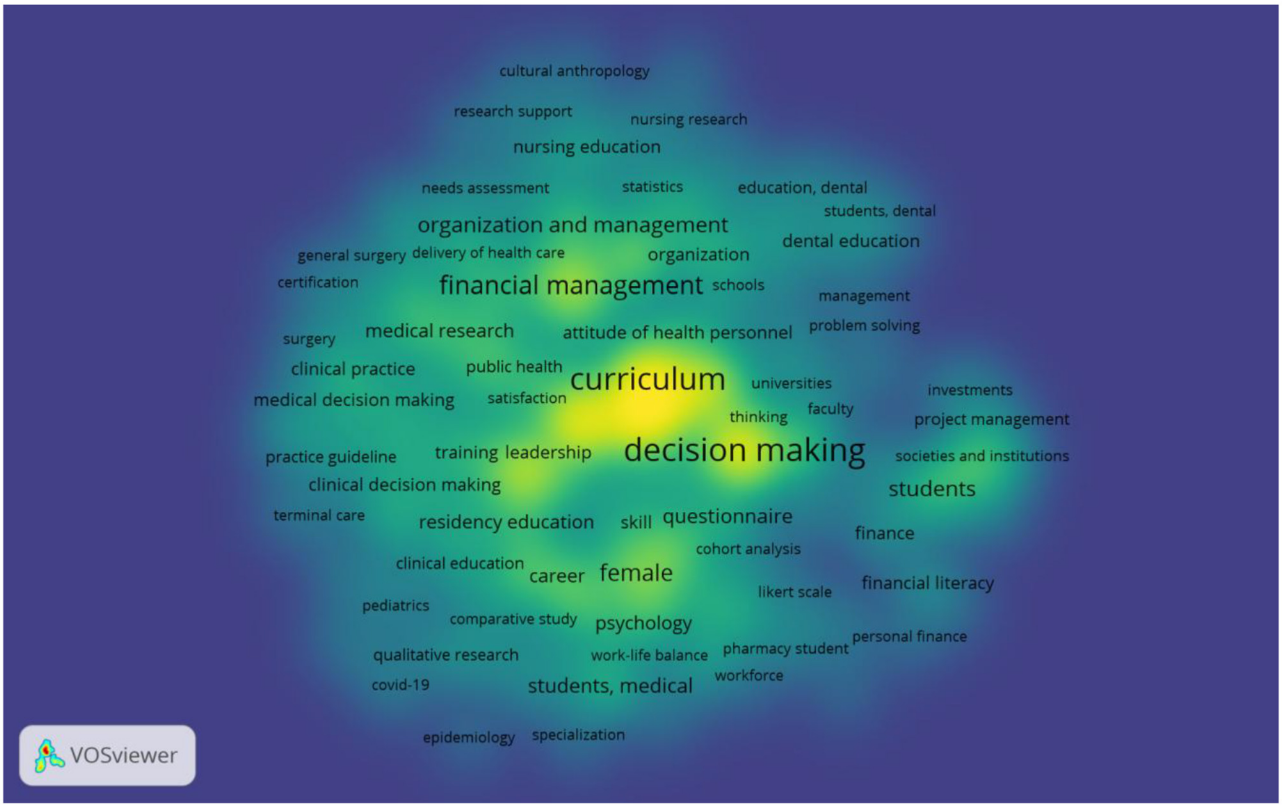

FIGURE 3
Heat map of keyword co-occurrence used by authors. *Source* Own elaboration based on VOSviewer 2025.

FIGURE 4
Key information on financial literacy in decision making. *Source* Own elaboration based on Bibliometrix 2025.

age of 12.3 years and receive on average 14.95 citations per publication, confirming the relevance and academic impact of the research.

Then, Figure 5 shows the annual scientific production from 1972 to 2025, evidences a gradual increase in research on financial education and decision-making. In the early years, production was minimal, with almost no articles published until the 1990s. From the 2000s onwards, a steady upward trend is observed, with some fluctuations but maintaining a general growth. The most significant peak appears in 2024, with close to 40 published articles, marking it as the year with the highest scientific production on the topic. Although there is a slight decline in

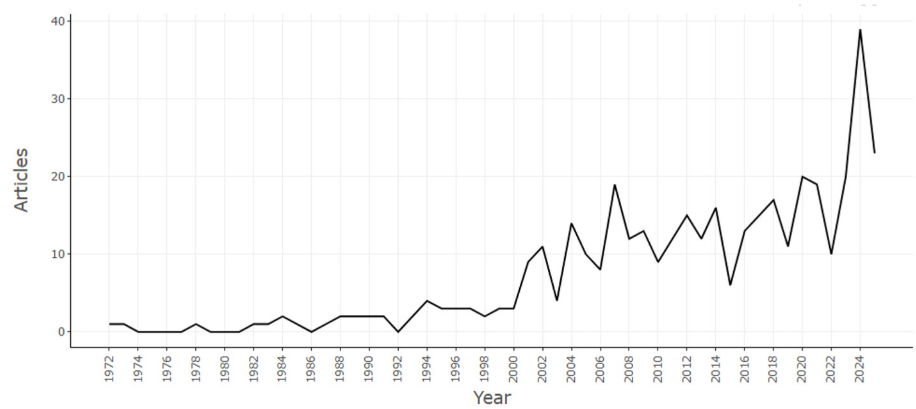

FIGURE 5
Annual scientific growth. *Source* Own elaboration based on Bibliometrix 2025.

FIGURE 6
Most relevant affiliations. *Source* Own elaboration based on Bibliometrix 2025.

2025, the overall trend confirms the growing academic interest in this field.

Figure 6 shows the most productive institutions in terms of scientific output related to financial education, curriculum, and decision-making. The University of California leads with 23 articles, consolidating its role as the main contributor in this field. It is followed by Case Western Reserve University with 20 articles and The Aga Khan University with 14 articles, showing significant participation in the research.

Other institutions also demonstrate an important contribution, such as Universitas Pattimura (12 articles), East Carolina University (11 articles), McMaster University (11 articles), and Texas A&M College of Dentistry (11 articles). Meanwhile, Vanderbilt University Medical Center (10 articles), NUS Yong Loo Lin School of Medicine (9 articles), and the University of Toronto Faculty of Medicine (9 articles) also appear within the top contributors.

The data highlights the predominance of universities from North America, although the presence of Asian institutions like The Aga Khan University and NUS Yong Loo Lin School of Medicine suggests growing global interest in the subject. This distribution reflects how research in financial education and decision-making is both multidisciplinary and geographically diverse, with strong leadership concentrated in U.S. institutions.

Figure 7 then identifies the main countries with the greatest scientific production in financial education for decision-making, highlighting the United States with 613 documents published on the subject. However, it is also evident, in a slightly lighter shade, India with 29 documents contributed to the line of research. However, it is important to highlight the participation of Latin American countries such as Colombia and Brazil, who are also major influencers with 11 and 14 documents published, along with Mexico with 18.

It is worth highlighting that, in Latin America—and in Bolivia in particular, despite the existence of government initiatives, the systematic and evaluated incorporation of financial education in higher education, especially in regional contexts, is still incipient and poorly documented. The economic dependence on the family environment and the low adoption of sustainable

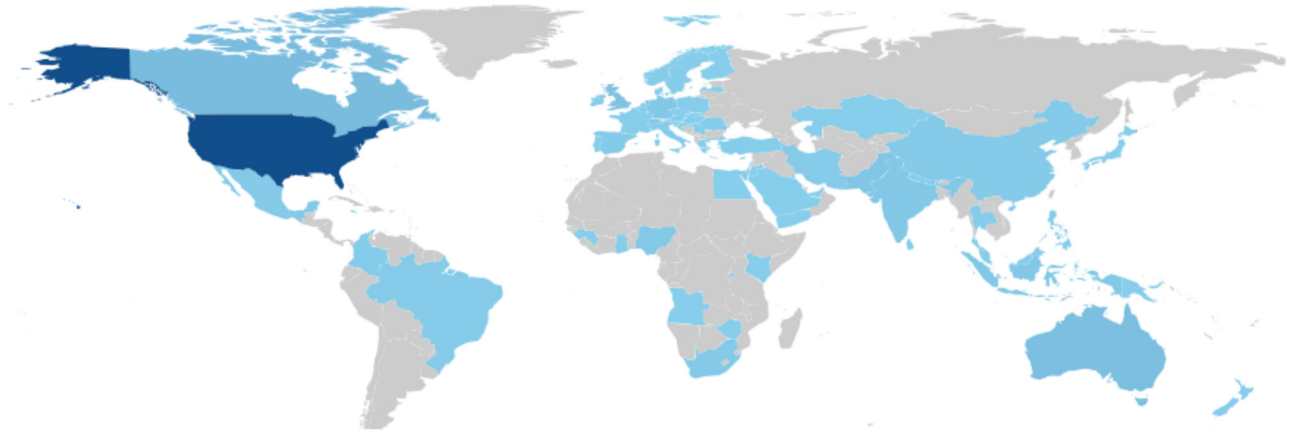

FIGURE 7
Scientific production by country. *Source* Own elaboration based on Bibliometrix 2025.

financial habits observed in Villa Serrano are evidence of this educational gap, which could affect the economic decision-making of future professionals.

3 Methodology

Based on this research logic, the study adopts an integrated but sequential design. First, a bibliometric and metadata analysis is conducted to map the international academic landscape on financial education and decision-making. Second, and as the main analytical component, an empirical case study is developed to examine financial literacy levels and practices among university students in a rural Bolivian context.

This study adopts a mixed-methods approach with a sequential explanatory design. The methodological strategy combines a preliminary bibliometric and metadata analysis with a subsequent empirical case study. The first phase provides a contextual and conceptual foundation, identifying dominant research trends and informing the construction of the survey and interview instruments. The second phase constitutes the core of the study and involves the collection and analysis of quantitative and qualitative data from students enrolled in the Public Administration programme at the Villa Serrano campus.

This integrated design strengthens methodological rigor by ensuring alignment between theoretical insights from the literature and empirical measurement, while allowing for contextualized interpretation of financial literacy in a rural university setting.

This study is justified by the need to diagnose, validate and deepen, provide evidence-based inputs and finally, contribute to the comprehensive training of future public servants. Firstly, the level of financial education and personal economic management practices of students in the Management and Public Administration program at the San Francisco Xavier University of Chuquisaca (Villa Serrano campus) will be accurately diagnosed, providing empirical evidence in a context that has been little studied. Secondly, the need for an educational intervention will be validated and deepened, supported by the high student demand (83%) and by the expert assessment of the program proposal, as detailed in the summary. Third, evidence-based inputs will be generated to design and implement relevant and effective financial education programs that address the identified gaps (budgeting, use of credit products and investment instruments). Finally, it will contribute to the comprehensive training of future public servants, strengthening crucial competencies both for their personal financial well-being and for ethical and efficient performance in the management of public resources and institutions.

The project was approved by the Research Ethics Committee of the University of San Francisco Xavier (USFX) on 8 February 2023, in compliance with ethical standards established at both the institutional and international levels. Participants provided their informed consent freely and voluntarily, with full assurance of their right to withdraw at any time. Furthermore, anonymization and secure information storage procedures were implemented to protect data confidentiality. As this was a low-risk study, no adverse incidents were reported, confirming strict adherence to current ethical principles.

This research is relevant because it generates knowledge that, in addition to being systematically integrated into the university curriculum in financial education, seeks to strengthen students' economic autonomy and long-term well-being through financial planning that prepares them to face both personal and professional challenges.

Based on the above, it is hypothesized that the structured and contextualized incorporation of financial education programs in the Management and Public Administration curricula—particularly at the Villa Serrano campus—will significantly improve competencies for rational and informed economic decision-making and for the responsible management of personal and public resources, reducing the economic dependence on the family environment observed in a large part of the student body. This hypothesis assumes that financial literacy has an impact not only on the individual level, but also on the efficiency and ethics of professional practice, especially in contexts where graduates will assume roles of planning, execution and control of public expenditure. Consequently, by

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providing empirical evidence on the educational shortcomings and student perceptions of these contents, the study not only diagnoses the current situation, but also proposes a concrete path of educational intervention with academic, professional and social impact.

The study adopts a mixed methods approach with a sequential explanatory design, with the objective of comprehensively analyzing the levels of financial literacy and personal economic management practices among students of the Public Administration program at the Universidad San Francisco Xavier de Chuquisaca, Villa Serrano campus. In the first quantitative phase, a structured questionnaire was applied to a representative sample of students, selected by stratified proportional sampling by academic year. The instrument, developed from previous validated studies (Proscovia et al., 2021), included items on budgeting, saving, investing and borrowing, as well as a Likert scale to assess financial attitudes and behaviors.

In addition, an objective financial literacy test was administered, with multiple-choice questions designed to measure conceptual understanding and the ability to apply it in practical scenarios. Both instruments were pilot tested to ensure their reliability and internal validity (Cronbach's alpha > 0.7).

In the second, qualitative phase, semi-structured interviews were conducted with an intentional subset of students, selected based on criteria of variability in their quantitative results and academic level, in order to delve deeper into their perceptions, experiences and barriers related to financial management. The qualitative data were analyzed by thematic coding using specialized software (NVivo), which allowed the findings to be triangulated and strengthened the interpretation of the quantitative results.

The integration of both approaches seeks to offer a richer and more contextualized understanding of the phenomenon studied, as well as to provide empirical evidence for the design of educational interventions aimed at strengthening financial literacy in university contexts.

To ensure relevance and validity, survey and interview items were adjusted to reflect local socioeconomic and educational conditions. Technical financial terms were replaced with everyday expressions used in the region, examples related to predominant economic activities such as agriculture, family businesses, and microenterprises were incorporated, and response scales were simplified to facilitate understanding by students with less exposure to formal financial concepts. In addition, pilot tests were conducted with small groups of students to verify the clarity of the questions, and suggestions were gathered from teachers and local experts, which allowed for refinement of the language and ensured that the instruments accurately reflected the cultural and educational reality of the rural context. These adjustments strengthened the validity of the study and ensured that the findings were representative and culturally sensitive.

The scales used in the surveys were validated in order to verify the internal structure of the constructs measured (financial knowledge, attitudes and practices) and ensure that the items consistently fit the proposed theoretical dimensions. This procedure demonstrated the statistical soundness of the instruments and ensured that the measurements adequately reflected the students' financial competencies.

Thematic validation was carried out with experts in financial education and public management, who reviewed the items to confirm their cultural and contextual relevance in the rural environment of Villa Serrano. This allowed the language to be adjusted, examples linked to the local socio-economic reality to be incorporated, and ensured that the questions were understandable and relevant to the participants.

The incorporation of these methodological procedures will strengthen the internal consistency of the study, increase the credibility of the findings, and ensure that the results respond rigorously and contextually to the specific conditions of the Management and Public Administration students at the Villa Serrano campus in rural Bolivian environments, providing solid empirical evidence for future curricular interventions.

3.1 Instrument validation and analytical decisions

Although confirmatory factor analysis (CFA) is commonly recommended to assess the internal structure of measurement instruments, it was not applied in this study due to methodological and contextual considerations. First, the final sample size ($n = 100$), while adequate for descriptive and exploratory purposes, did not meet the recommended thresholds for robust CFA estimation, particularly given the multidimensional nature of the constructs assessed (financial knowledge, attitudes, and practices). Second, the primary objective of the study was diagnostic and applied, aiming to identify educational gaps and contextual patterns rather than to validate a new psychometric scale. Therefore, instrument reliability was assessed through internal consistency measures (Cronbach's alpha > 0.7), complemented by pilot testing and expert-based validation procedures. This combination is consistent with methodological approaches used in applied financial literacy research conducted in small or rural populations, where sample size and contextual specificity limit the feasibility of more complex latent-variable modeling.

3.2. Target population, sample size and representativeness

The target population consisted of all undergraduate students enrolled on the Public Administration programme at the University of San Francisco Xavier—Villa Serrano campus during the 2023 academic year ($N = 195$). To ensure the sample was representative of the different academic levels and genders, stratified random sampling was applied. This method enabled the sample to be distributed proportionally according to the characteristics of the population.

The minimum sample size was calculated based on a recognised statistical criterion. The minimum sample size was determined by applying the corresponding statistical criterion for finite populations, ensuring a confidence level of 95% and a margin of error of 5%.

$$n = \frac{z^2\, p\, \left(1 - p\right) N}{e^2\, (N - 1) + z^2 p(1 - p)}$$

Where:

- $N = 195$ (population size).
- $z = 1.96$ (95% confidence level)
- $p = 0.5$, $q = 0.5$ (maximum variability)
- $e = 0.05$ (margin of error)

Substituting the values:

$$n = \frac{(1.96)^2 * 0.5 * 0.5 * 195}{(0.05)^2\,(195 - 1) + (1.96)^2 * 0.5 * 0.5}$$
$$n = \frac{3.8416 * 0.25 * 195}{0.0025 * 194 + 3.8416 * 0.25}$$
$$n = \frac{187.296}{0.485 + 0.9604}$$
$$n = \frac{187.296}{1.4454}$$
$$n = 129.6$$

Substituting the values yielded an estimated required sample size of approximately 130 students. However, data were only collected from 100 students, representing 51.28% of the total population. This decision was made for logistical and accessibility reasons, while maintaining proportionality within the strata defined by academic year and gender.

A margin of error of 5% was used in the stratified sampling and the strata were defined according to the population proportions by academic year and gender. A *post-hoc* test showed no significant differences in the sample's distribution with respect to the population ($p > 0.05$), indicating that the sample did not differ significantly from the population ($\chi^2 = 2.14$, $gl = 5$, $p > 0.05$). This supports the representativeness of the sample.

It is acknowledged that the final sample is below the statistically required threshold. This situation can be explained by the specific conditions of the rural context of Villa Serrano, where the student population studying Management and Public Administration is limited and voluntary participation depended on socio-economic factors and the students' availability.

It should be noted that this restriction affects the statistical power of the study, reducing its ability to detect small effects with high reliability. It should also be noted that the generalization of the results was limited to the particular context of the Villa Serrano campus.

Nevertheless, it should be emphasized that the combination of quantitative (surveys) and qualitative (interviews) techniques allowed for the triangulation of findings, contributing to internal validity and interpretative richness. This methodological transparency will strengthen the credibility of the study and show that, despite the limitation in sample size, the results offer significant and contextualized evidence to support the need for financial education programs in rural university settings.

Given the rural and socioeconomically distinctive context of Villa Serrano, particular attention was paid to the cultural adaptation of the research instruments. Survey and interview items were not directly transferred from previous studies but were contextually adjusted to reflect local linguistic usage, economic activities, and everyday financial practices. Technical financial terminology was replaced with commonly used expressions in the region, and examples were drawn from familiar contexts such as agriculture, family-based economic activities, and microenterprises. In addition, the instruments were reviewed by local faculty members and experts in financial education and public management to ensure semantic clarity, cultural relevance, and appropriateness for students with limited exposure to formal financial concepts. Pilot testing with small groups of students further allowed for the refinement of wording and response formats. These procedures strengthened the contextual validity of the instruments and ensured that the data collected accurately reflected the financial knowledge, attitudes, and practices of students in a rural Bolivian setting.

4 Results

According to the study, there is a growing interest in understanding professional financial issues, specifically money management, which is seen as essential to improving quality of life. However, there is an acknowledged gap in financial literacy among young adults, with concerns that current education systems do not adequately prepare them to manage their personal finances.

Financial education is increasingly recognized as a key objective of development policies, with programs designed to improve economic outcomes and financial behavior; however, empirical evidence, particularly where incomes are low, remains limited.

Comprehensive financial education programs in schools have been shown to have positive effects, increasing students' financial competence and improving their academic performance. The implementation of financial education programs can generate positive changes in behavior, especially in Latin America, where such programs have demonstrably influenced financial habits.

Integrating financial education into school curricula is vital to equip students with the necessary skills to deal with the complexities of personal finance and contribute to a more financially literate society.

Financial literacy is an essential skill for participation in the contemporary economy, guiding educational, employment and retirement decisions. As financial choices have long-term effects, financial education is key to wealth formation. However, a lack of basic knowledge persists in large parts of the population, resulting in sub-optimal decisions and potential financial difficulties.

Hence, initiatives to promote financial literacy are emerging globally, as governments and organizations recognize the importance of empowering people to make sound financial decisions.

The results obtained in the research reflect an urgent need to implement financial education programs in the Villa Serrano branch of the Faculty of Economics and Business Studies at the San Francisco Xavier University of Chuquisaca. The most relevant findings are analyzed below:

4.1 Level of financial knowledge

Most of the students surveyed have a low level of financial literacy, according to Figure 8. Eighty-four percent report having few financial literacy skills, and 78% know very little about the

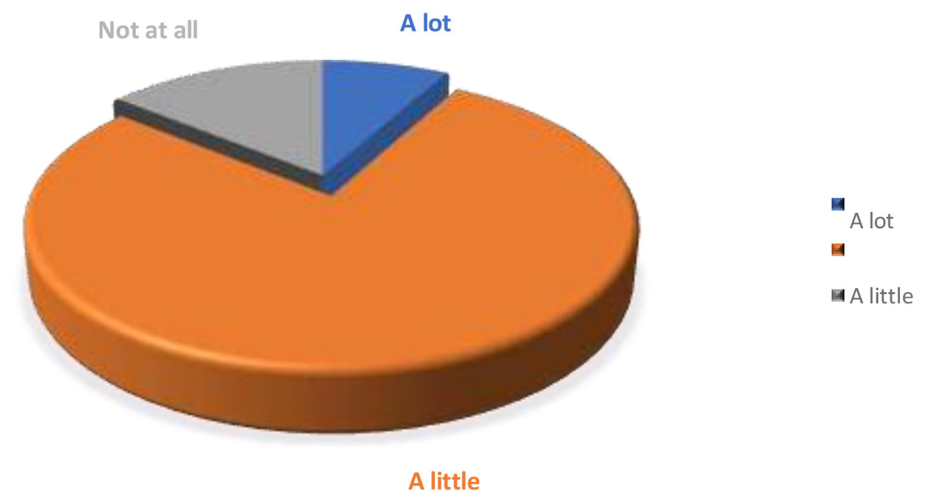

FIGURE 8
Implications of short- and long-term savings. *Source* Own elaboration.

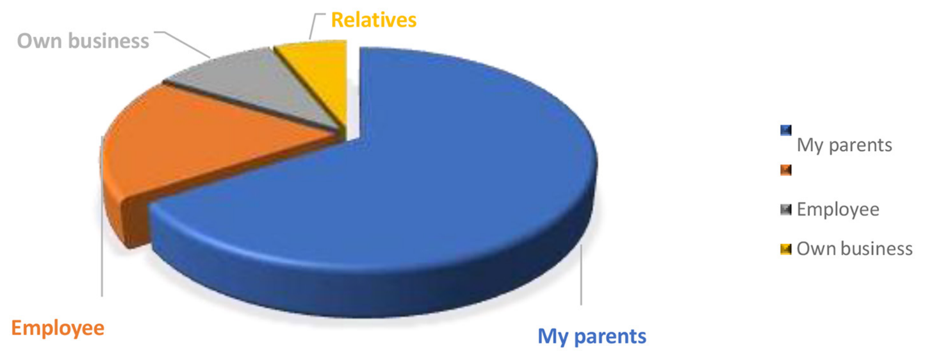

FIGURE 9
Source of income. *Source* Own elaboration.

implications of short- and long-term savings. This is evidence of a significant gap in financial literacy, which could limit their ability to make informed financial decisions in the future.

4.2 Sources of income and difficulties to save

Sixty-six percent of students are financially dependent on their parents, and 80% find it difficult to set aside money for savings. This reflects economic dependence and a lack of healthy financial habits. In addition, income is mainly spent on food (62%) and education (24%), leaving little room for savings or investment. As shown in Figure 9.

4.3 Importance of savings

Figure 10 shows that, although 97% of respondents recognize the importance of saving, the lack of knowledge on how to plan and execute a budget limits their ability to save effectively. Forty-six percent do not budget at all, reinforcing the need to teach practical tools for financial management.

4.4 Knowledge of credit and investments

Seventy-five percent of students have little knowledge of how to Figure 11 shows that 75% of students have little knowledge of how to apply for a bank loan and 77% have poor financial skills for planning future investments. This indicates that students are not prepared to handle basic financial instruments, which could affect their professional and personal performance.

4.5 Perception of financial education

Figure 12 shows that 83% of respondents consider it essential to Include financial education in university curricula. Furthermore, 69% believe that financial education workshops would improve

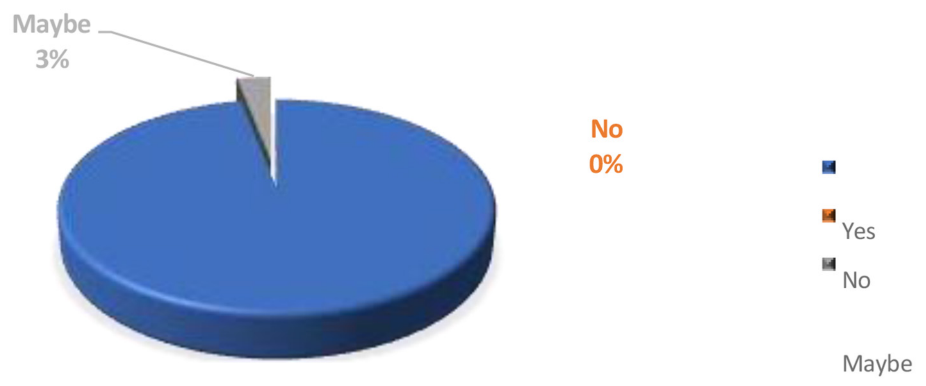

FIGURE 10
Importance of financial savings. *Source* Own elaboration.

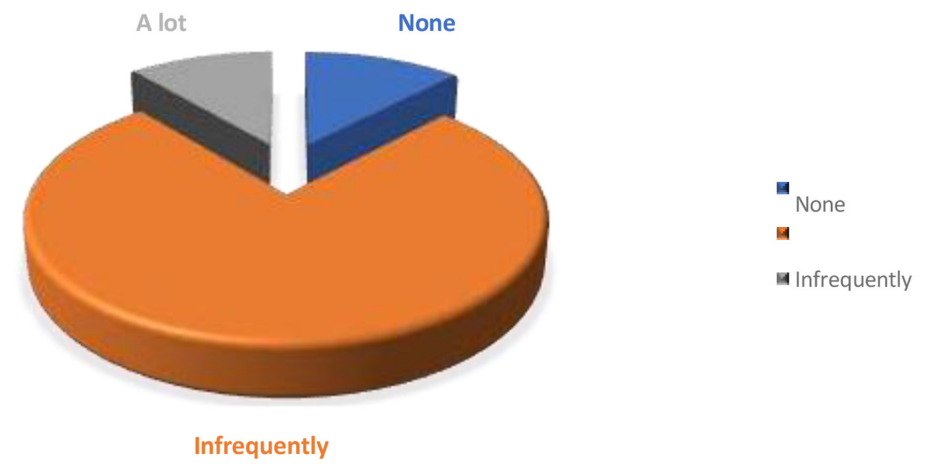

FIGURE 11
Financial skills. *Source*: Own elaboration.

FIGURE 12
Introduction to higher personal financial education. *Source*: Own elaboration.

their personal financial management. This demonstrates a high receptivity toward the implementation of educational programs in this area.

The proposal to implement a financial education program was rated as "very adequate" by the experts consulted, especially in the areas of generating savings habits and budget building. This supports the relevance and feasibility of the initiative.

5 Discussion

The objective of this research was to analyze the levels of financial education and personal economic management of students of Management and Public Administration at the San Francisco Xavier University of Chuquisaca (Villa Serrano campus). The findings offer a heterogeneous panorama, which reveals educational gaps and raises the need for intervention strategies adjusted to the context. In general terms, the results show a low level of financial literacy among students, which reinforces the urgency of strengthening content and competencies in this subject within the curriculum.

The main weaknesses are concentrated in the understanding and application of basic tools: 46% do not prepare budgets; 75% show low knowledge of credit products; and 77% report limited mastery of investment instruments. Although 97% recognize the importance of saving, this does not translate into effective habits: 80% report difficulties in allocating resources and 66% remain financially dependent on their family environment.

Taken together, this evidence reveals a significant training gap that may compromise the economic decision-making of future graduates. This gap suggests a disconnection between theoretical training—even in programs related to management—and the personal financial skills required for adult life and, especially, for professional practice in the public sector.

The low levels of financial literacy found are consistent with a wide range of global and regional research. The OECD/INFE (2023) has consistently reported these deficiencies in young populations. Studies such as Agnew et al. (2018) also report low levels of financial literacy among young adults, and Garg and Singh (2018) links this low literacy to poor financial decisions. Particularly relevant is the "paradox" identified, where students in areas such as management (Herawati et al., 2020), do not necessarily demonstrate superior personal financial literacy. This suggests that the current curriculum, while it may cover theoretical or corporate financial aspects, is not sufficiently addressing individual financial competences. Strong family financial dependence and limited adoption of sustainable financial habits are also consistent with the challenges faced by young college students transitioning to financial independence, as discussed in studies on budgeting (Proscovia et al., 2021) and planning (Lusardi and Mitchell, 2014).

A particular finding is the high economic dependence (66% on their parents) and the concentration of spending on food (62%) and education (24%), leaving little room for savings or investment, despite the fact that 97% value saving. "The high economic dependency reported by final year students may be related to the socio-economic dynamics of rural regions" such as Villa Serrano, where employment opportunities for students may be limited and family income the main breadwinner.

This could explain why, although the importance of saving is recognized, the actual capacity to do so is low. In addition, the paradox that students in Public Management and Administration show these shortcomings could be due to a predominantly theoretical curriculum approach or focus on the management of public organizations, rather than on personal finance, as stated in the justification of the study when mentioning the "possible disconnection between theoretical training and its practical application".

The findings of this study call for immediate action in university policy and curriculum design at the Villa Serrano campus, with possible application to similar contexts. The high student demand (83%) for financial education content, coupled with the favorable assessment of experts on a specific program, confirms the feasibility and relevance of intervening.

It is recommended to incorporate from the first semesters basic financial education modules with practical emphasis on: money management, budgeting, understanding of credit products and use of basic savings and investment instruments. This content would not only improve students' personal financial well-being, but also strengthen their preparation for public administration, where decisions have a direct impact on state finances. The training should be contextualized to the socio-economic conditions of the students in Villa Serrano.

It should be noted that the low levels of financial literacy found among Management and Public Administration students at Villa Serrano not only confirm the lack of formal programs in the university curriculum, but also reveal an academic paradox: even in management-related degree programs, students reproduce patterns of economic dependence and inappropriate financial practices.

We analyzed how these findings relate to the international literature, which has highlighted similar deficiencies in young university students from urban contexts and developed countries (Lusardi and Mitchell, 2014; Garg and Singh, 2018). However, the Bolivian case adds an important nuance: rural and socioeconomic conditions further limit access to financial services and educational content, amplifying the gap with students from urban environments. This specificity places the study within the global debate on financial inclusion, showing that financial literacy cannot be addressed in a homogeneous manner, but rather requires differentiated strategies according to cultural and territorial context.

Furthermore, the lack of knowledge about savings, credit and investment compromises these students' future ability to perform in public administration, where resource management and economic decision-making are core competencies. In this sense, the study shows that strengthening financial education in rural universities not only impacts students' personal lives, but also the efficiency and transparency of local public management.

Finally, clearer connections are established with global research on financial education programs in universities (Mandell and Klein, 2009; OECD, 2020a,b), emphasizing that curricular integration in Villa Serrano can become a pilot case to demonstrate how financial education contributes simultaneously to individual well-being and institutional development. This expansion will allow the work to be more firmly positioned in the international academic debate, demonstrating its contribution to both theory and practice in rural contexts in developing countries.

5.1 Theoretical contributions to the field

This study provides empirical evidence from a poorly researched context—a regional university campus in Bolivia (Villa

Serrano)—and adds to the body of research on financial literacy in developing countries and in student populations outside large urban centers. The results confirm the impact of contextual factors—such as family economic dependence and limited access to one's own resources—in shaping financial knowledge and practices. They also reinforce the discussion on the "paradox" of financial education for students in related careers: simple exposure to general economic concepts does not guarantee personal financial competences without explicit, applied and situated instruction. Finally, the study supports the OECD's multidimensional approach (knowledge, behavior and attitude) by showing that knowledge and a savings-friendly attitude do not necessarily translate into effective behaviors when concrete tools and skills are lacking.

5.2 Limitations of the study

It is important to recognize certain limitations. "One limitation of the study was the application to a single university site" (Villa Serrano), which restricts the generalizability of the results to all students of Management and Public Administration in Bolivia or to other degree programs. However, it provides a solid and detailed basis for this particular context and for comparative studies. Although a mixed approach was used to triangulate the data, the information on financial practices and attitudes is partially based on student self-reporting, which could introduce some bias, although the objective knowledge test and interviews sought to mitigate this. The cross-sectional design of the study provides a snapshot but does not allow for analysis of the evolution of financial literacy over time.

This study has some limitations that should be considered when interpreting the results. Firstly, some of the information on financial knowledge, attitudes and practices is based on self-reported data, which may introduce biases associated with social desirability or the overestimation of certain financial skills by participants. Although this limitation was partially mitigated by the inclusion of an objective test of financial knowledge and semi-structured interviews, it cannot be completely ruled out.

Second, the cross-sectional design of the study allows for the identification of associations between financial education and economic management practices, but does not establish causal relationships or allow for the analysis of changes in financial behavior over time. Consequently, the results should be interpreted as a snapshot of the moment analyzed and not as evidence of longitudinal changes.

Thirdly, the study was conducted in a specific local context, namely the Villa Serrano campus of the San Francisco Xavier University of Chuquisaca. The socio-economic, cultural and educational characteristics of the rural environment may limit the generalization of the results to other urban university contexts or to different countries. However, this limitation is also a strength, as it provides empirical evidence from a setting that has been little explored in the literature.

5.3 Proposals for future research

In light of these findings and limitations, several lines of research are outlined: (i) to evaluate, through longitudinal designs, the impact of specific financial education programs on the modification of economic habits during university life in Villa Serrano, with short and medium-term measurements; (ii) to carry out comparative studies between other campuses of San Francisco Xavier University and universities in rural and urban contexts in Bolivia to identify convergences and divergences; (iii) to deepen the role of family financial socialization and its interaction with formal education in the configuration of youth financial competence; and (iv) to analyze the relative effectiveness of different pedagogical methodologies (practical workshops, gamification, mentoring) for this profile of students.

6 Conclusion

Financial literacy is essential for effective decision-making and optimal resource allocation. The low levels of financial literacy in particular of the students of the Management and Public Administration course at the Villa Serrano campus underline the need for specific educational interventions incorporated in the course curriculum to efficiently develop financial education in the teaching-learning process from a scientific and practical point of view, which will strengthen professional training and foster a financial culture in the students.

The challenge of assessing students' financial literacy has required diverse approaches to understanding the educational needs of different population groups.

Financial literacy programs should be tailored to the specific needs of vulnerable groups and should have clear objectives and rigorous evaluation metrics to ensure their effectiveness. Financial literacy is not just about understanding financial products; it also involves confidence in one's own ability to make financial decisions.

This study makes an original contribution to the analysis of financial literacy by providing empirical evidence from a rural and marginalized university context in Bolivia, integrating individual, family and contextual factors into the explanation of financial behavior. It also demonstrates the relevance of financial literacy as an essential skill in the training of future professionals in public administration, with direct implications for the ethical and efficient management of public resources.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Ethics statement

Written informed consent was obtained from the individual(s) for the publication of any potentially identifiable images or data included in this article.

Author contributions

MG-A: Writing – review & editing, Methodology, Conceptualization. MG-C: Writing – review & editing, Validation, Data curation. EL: Methodology, Writing – review & editing, Investigation, Data curation. JP: Data curation, Validation, Writing – review & editing. CT: Investigation, Writing – review & editing. PR: Supervision, Writing – original draft, Formal analysis.

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Conflict of interest

The author(s) declared that this work was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Generative AI statement

The author(s) declared that generative AI was not used in the creation of this manuscript.

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