

The origin and intensity of socio-economic deprivation in the light of financial literacy

A origem e a intensidade das privações socioeconômicas à luz da alfabetização financeira

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Abstract

Purpose: Financial literacy has an influence on development processes and poverty reduction, promoting financial citizenship and opportunities for individuals to have better living conditions. The research sought to identify the origin and intensity of socio-economic deprivation in the light of financial literacy

Originality/value: The study has theoretical and practical implications by providing empirical insights that can help formulate public policies aimed at boosting the financial literacy of the population.

Design/methodology/approach: The research, of quantitative nature, was carried out in Santana do Livramento, where a questionnaire was applied at busy places. Analyses were conducted using descriptive statistics, the Alkire-Foster method and chi-square tests.

Findings: The analysis showed a sample of 401 respondents, 61.28% of whom had low levels of financial literacy. Regarding financial literacy, the determining factors for the origin of deprivation were gender, marital status, mother's and father's schooling, their own monthly income, having debt and the situation of overall deprivation. The main sources of deprivation were those related to the education of the parents and the respondent him/herself, as well as monthly income. On the other hand, participants showed less deprivation in access to washing machines and the internet.

Keywords: financial literacy, deprivation, development, inequality, Alkire-Foster methodology

Resumo

Objetivo: A alfabetização financeira exerce influência sobre os processos de desenvolvimento e redução da pobreza, promovendo a cidadania financeira e oportunidades para que os indivíduos tenham melhores condições de vida. A pesquisa buscou identificar a origem e a intensidade das privações socioeconômicas à luz da alfabetização financeira.

Originalidade/valor: O estudo tem implicações teóricas e práticas ao fornecer *insights* empíricos que podem auxiliar na formulação de políticas públicas com o objetivo de alfabetizar financeiramente a população.

Design/metodologia/abordagem: A pesquisa, de cunho quantitativo, foi realizada em Santana do Livramento onde foi aplicado um questionário em locais de grande circulação. As análises foram feitas aplicando técnicas de estatística descritiva, do método Alkire-Foster e de testes qui-quadrado.

Resultados: As análises reportaram uma amostra de 401 respondentes, em que 61,28% apresentaram baixos níveis de alfabetização financeira. À luz da alfabetização financeira, foram determinantes para a origem das privações os fatores gênero, estado civil, escolaridade própria e da mãe, renda mensal própria, possuir dívida e a situação de privação como um todo. Nas principais fontes das privações, destacam-se aquelas relacionadas à escolaridade dos pais e do próprio respondente, bem como a renda mensal. Por outro lado, os participantes são menos privados no que tange à falta de máquina de lavar roupas e acesso à internet.

Palavras-chave: alfabetização financeira, privações, desenvolvimento, desigualdade, metodologia Alkire-Foster

INTRODUCTION

Financial literacy has gained prominence in both academic debates (Lotto, 2020) and broader discussions. This recognition stems from the understanding that financial literacy is essential for individuals navigating increasingly complex financial environments (Potrich et al., 2015; Santos et al., 2018). The continuous development of financial markets and demographic, economic, political, and social changes further increase the relevance of topics related to financial literacy (Bogoni et al., 2021). Moreover, financial literacy is one of the greatest challenges faced by many countries and has one of the main implications for sustainability (Lotto, 2020).

Being financially literate means understanding the value of money and how to maximize the benefits of using it (Kadoya & Khan, 2020). According to the Organisation for Economic Co-operation and Development (OECD, 2015), financial literacy is characterized by the interaction between awareness, knowledge, skills, attitudes, and behaviors necessary for making sound financial decisions, achieving individual financial well-being.

There is vast evidence linking socioeconomic and demographic characteristics with financial literacy. The research by Potrich et al. (2013), which sought to identify the financial literacy of university students and how it is affected by socioeconomic and demographic variables, revealed that gender, income, education, and occupation play significant roles in financial literacy. The results indicate that males, individuals with higher income, and those with financial education have higher levels of financial literacy.

The study conducted by Bottazzi and Lusardi (2021) examined gender differences in the financial literacy of high school students in Italy. The results indicated a significant disparity among Italian youth, highlighting the significant influence of parental background, particularly maternal, on women's financial knowledge. They also observed that the social and cultural context in which men and women are embedded plays a crucial role in explaining gender differences.

Sethy et al. (2023) examined socioeconomic attributes in India in relation to various dimensions of financial inclusion. The results pointed out that age, gender, marital status, education, and religion are crucial determinants of financial inclusion. The analysis also highlights that higher levels of education increase financial inclusion. It is worth noting that financial inclusion and financial literacy are different, but related. Financial literacy appears in the literature as a possible promoter of financial inclusion (Morgan & Long, 2020; Sethy et al., 2023). Another study suggests that men's financial

literacy is slightly higher than women's, just as younger individuals, those with better education, and higher income have greater financial literacy (Morgan & Long, 2020).

It is important to emphasize the relevance that financial literacy has in development and in reducing poverty rates. The literature suggests that a high level of financial literacy in the population will impact the increase in financial inclusion, which will subsequently reduce the gap and the low-income trap to improve people's well-being, leading to a reduction in poverty rates (Lotto, 2020). This role of financial literacy is of paramount importance for developing countries, such as Brazil. In this context, the country has been characterized by vast spatial, social, economic, political, and administrative heterogeneities since the beginning of its republican history (Souza & de Carvalho, 1999), and is internationally recognized as one of the most unequal countries (de Avila Bêrni et al., 2002). Therefore, the research aims to identify the origin and intensity of socioeconomic deprivations in light of financial literacy.

Financial literacy is of paramount importance for society, representing a development indicator. However, research on this topic in Brazil is scarce, and the subject has not been fully explored, leaving room for further research and analysis (Floriano et al., 2020; Niehues et al., 2023), which are the goals of this study that innovates by analyzing the origin and intensity of socioeconomic deprivations and not only the differences in literacy levels concerning socioeconomic variables. From a practical standpoint, the research findings offer guidance for policymakers interested in promoting financial literacy and reducing socioeconomic disparities.

FINANCIAL LITERACY

Governments worldwide are showing interest in finding effective approaches to improve the financial literacy level of their populations (Atkinson & Messy, 2012), as this competence develops skills for making financial decisions (Niehues et al., 2023). Financial literacy is recognized as a necessary skill for survival, prosperity, and economic and social development, especially in an increasingly complex financial context (Niehues et al., 2023; Schmitz et al., 2021).

Understanding financial literacy goes beyond the concept of financial education, encompassing one of its fundamental dimensions: financial knowledge (Potrich et al., 2013; Schmitz et al., 2021). The evolution from

financial education to financial literacy is driven by the recognition that the latter concept encompasses not only knowledge but also financial behaviors and attitudes (Floriano et al., 2020). Therefore, financial literacy goes beyond financial knowledge, requiring individuals to have the skill and confidence to apply knowledge when making decisions (Potrich et al., 2013).

The dimension of financial knowledge represents a particular type of human capital that is acquired throughout life, through learning about matters that affect one's ability to manage income, expenses, and savings effectively (Delavande et al., 2008). In contrast, the dimension of financial attitude refers to an evaluation that individuals make regarding others, objects, and facts, shaped by emotions, beliefs, past experiences, and behaviors (Schmitz et al., 2021). Regarding financial behavior, the adoption of sound financial practices determines effective expense planning and contributes to building financial security, forming a positive foundation for individuals' financial situation (Atkinson & Messy, 2012).

Financial (ill)literacy is often shaped by an individual's background and personal characteristics. These deprivations can be understood as a manifestation of the poverty phenomenon, expanding the analysis to the social sphere and considering the social context in which individuals are embedded (de Codes, 2008). Such deprivations can occur in various life spheres, such as work, home, neighborhood, and family, and in a variety of social and individual activities where different social roles are performed (Rocha, 1997).

Characteristics such as gender, age, marital status, having dependents or not, occupation, income, and education have been studied as possible manifestations of socioeconomic and demographic deprivations, with this set representing poverty, as well as possible drivers of (ill)financial literacy. Research has examined these characteristics and their relation to financial literacy, as demonstrated in the study by Lusardi et al. (2010). In this study, the authors checked gender, race, own education, and mother's education, among others, and identified their relationship with financial literacy. Women, Black, and Hispanic individuals, as well as those with low levels of their own and maternal education, are more likely to have lower financial literacy. In a study also conducted by Lusardi and Mitchell (2011), the authors found that, in addition to gender, education, and race, age and employment status also relate to financial literacy, and indicated that individuals under 35 years old and over 65 had lower levels of financial literacy, as well as the unemployed.

These results (Lusardi & Mitchell, 2011) were later corroborated by Brown and Graf (2013), who, upon examining age, gender, education, and

employment status, found similar results. Additionally, the authors (Brown & Graf, 2013) included marital status as a relevant variable and found that it also influences financial literacy, with gender disparity being more significant when women are single. Mottola (2013) also observed this gender disparity in his research.

Meanwhile, another important variable in this family scenario is the existence of children. Servon and Kaestner (2008) showed that people with two or three children are more likely to have lower levels of financial literacy than those with one child. More recently, Kadoya and Khan (2020) examined variables such as age, gender, marital status, own education, spouse's education, parents' education, family income, occupation, and employment status. The authors found that in Japan, age, gender, and one's own education, as well as spouse's education, could contribute to financial (ill) literacy. Lotto (2020) in Tanzania examined the relationship between financial literacy and age, gender, education, employment status, and income of the head of the household. The results reported that all of these factors impact financial literacy. Both studies confirm the results of Lusardi and Mitchell (2011) regarding age, as very young or older individuals tend to have lower levels of financial literacy.

Karakara et al. (2022), although not directly studying financial literacy, found that it is related to financial anxiety, which was the focus of their research. They examined the relationship between financial anxiety, linked to financial literacy, and gender, rural or urban residence, marital status, employment status, education, age, and the number of people living in the same house, among other factors. The results show that in Ghana, residence, employment status, and education are factors linked to financial literacy and anxiety.

Considering the Brazilian context, Potrich et al. (2013) examined the relationship between financial literacy and gender, age, marital status, the presence of dependents, race, ancestry, occupation, education, and income. The results show that men, young people between 21 and 22 years old, white individuals, public servants, those with higher purchasing power, and those with education related to finance are more likely to have higher levels of financial literacy. This study was conducted with university students. Later, Potrich et al. (2015) found that gender, the presence of dependents, education, and both personal and family income are related to financial literacy, while variables such as marital status, occupation, age, and parents' education were not significant. Niehues et al. (2023), still in Brazil, found that only gender and education could explain part of financial literacy. Variables



such as age, marital status, presence of children and/or other dependents, race, occupation, and income were not significant.

Focusing on gender, the literature in Brazil has investigated why women have lower levels of financial literacy (Potrich et al., 2018, 2021). In general, women score lower than men in the financial knowledge dimension (Potrich et al., 2015), affecting their level of financial literacy. Moreover, these differences may be related to the opportunities and social context that men and women experience in society. Men tend to have contact with money earlier than women due to cultural aspects and patriarchal financial socialization (Rink et al., 2021). Analyzing low-income women, the literature reports greater financial fragility, as they have low educational levels, budgetary constraints, seasonal employment, and wage fluctuations, which impact their financial literacy (Campara et al., 2016).

Other attributes, such as indebtedness, the number of residents in a house, the number of bedrooms, homeownership, as well as the ownership of assets like washing machines, cars, motorcycles, and internet access, are also subjects of investigation regarding possible socioeconomic deprivations. The Multidimensional Poverty Index (MPI) is an indicator that reflects deprivations in fundamental services and essential functions for human well-being. Distinguishing itself from conventional poverty metrics based solely on income, the MPI highlights a distinct set of deprivations. This index consists of three key dimensions: health, education, and living standards (Alkire & Santos, 2010).

In Brazil, the increasing incidence of indebtedness indicates a considerable portion of the population with low financial literacy, predisposing individuals to situations of debt (Donadio et al., 2012). Lusardi and Tufano (2015), by relating low financial literacy to indebtedness, found that these individuals are more likely to engage in high-cost transactions, subjecting themselves to high fees and resorting to expensive loan modalities.

Littwin (2008) highlights that easy access to credit, even for low-income families, has led to a “democratization of credit.” However, this trend is not necessarily beneficial, as consumers with difficulty paying off their bills become the most profitable segment of the credit card industry due to high interest rates and penalties. These practices can lead to a rapid and substantial accumulation of debt.

Studies indicate that larger families are more likely to face financial difficulties, with an increase in the number of family members being associated with a higher probability of facing such challenges (Karakara et al., 2022). This observation suggests that family size may play a significant role in socioeconomic deprivations.



In the context of multidimensional poverty among women in Brazil, Batista and De Oliveira (2022) identify that women face substantial deprivations, emphasizing items such as washing machines (39%) and internet access (36.5%). However, owning a home is indicated as the least common deprivation, affecting only 1.2% of the women studied. Not just as indicators of material wealth, owning goods such as washing machines and homes is interpreted as opportunities for individuals to share information and exercise control over their environment, including the use of time (Kertenezky et al., 2011).

Analyzing the dynamics of multidimensional poverty among Brazilian youth, Pereira et al. (2020) highlight that access to the internet is one of the main sources of deprivation. This suggests that lack of access to the internet may contribute to socioeconomic disadvantages among young people.

According to research conducted by de Souza et al. (2018) to evaluate users' perceptions and satisfaction with Internet Banking services, the majority of respondents (28.1%) access Internet Banking 1 to 2 times a week, while 26.6% use the service 3 to 4 times, and 24% access it five or more times a week. It is also observed that 11.5% of participants use the service once a month. Furthermore, a small percentage (9.9%) still does not use the service, with the majority of users being regular customers who have been using Internet Banking for over a year. These results reflect significant user adoption and loyalty to the service over time. Based on this theoretical background, the following hypotheses are formulated for this research:

- **H0:** There is no significant difference between financial literacy and a specific socioeconomic variable;
- **H1:** There is a significant difference between financial literacy and a specific socioeconomic variable.

Next, the research methodology is presented.

METHODOLOGY

The state of Rio Grande do Sul, despite having socioeconomic indices above the national average, still maintains significant levels of inequality. The study by Bagolin et al. (2004) tested the hypothesis of Kuznets' Theory, revealing that the Kuznets curve is a valid construct for representing the relationship between inequality and income in the municipalities of Rio Grande do Sul (RS) between 1970 and 1991. However, the trajectories are specific to each municipality, given its physical, historical, and economic characteristics.

Thus, the Southern half of the state faces limitations in terms of economic development and education. In this region, there is the municipality of Santana do Livramento, where the research was conducted. Considering the economic and educational challenges, it becomes relevant to analyze financial literacy in this context. Specifically, Santana do Livramento, RS, presents relatively low indicators in education, work, income, and economy compared to the rest of the state. For instance, the school enrollment rate for children aged 6 to 14 in 2010 was 97.6% (ranking 316th out of 497 municipalities in the state), and the average monthly salary of formal workers in 2021 was equal to 2.1 minimum wages (ranking 319th out of 497 municipalities) (IBGE, 2021).

The study used a questionnaire applied in person, with convenience sampling. Respondents were approached in high-traffic areas such as bus stops, lottery outlets, supermarket parking lots, and banks, following the procedures approved by the Brazil Research Ethics Committee (CAAE No: 71485723.9.0000.5323). This sampling, as characterized by Gil (2021), selects respondents based on their availability, providing access to a large number of participants. The sample covered the population of the municipality of Santana do Livramento, RS, estimated at around 84.421 in 2022 by Brazilian Institute of Geography and Statistics (IBGE). With a 95% confidence level and a 5% margin of error, the minimum calculated sample size was 383 people. This research reached 401 respondents, all aged 18 and over and residents of Santana do Livramento.

The questionnaire was developed based on the work of Potrich et al. (2016), who created and validated the Financial Literacy Thermometer, a tool consisting of 21 questions, covering 3 questions on financial attitude, 5 on financial behavior, and 13 on financial knowledge. Additionally, questions related to the respondent's profile were included to assess their background and level of deprivation. The questionnaire totaled 46 questions, aiming to understand the level of financial literacy and the socioeconomic status of individuals.

The first stage of data analysis followed the method of Potrich et al. (2016) to identify the financial literacy of the sample. This stage consisted of four steps, with the first being the coding of variables for attitude, knowledge, and financial behavior, assigning values to the respondents' answers. The second stage involved constructing standardized measures of financial literacy, assigning a value to each question from the questionnaire for each measure (attitude, knowledge, and behavior).

To define whether an individual has a high or low level of financial literacy, it was necessary to apply the squared distance formulas of the responses

obtained by participants in relation to the center of cluster 0 (D0) and the center of cluster 1 (D1). The first represents individuals with a low level of financial literacy, and the second represents individuals with a high level of financial literacy. Finally, a value of 1 was assigned for $D0 > D1$, indicating individuals with a high level of financial literacy, and a value of 0 otherwise. This procedure was carried out in Stata® software.

The second stage involved the application of the Alkire-Foster method to analyze the socioeconomic deprivations experienced by the respondents. Table 1 presents the set of observed variables, as well as the criteria established for defining the cutoff lines analyzed (deprived or non-deprived individuals). The indication of deprivation conditions was based on the results of the cited literature under the lens of financial literacy. For example, a deprivation condition equivalent to 1 indicates that a particular alternative of the socioeconomic variables has deprivation based on financial literacy.

Table 1

Conceptual model for assessing deprivations in light of financial literacy

Variable	Response	Deprivation condition	Literature for defining the cutoff line
Gender	Male	0	Brown & Graf (2013); Kadoya & Khan (2020); Lotto (2020);
	Female	1	Lusardi et al. (2010); Lusardi & Mitchell (2011); Mottola (2013);
	Others	1	Niehues et al. (2023); Potrich et al. (2013, 2015)
Age (in years)	Young adults (18 to 34)	1	Brown & Graf (2013); Kadoya & Khan (2020); Lotto (2020);
	Adult and Middle-aged (35 to 64)	0	Lusardi & Mitchell (2011);
	Elderly (more than 65)	1	Potrich et al. (2013)
Marital Status	Single	1	Brown & Graf (2013)
	Separated or Divorced		
	Widowed		
	Married	0	
	In a stable relationship		
Do you have children?	No	0	Servon & Kaestner (2008)
	Yes	1	

(continues)

Table 1 (continuation)***Conceptual model for assessing deprivations in light of financial literacy***

Variable	Response	Deprivation condition	Literature for defining the cutoff line
If you have children, how many?	One child	0	Servon & Kaestner (2008)
	Two or more children	1	
What is the age range of your children?	Under 18	1	
	Over 18	0	
	It does not apply		
Do you have any other dependents?	Yes	1	Potrich et al. (2015)
	No	0	
Race	Yellow	1	Lusardi et al. (2010); Lusardi & Mitchell (2011); Potrich et al. (2013)
	White	0	
	Indigenous	1	
	Brown		
	Black		
	No declaration		
Level of Education	Complete Elementary School	1	Brown & Graf (2013); Kadoya & Khan (2020); Karakara et al. (2022); Lotto (2020); Lusardi et al. (2010); Lusardi & Mitchell (2011); Niehues et al. (2023); Potrich et al. (2013, 2015)
	Incomplete High School		
	Complete High School		
	Ongoing Higher Education	0	
	Complete Higher Education		
	Ongoing, Incomplete, or Complete Postgraduate		
Mother's level of education	Complete Elementary School	1	Lusardi et al. (2010)
	Incomplete High School		
	Complete High School		
	Ongoing Higher Education	0	
	Complete Higher Education		
	Ongoing, Incomplete, or Complete Postgraduate		

(continues)

Table 1 (continuation)

Conceptual model for assessing deprivations in light of financial literacy

Variable	Response	Deprivation condition	Literature for defining the cutoff line
Father's level of education	Complete Elementary School	1	Lusardi et al. (2010)
	Incomplete High School		
	Complete High School		
	Ongoing Higher Education		
	Complete Higher Education	0	
	Ongoing, Incomplete, or Complete Postgraduate		
Occupation	Formal employment	0	Brown & Graf (2013); Karakara et al. (2022); Lotto (2020); Lusardi & Mitchell (2011); Potrich et al. (2013)
	Informal employment	1	
	Not working		
Own average monthly income	Up to BRL \$ 2.900	1	Potrich et al. (2013, 2015); Lotto (2020)
	Between BRL \$ 2.900 and BRL \$ 7.100	0	
	Between BRL \$ 7.100 and BRL \$ 22.000		
	Above BRL \$ 22.000		
Family average monthly income	Up to BRL \$ 2.900	1	Potrich et al. (2015)
	Between BRL \$ 2.900 and BRL \$ 7.100	0	
	Between BRL \$ 7.100 and BRL \$ 22.000		
	Above BRL \$ 22.000		
Do you have any debt?	No	0	Donadio et al. (2012); Lusardi & Tufano (2015)
	Yes	1	
Is your debt overdue?	No	0	Littwin (2008); Reis (2016)
	Yes	1	
How many people do you live with?	Up to three people	0	Karakara et al. (2022).
	More than three people	1	

(continues)

Table 1 (conclusion)***Conceptual model for assessing deprivations in light of financial literacy***

Variable	Response	Deprivation condition	Literature for defining the cutoff line
How many bedrooms are in your house?	Up to one	1	Kertenezky et al. (2011).
	More than one	0	
Does your house have a washing machine?	No	1	Batista & De Oliveira (2022); Kertenezky et al. (2011)
	Yes	0	
Is the house you live in your own?	No	1	Batista & De Oliveira (2022); Kertenezky et al. (2011)
	Yes, and I am still paying		
	Yes, and I already paid	0	
Do you own a car and/or motorcycle?	No	1	Alkire & Santos (2010)
	Yes	0	
Do you have access to the internet at home?	No	1	Batista & De Oliveira (2022); Pereira et al. (2020)
	Yes	0	
Do you use the internet to gain more financial knowledge?	No	1	
	Yes	0	
Do you use Internet Banking?	No	1	De Souza et al. (2018)
	Yes	0	

According to Alkire et al. (2014), the method is suitable for the measurement and quantitative analysis of multidimensional poverty and consists of calculating three main indices. Alkire and Foster (2011) estimate the deprivation incidence index (H), the average deprivation gap (A), and the adjusted incidence (M0) to measure and analyze multidimensional poverty. The deprivation incidence index measures the proportion of people in deprivation, while the average deprivation gap measures the intensity of this deprivation. The adjusted incidence index, a significant contribution of the Alkire-Foster method, is the aggregation of the two previous indices. In other words, it corresponds to the proportion of deprivations that the deprived population faces in relation to the maximum deprivations that the entire population could suffer.

Finally, in the third stage of the data analysis, chi-square tests were performed to identify the origin of deprivations in light of financial literacy, one of the objectives proposed by this research. The chi-square test compares the observed frequencies with the expected frequencies (Fávero & Belfiore, 2017).

ANALYSIS AND DISCUSSION OF RESULTS

Sample Description

Before delving into the analysis of the results, it is essential to identify the demographic characteristics of the research participants. For 11 of the 401 respondents, it was not possible to calculate their level of financial literacy. However, of the 390 respondents, 102 (26.15%) showed high levels of financial literacy, and 288 (73.85%) had low levels of financial literacy. The average age of the respondents is 39, with the youngest respondent being 18 years old and the oldest being 85 years old. Regarding gender identification, 60.05% of the participants identified as female, 38.44% as male, and 1.51% as other. It is noted that most respondents are single (43.25%) and of white race (80%). The data is summarized in Table 2 for better understanding.

Table 2
Sample Profile

Variable	Freq.	%	Financially literate		Financially Illiterate	
			Deprived	Not deprived	Deprived	Not deprived
Gender						
Female	239	50.05	26	23	160	22
Male	153	38.44	22	31	73	25
Others	6	1.51	0	0	5	1
Race						
White	320	80	41	50	176	47
Brown	43	10.75	4	3	35	0
Black	33	8.25	3	1	24	2
No declaration	2	0.5	0	0	2	0

(continues)

Table 2 (conclusion)**Sample Profile**

Variable	Freq.	%	Financially literate		Financially Illiterate	
			Deprived	Not deprived	Deprived	Not deprived
Race						
Yellow	1	0.25	0	0	1	0
Indigenous	1	0.25	0	0	1	0
Marital Status						
Single	173	43.25	20	19	118	15
Married	142	35.5	14	24	73	23
In a stable relationship	46	11.5	8	10	20	6
Separated/ Divorced	26	6.5	4	1	16	5
Widowed	13	3.25	2	0	11	0

In terms of educational level, it is noteworthy that the most prevalent level of education in the sample is completed high school (24.06%), followed by incomplete higher education (20.80%). It is also important to highlight that the family context of the respondents plays a significant role in shaping financial literacy. In this sense, the educational level of the respondents' parents was investigated, and it was found that the most frequent level of education for both fathers and mothers is incomplete elementary school (42.93% and 33.75%, respectively).

When investigating the respondents' occupations, it was found that 66.25% have formal employment, while 22.25% are classified as informal workers, and 11.50% are not employed (including retirees, unemployed, among others). It can be observed that the average personal monthly income is predominantly up to BRL \$ 2.9 thousand, while the average family monthly income ranges between BRL \$ 2.9 thousand and BRL \$ 7.1 thousand. These findings align with the income profile presented by IBGE (2021). It is interesting to highlight that 75.32% of the respondents consider their income insufficient. Additionally, the results reveal that 21.06% of the participants are in debt, with overdue debts, and 49.75% of these respondents report not having any debt.

Financial Literacy

Financial literacy was studied from three constructs: financial attitude, behavior, and knowledge. In Table 3, the descriptive statistics of these constructs are presented. The analysis was done for the entire sample, for the deprived respondents (287 people), and for the non-deprived respondents (103 people).

Table 3
Descriptive Analysis of the Financial Literacy Constructs

	Total sample			Deprived			Not deprived			
Variable	Obs	Mean	Mean	SD	Min.	Max.	Mean	SD	Min.	Max.
Attitude	390	0.50	0.53	0.17	0.2	1	0.39	0.14	0.2	0.7
Knowledge	390	0.59	0.52	0.21	0	1	0.78	0.12	0.46	1
Behaviour	390	0.59	0.51	0.17	0.2	0.97	0.81	0.13	0.48	1

It is observed that the financial attitude of the sample has an average of 0.50. Contrary to the study by Potrich et al. (2013), this result points to a population with concerning levels of agreement regarding their financial attitude. It is also important to note that the financial attitude of the deprived respondents is, on average, 0.53, while that of the non-deprived is 0.39. In this construct, higher values indicate a more negative financial attitude, which may justify the discrepancy between the two groups. This trend is observed in the maximum values, as the non-deprived group does not reach the maximum value of 1.

Financial knowledge and behavior, on the other hand, have the opposite interpretation from attitude, as the higher the averages, the better the results (Potrich et al., 2013). The averages for the general sample show relatively satisfactory results, with values greater than 0.50, specifically 0.59 for each of the constructs.

The distinction between the groups helps to observe that the deprived respondents continue to show less satisfactory results than the non-deprived. Financial knowledge has an average of 0.26 higher for non-deprived respondents compared to the deprived, with averages of 0.78 and 0.52, respectively. It is also worth noting that the standard deviation of non-deprived respondents is 0.12, while that of the deprived is 0.21, indicating greater variance within the second group. Furthermore, no respondent from

the non-deprived group scored 0 in financial knowledge, as the group's minimum value is 0.46, which is very close to the average of the remaining respondents.

Regarding financial behavior, the difference between the groups is even more pronounced. The non-deprived group achieved an average of 0.81, while the deprived group had an average of 0.51, resulting in a 0.30 difference. It is observed that, in the second group, none of the respondents reached the minimum score (0.2) or the maximum (0.97). Similarly, the non-deprived respondents also did not reach the minimum score (0.48). However, the minimum value of 0.48 in the non-deprived group is again very close to the average of the deprived group, just as in the case of financial knowledge. These results are capable of showing part of the difference between the profiles of each group regarding financial literacy and identifying their deficiencies in each construct of financial literacy.

In order to corroborate the findings, One-Way T-tests were performed for each of the three dimensions that make up financial literacy. For financial attitude, the null hypothesis that there is no significant difference between the deprived and non-deprived groups was rejected at the 5% significance level ($p = 0.03$). The same occurred for the knowledge and behavior dimensions, where the null hypotheses were rejected at the 1% significance level, indicating that there is a difference between the deprived and non-deprived groups in financial knowledge and behavior ($p = 0.00$ for each of the tests).

Socioeconomic Deprivations in Light of Financial Literacy

The method proposed by Alkire-Foster involves calculating three indexes: deprivation incidence (H), average deprivation gap (A), and adjusted incidence (M0). The deprivation incidence (H) calculation presents the proportion of deprived people in relation to the total population. The behavior of 23 indicators was observed, and those individuals with deprivation in eight or more indicators ($\frac{1}{3}$ of the total indicators) were classified as multidimensionally deprived. This distinction of deprivation or not is defined by Alkire and Foster (2011) as the poverty cutoff (k), where $0 < k \leq d$, with (d) being the total number of indicators. Thus, the incidence of deprived people in Santana do Livramento is 73.32%, meaning that 294 out of 401 respondents are in a deprivation situation.

As for the average deprivation gap, it observes the intensity of these deprivations. The result of 45% indicates that multidimensionally deprived individuals are deprived in 45% of the analyzed indicators. The adjusted

incidence is an indicator that represents the proportion of multidimensionally deprived individuals adjusted for the intensity of deprivation. The closer this index is to 100%, the more people are in a deprivation situation. In this research, the result obtained was 34.16%. As indicated by the deprivation incidence (H), out of the 401 respondents, 294 are in a deprivation situation, with restrictions in eight or more indicators. Among these 294 respondents, 239 have low financial literacy, while 48 have high financial literacy. For 7 of these respondents, it was not possible to calculate the level of financial literacy, and thus, the analysis of the origin and intensity of deprivations in light of financial literacy was conducted with 239 of the sample respondents.

In order to analyze the intensity of deprivations in light of financial literacy, the data were disaggregated. In this perspective, the financially literate respondents were not considered in the calculation. The results in Table 4 show the deprivation indicators for those individuals who are deprived and have low financial literacy, corresponding to 239 respondents.

Table 4

Disaggregated results of the intensity of deprivations of financially illiterate individuals

Indicator	Deprivation (%)
1 - Female and others	69.04%
2 - Singles, Separated/divorced or widowed	60.67%
3 - Having children	43.93%
4 - Having more than one child	35.56%
5 - Having dependents	16.74%
6 - Non-white	26.36%
7 - Own education (from elementary school to higher education in progress)	89.96%
8 - Mother's education (from elementary school to higher education in progress)	90.79%
9 - Father's education (from elementary school to higher education in progress)	94.14%
10 - Informal workers or unemployed	43.10%
11 - From 18 to 34 and above 65 years old	76.99%
12 - Own income up to BRL \$ 2.9 thousand	79.08%

(continues)

Table 4 (conclusion)***Disaggregated results of the intensity of deprivations of financially illiterate individuals***

Indicator	Deprivation (%)
13 - Family income up to BRL \$ 2.9 thousand	42.68%
14 - Having debt	58.16%
15 - Having debt overdue	29.29%
16 - Living with more than three people	22.18%
17 - Up to one bedroom	11.30%
18 - Not having washing machine	5.02%
19 - Non-owned or non-paid-off housing	48.12%
20 - No own car or motorcycle	43.10%
21 - No internet access	3.77%
22 - Do not use internet to gain financial knowledge	58.16%
23 - Do not use Internet Banking	44.35%

The intensity reveals how much the individuals classified as having low financial literacy and being deprived face deprivations in relation to the maximum possible deprivations. Respondents show greater deprivation or restriction concerning the father's education, followed by the mother's education, and finally their own education, in descending order. This observation suggests that multidimensionally deprived individuals with low financial literacy face educational restrictions across different generations. Thus, it can be inferred that low financial literacy may be associated with low levels of education. This finding strengthens the results reported in the literature (Brown & Graf, 2013; Kadoya & Khan, 2020; Karakara et al., 2022; Lotto, 2020; Lusardi et al., 2010; Lusardi & Mitchell, 2011; Niehues et al., 2023; Potrich et al., 2013, 2015).

Another relevant characteristic is the average personal monthly income. Of the 239 respondents who are deprived and have low financial literacy, 79.08% reported deprivation concerning their own income. The literature reaches a consensus that income positively influences financial education levels (Potrich, 2016). As a result, the findings report that multidimensionally deprived respondents have budgetary restrictions, as they fall within the lowest income levels, which is associated with lower levels of financial literacy.

Age is a factor associated with financial literacy. Existing literature suggests that respondents under 35 years old and over 65 years old are more likely to exhibit low levels of financial literacy (Brown & Graf, 2013; Kadoya & Khan, 2020; Lotto, 2020; Lusardi & Mitchell, 2011; Potrich et al., 2013). Based on the literature, respondents within these age ranges were considered deprived.

In addition to age, within the social realm, deprivation was evident according to gender. Therefore, women and individuals who identified as other are deprived in approximately 69% of the indicators compared to the maximum level of deprivation.

As for the deprivations of lower intensity, they are the lack of a washing machine and access to the internet (5.02% and 3.77%, respectively). This finding aligns with and is consistent with the social indicators from IBGE (2023). In 2022, 71% of the population had equipped their households with washing machines, and 92.1% reported having internet access (IBGE, 2023). These indicators have been increasing over the years, as in 2016, only 63.5% of households were equipped with washing machines, and 68.6% of the population had internet access (IBGE, 2023). Therefore, the low intensity of these indicators in this study is justified.

Regarding the origin of deprivation(s) in light of financial literacy and the factors that trigger them, these were observed through chi-square (X^2) tests, for which the null hypothesis (H_0) assumed that there is no significant difference between financial literacy and a given socioeconomic variable, and the alternative hypothesis (H_1) assumed that there is a significant difference between financial literacy and a given socioeconomic variable according to their frequencies.

One of the factors that trigger deprivation in light of financial literacy is gender. When testing whether there is a significant difference between financial literacy and gender, it was found that the null hypothesis was rejected ($pr = 0.002$), indicating a difference between the group composed of women and others and the group of men. Similarly, marital status also proved to be an important factor, as there were differences between the groups ($pr = 0.031$). Both factors seem relevant in terms of both the origin and the intensity of deprivation in light of financial literacy.

Still within the family/personal context, one's own education ($pr = 0.000$) and the mother's education ($pr = 0.040$) are factors that trigger deprivation in light of financial literacy. Other important factors are related to personal financial situations, such as personal monthly income ($pr = 0.000$) and being in debt ($pr = 0.001$). Therefore, the results show differences in the

origin of deprivation in demographic variables (gender and marital status), family context (own and mother's education), and financial context (having debt and personal monthly income).

The main hypothesis of the study, which guided the current research, assumed that there was a difference between the private and non-private groups in terms of financial literacy. Through the chi-square test, it was observed that at a 1% significance level, the null hypothesis is rejected, and there is a difference between the private and non-private groups and financial literacy. People in deprivation are more likely to be financially illiterate. The next section contains the final considerations.

FINAL CONSIDERATIONS

The aim of the research was to identify the origin and intensity of socio-economic deprivations in light of financial literacy. In order to achieve this goal, a questionnaire was applied in the city of Santana do Livramento/RS, and the data underwent quantitative analysis, utilizing descriptive statistics and the Alkire-Foster method. A total of 401 questionnaires were answered, and in 11 of them, it was not possible to verify the level of financial literacy.

The final sample consisted of 390 respondents. It was identified that 287 individuals are in a state of deprivation, and of these, 239 have low levels of financial literacy. The main results related to financial literacy and its three constructs (attitude, knowledge, and behavior) indicate that the group of deprived respondents presents lower levels of financial attitude (0,53) than the non-deprived group (0,39). Regarding financial knowledge, the non-deprived group achieved higher levels (0,78) compared to the deprived group (0,52). These results were replicated when observing the financial behavior of the respondents (0.81 for the non-deprived group and 0.51 for the deprived group).

The results obtained using the Alkire-Foster methodology show a deprivation incidence index (quantity) of 73.32%. Additionally, the average deprivation gap (intensity) is 45%, while the adjusted incidence index (proportion adjusted by intensity) is 34.16%. When examining the intensity of deprivations more closely, it was observed that the variables related to the education level of the father, mother, and the individual (94.14%, 90.79%, and 89.96%, respectively), as well as own monthly income (79.08%), are the most significant. On the other hand, the intensity is lower concerning the lack of a washing machine (5.02%) and access to the internet (3.77%).

Through chi-square tests, the origin of deprivations in light of financial literacy was further investigated. It was observed that deprivations are associated with variables such as gender, marital status, own education, mother's education, own monthly income, and having debt. Furthermore, the overall deprivation situation (multidimensional) is related to financial literacy, which is the main premise of this research.

This study provides both theoretical and practical contributions. By offering insights into socioeconomic deprivations in light of financial literacy, the literature and academia are enlightened on the multidimensionality of deprivations and the role of financial literacy in them. In this way, the study expanded the understanding of financial literacy and the factors that may affect it, through the multidimensional analysis of these factors, which is innovative in the field. In terms of practical implications, by describing the profile and differences between deprived and non-deprived groups, as well as the origin and intensity of the studied socioeconomic characteristics in light of financial literacy, the research can help in the formulation of more effective strategies and public policies aimed at financially educating the population and, consequently, promoting development.

Due to the limitations of this study, it is understood that the data collection was restricted to a quantitative and objective nature, and the definition of deprivation. A more subjective approach could be employed, such as the inclusion of open-ended questions or the use of qualitative and/or mixed methods, to provide a deeper understanding of the origin and intensity of deprivations in light of financial literacy. Additionally, the definition of deprivations concerning demographic data was based on the literature of financial literacy and poverty. If deprivation had been defined differently or after the results of financial literacy, it is possible that the outcomes would have been different. Future research should continue exploring the origin and intensity of deprivations in light of financial literacy in other populations, conducting comparative and/or longitudinal studies, and employing other approaches and methodologies.

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