

WHAT DETERMINES RURAL FINANCIAL ILLITERACY? AN ANALYSIS OF THE RELATIONSHIP WITH SOCIOECONOMIC AND DEMOGRAPHIC FACTORS

O que determina o analfabetismo financeiro rural? Uma análise da relação com os fatores socioeconômicos e demográficos

¿Qué determina el Analfabetismo Financiero Rural? Un análisis de la relación con factores socioeconómicos y demográficos



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ABSTRACT

The recognition of financial literacy as a growing global policy priority highlights the urgency of addressing financial illiteracy, especially in rural areas of developing countries. This study focuses on the rural area of the Municipality of Capistrano-CE, notable for having one of the most significant rural populations in the Maciço de Baturité-CE region. The objective of this study is to examine the relationship between the level of financial literacy (behavior, attitude and knowledge) with socioeconomic and demographic variables from the perspective of rurality, in addition to encouraging similar research in other rural areas of Brazil. Authors such as Huston (2010); Remund (2010); Jobin and Losekann (2015); Potrich (2016); Pontara (2019) and OECD (2020) offer the theoretical-conceptual and empirical basis of this study. Data collection was carried out through direct field research, where 175 questionnaires were administered in the municipality under analysis. The results indicate that the population surveyed has a low level of financial literacy and is aged between 42 and 80 years, with the majority being female, corroborating the hypothesis that is constant internationally. The factors most closely related to financial illiteracy are: occupation, having dependents, own and parental education, and own and family income. Such results highlight the need for initiatives that economically empower rural communities and reduce vulnerability to financial manipulation and misinformation.

Keywords: Financial illiteracy; Rurality; Socioeconomic and demographic factors.

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RESUMO

O reconhecimento da alfabetização financeira como uma prioridade política global crescente destaca a urgência de abordar o analfabetismo financeiro, especialmente em áreas rurais de países em desenvolvimento. Este estudo concentra-se na zona rural do Município de Capistrano-CE, notável por possuir uma das populações rurais mais significativas da região Maciço de Baturité-CE. O objetivo deste estudo é examinar a relação do nível de alfabetização financeira (comportamento, atitude e conhecimento) com as variáveis socioeconômicas e demográficas na perspectiva da ruralidade, além de incentivar pesquisas similares nas demais áreas rurais do Brasil. Autores como Huston (2010); Remund (2010); Jobin e Losekann (2015); Potrich (2016); Pontara (2019) e OCDE (2020) oferecem a base teórico-conceitual e empírica deste estudo. A coleta de dados foi realizada por meio de pesquisa direta em campo, onde foram aplicados 175 questionários no município em análise. Os resultados indicam que a população pesquisada guarda um baixo nível de alfabetização financeira e compõem a faixa etária de 42 a 80 anos, sendo a maioria do gênero feminino, corroborando a hipótese constante internacionalmente. Os fatores que mais apresentam relação com o analfabetismo financeiro são: ocupação, possuir dependentes, escolaridade própria e dos pais e renda própria e familiar. Tais resultados evidenciam a necessidade de iniciativas que empoderem economicamente as comunidades rurais e reduzam a vulnerabilidade à manipulação e à desinformação financeira.

Palavras-chave: Analfabetismo financeiro; Ruralidade; Fatores socioeconômicos e demográficos.

RESUMEN

El reconocimiento de la educación financiera como una creciente prioridad política global resalta la urgencia de abordar el analfabetismo financiero, especialmente en las zonas rurales de los países en desarrollo. Este estudio se centra en la zona rural del Municipio de Capistrano-CE, destacada por tener una de las poblaciones rurales más significativas de la región de Maciço de Baturité-CE. El objetivo de este estudio es examinar la relación entre el nivel de alfabetización financiera (comportamiento, actitud y conocimiento) con variables socioeconómicas y demográficas desde la perspectiva de la ruralidad, además de fomentar investigaciones similares en otras áreas rurales de Brasil. Autores como Huston (2010); Remund (2010); Jobin y Losekann (2015); Potrich (2016); Pontara (2019) y OCDE (2020) ofrecen la base teórico-conceptual y empírica de este estudio. La recolección de datos se realizó mediante investigación directa de campo, donde se administraron 175 cuestionarios en el municipio bajo análisis. Los resultados indican que la población encuestada tiene un bajo nivel de educación financiera y tiene edades entre 42 y 80 años, siendo la mayoría mujeres, corroborando la hipótesis que es constante a nivel internacional. Los factores más relacionados con el analfabetismo financiero son: ocupación, tener dependientes, educación propia y de los padres, e ingresos propios y familiares. Estos resultados resaltan la necesidad de iniciativas que empoderen económicamente a las comunidades rurales y reduzcan la vulnerabilidad a la manipulación financiera y la desinformación.

Palabras clave: Analfabetismo financiero; Ruralidad; Factores socioeconómicos y demográficos.

1 INTRODUCTION

In May 2020, the Organization for Economic Co-operation and Development (OECD) identified that more than 70 countries and economies were involved in projects to implement national financial education strategies. Brazil has been part of this list since 2010,

when it established the National Financial Education Strategy (ENEF) through Decree No. 7,397/2010, later renewed in 2020 by Decree No. 10,393/2020. As a member of the G20, Brazil adopted this initiative as a permanent state policy (Reis, 2023).

However, according to data provided by the World Bank, only 3.64% of Brazilians save with a focus on retirement, revealing a comparatively low rate compared to other Latin American countries such as Mexico and South Africa (OECD, 2020; Reis, 2023). According to reports provided by Serasa, Brazil had 65.17 million defaulters in February 2022, increasing to 72 million in October 2023 (Serasa, 2023).

The advancement of technology and the complexity of financial transactions have made financial literacy essential globally. In rural contexts, often neglected, this need is even more critical. Financial illiteracy in this context directly reflects on the Brazilian economy and impacts both emerging and developed economies (Pontara, 2019; Reis, 2023).

Thus, the rural area of the Municipality of Capistrano, located in the rural territory of Maciço de Baturité, in the interior of Ceará, was selected. It stands out as one of the municipalities with a predominantly rural character and one of the five with the highest agricultural Gross Domestic Product (GDP) (IBGE, 2017). Additionally, the following question arises: what is the relationship between financial illiteracy and socio-economic and demographic variables in the rural area of the Municipality of Capistrano – CE?

To answer this question, the following objectives were established: 1. Identify the socio-economic and demographic profile of the surveyed population; 2. Describe the financial behavior, financial attitudes, and financial knowledge of the respondents; and 3. Analyze the relationship between socio-economic and demographic factors and the level of financial literacy.

Due to the various disparities in financial literacy, especially concerning socio-economic and demographic factors, it is essential to focus attention on the groups considered most vulnerable, including those residing in rural areas, when conducting studies in this field. Understanding the socio-economic and financial context of these individuals will undoubtedly help policymakers and strategists to focus their efforts more precisely, avoiding the implementation of one-size-fits-all solutions that do not adequately meet all needs (Agarwalla et al., 2012; Potrich, 2016; Reis, 2023).

Authors such as Huston (2010); Remund (2010); Jobin and Losekann (2015); Potrich (2016); Pontara (2019) and OECD (2020) provide the theoretical-conceptual and empirical basis of this study. Therefore, it is based on a multidisciplinary perspective as a strategy to understand financial behavior, financial attitudes, and financial knowledge based

on the relationship with the socio-economic and demographic factors of the surveyed rural population. Furthermore, this study seeks to contribute to the literature by providing an argumentative basis for future research.

The work is structured as follows: introduction, which provides an overview of the topic, the research problem, the objectives, and the justification. Next is the literature review, which addresses financial literacy and its relationship with socio-economic and demographic variables; and rural financial illiteracy. After that, the methodology is presented, based on the aforementioned works. Then, the results and discussion are addressed, and finally, the relevant final considerations of the study are presented.

2 LITERATURE REVIEW

2.1 Relationships Between Socio-Economic and Demographic Variables and Financial Literacy

Most studies addressing this field emphasize the ambiguous use of financial literacy, stating that the terms "financial literacy" and "financial education" are used synonymously.

Robb, Barbiarz, and Woodyard (2012) present a distinction between the terms, asserting that financial literacy implies the ability to understand financial information and make assertive decisions using this information, while financial education is merely the recall of facts (financial knowledge). The authors further state that financial education encompasses the process by which people improve their understanding of financial products and services, whereas financial literacy, more complexly, refers to the ability to use this knowledge and acquired skills to manage resources assertively, thus providing financial well-being.

According to Huston (2010), financial literacy encompasses two main dimensions: understanding, which involves personal financial knowledge and education, and use, which implies the application of this knowledge in managing personal finances. Jobin and Losekann (2015) argue that financial literacy is the fundamental bias to guide citizens in making more efficient monetary decisions, reflecting the exercise of citizenship.

Remund (2010), in reviewing various research sources, identified five categories encompassing the definitions of financial literacy: knowledge of financial concepts, ability to communicate these concepts, aptitude in managing personal finances, skills for making appropriate financial decisions, and effective planning for future needs. Based on these

categories, the author defines financial literacy as the measure of understanding financial concepts, skills, and confidence to manage finances in the face of economic changes. In rural contexts, this perspective presents itself as one of the justifications for the need for financial literacy in rural areas, as a resilient means of coping with economic and financial crises and fluctuations that directly affect personal income and local development (Reis, 2023).

However, a widely recognized definition of financial literacy is that of the OECD, which considers it a combination of skills, awareness, knowledge, attitude, and behavior necessary to make sound decisions and ultimately achieve individual financial well-being (OECD, 2020; Reis, 2023).

The topic of financial literacy has recent discussions in the academic realm. Thus, several studies have been developed and conducted to understand this term and, thereby, understand ways to measure the level of financial literacy of different groups of individuals (Floriano; Flores; Zuliane, 2020; Nanziri; Leibbrandt, 2018). Some studies present determinants associated with levels of financial literacy, which are mostly related to socio-economic and demographic variables (Nanziri; Leibbrandt, 2018).

To understand the relationship between differences in socio-economic and demographic variables and financial literacy, some of the main studies that clarify the distinct behaviors among individuals regarding gender, age, marital status, dependents, occupation, education level, parents' education level, personal and family average monthly income, and the contexts in which they become financially literate (Reis, 2023).

The gender variable is pointed out as an influencing factor in the level of financial literacy, with males holding a higher level (Floriano; Flores; Zuliane, 2020; Potrich; Vieira; Kirch, 2016). According to studies by Lusardi and Mitchell (2011) in the United States, women demonstrate a lower probability of correctly answering questions and a higher propensity to state that they do not know, tending to evaluate their financial literacy level more conservatively. This trend is observed by the authors in almost all analyzed countries, both developed and developing.

Mottola (2013) found gender differences not only in financial literacy but also in financial behavior. According to this author, women with low levels of financial literacy exhibit costly behaviors in using credit cards compared to males. Conversely, this differentiation does not exist between men and women with high levels of financial literacy.

Women tend to be less attached to the labor market as they often have their careers interrupted due to pregnancy, thus having fewer financial resources over their lifetime. This

justifies the importance of women being financially literate, as they tend to live longer than men and, therefore, need to plan for retirement, given that they are more likely to spend more due to their longer life expectancy (Bucher-Koenen et al., 2014).

Regarding the age variable, studies report that the relationship between age and financial literacy tends to be higher among adults in the middle of their life cycle and generally lower among young people and the elderly, presenting an inverted U-shape (Agarwal et al., 2009; Atkinson; Messy, 2012). According to Lusardi and Mitchell (2011), respondents aged between 25 and 65 tend to answer 5% more questions correctly than those outside this age range. The highest levels of financial literacy are usually found in middle-aged adults (Floriano; Flores; Zuliane, 2020). Conversely, Silva et al. (2017) found that age does not significantly influence individuals' financial literacy.

As for the marital status variable, some authors highlight its influence, noting that married individuals have higher financial literacy levels than single ones (Floriano; Flores; Zuliani, 2020; Agarwala et al., 2012). Lusardi and Mitchell (2011) found that being widowed can positively impact one's ability to answer financial literacy questions correctly (Floriano; Flores; Zuliani, 2020). However, Silva et al. (2017) argue that such evidence does not prove the influence of marital status on financial literacy, requiring further investigation.

Another variable associated with financial literacy is occupation. Individuals with longer service tenure tend to undergo more financial experiences and, therefore, possess greater knowledge, making it easier to analyze more complex and well-founded information (Chen; Volpe, 1998). Employment status can influence financial attitudes and behavior, as individuals with stable income tend to organize their financial lives (Potrich, 2016). According to Kim and Garman (2004), financial illiteracy is related to low work performance and productivity.

Regarding education level, studies have found that higher levels of financial literacy are prevalent among more educated individuals who thus have greater access to financial information (Silva et al., 2017). According to Potrich (2016), most people without a university degree do not know the answer or respond incorrectly to the question about risk diversification. In the same vein, Clarke et al. (2005) state that parents significantly influence their children's behavior, aligning with research indicating that most people acquire financial knowledge from their parents.

As for the income variable, studies confirm that increasing income levels, both personal and family, influences the increase in financial literacy levels (Potrich, 2016; Atkinson; Messy, 2012). Atkinson and Messy (2012) argue that low-income levels are

associated with lower financial literacy levels, as low-income individuals generally have difficulty accessing education. Conversely, individuals with high financial literacy levels, by making better financial decisions, achieve higher income levels.

Concerning the variable of having dependents, Potrich (2016) states that individuals with dependents tend to be more concerned with budgeting and consequently have higher financial literacy levels, aiming for family well-being. However, the author's empirical results do not support this perspective. Conversely, Mottola (2013) argues that individuals with dependents are more likely to have low financial literacy levels and incur higher credit card debts.

Therefore, the aforementioned studies imply an association between financial literacy and socio-economic and demographic variables, which can be evaluated and considered for defining efficient strategies or public policies.

2.2 Rural Financial Illiteracy

Rural financial illiteracy presents a series of challenges. In these contexts, the lack of access to banking and financial services, combined with a scarcity of financial education, contributes to the perpetuation of a cycle of exclusion and economic vulnerability. Many rural residents have little or no knowledge of basic financial concepts such as budgeting, saving, and investing, making them more susceptible to financial traps and exploitation by intermediaries (Reis, 2023).

Globalization and technological development have demanded a new approach from individuals, who must adopt a more active role in managing their finances and enhance their financial skills to adapt to the new scenario. It is no secret that Brazil faces structural difficulties when it comes to education. Specifically regarding mathematics education, it can be concluded that there exists a type of illiteracy that contributes to one of the deficiencies with the most significant short- and long-term consequences: financial illiteracy, which affects children, youth, and adults alike (Silva et al., 2017).

The impacts of rural financial illiteracy extend beyond the individual, affecting the economic development of rural communities and regions as a whole. The inability to adequately manage personal finances can lead to excessive debt, lack of investment in productive activities, and low local economic development, contributing to rural exodus. The absence of solid financial knowledge can make it more difficult to manage crises, whether they involve resources or enterprises, rendering individuals more vulnerable to economic

fluctuations and potentially making rural life less economically sustainable, thus contributing to migration in search of more viable economic opportunities (Savoia; Saito; Santana, 2007; Pontara, 2019; Reis, 2023).

In recent years, governments have sought to expand credit to encourage consumption and increase production. However, household consumption is not sufficient to stimulate investment and generate jobs, leading many to seek easy credit without considering its impact on their budget. This results in indebtedness and default, disrupting lending and reducing economic activity, creating a vicious cycle of growth and contraction (Savoia; Saito; Santana, 2007; Reis, 2023).

Education in rural areas is still a developing factor in the Brazilian scenario, as previously discussed, consequently presenting a challenging panorama, considering the existing specificities. The preceding generation has a very low level of education, and this limited knowledge is passed on between parents and children (when it is passed on), forming a generation with little specialized knowledge (Pontara, 2019; Reis, 2023). Denying financial knowledge access to these families would only reinforce existing disparities, perpetuating a system that favors only certain groups. In this sense, the relevance of studies addressing the specificities of the rural context and aiming at adapted financial educational strategies stands out.

According to Pontara (2019), financial illiteracy is a reality in rural areas and is the result of significant changes that directly impact the behavior of people living in the countryside, leading to a disordered economic scenario, especially for those who depend on rural incomes.

Financial illiteracy in low-income communities can perpetuate the cycle of economic vulnerability, making it difficult to seek opportunities for growth and financial stability. Promoting financial education in rural contexts and across all social strata enables conscious decision-making and contributes to breaking the cycle of poverty (Pontara, 2019; Reis, 2023).

3 METHODOLOGY

This study constitutes a master's research project and was submitted to the Research Ethics Committee of the Federal University of Ceará (CEP/UFC/PROPESQ), linked to the Pro-Rectorate for Research and Graduate Studies, accredited by the National Commission for Ethics in Research (CONEP) of the Ministry of Health, aimed at evaluating

and monitoring the ethical aspects of all research involving human subjects. The submission to CONEP was made through Plataforma Brasil, the national registry platform for research involving human subjects (In anima nobili).

After submission, the project was reviewed by the Research Ethics Committee with Human Beings (CEP) of the Federal University of Ceará (UFC) and approved under identification number 65373422.8.0000.5054 (Certificate of Ethical Appreciation Presentation - CAAE). In compliance with the requirements imposed by Resolution CNS 466/12 of the National Health Council (CNS), the questionnaire and the Free and Informed Consent Form (FICF) were provided. Only respondents who, after reading and signing the form, agreed to participate in the research were included.

This study focuses on the rural area of the municipality of Capistrano, Ceará. It is part of the rural territory of Maciço de Baturité, located in the interior of the state of Ceará. Located at an average distance of 100 km from the capital Fortaleza, it covers a total area of 4,820 km² and comprises thirteen municipalities, which are part of the semi-arid region, namely: Redenção, Acarape, Aracoiaba, Aratuba, Barreira, Baturité, Capistrano, Mulungu, Itapiúna, Ocara, Palmácia, Pacoti, and Guaramiranga, with a population of approximately 240,000 inhabitants, according to data from the Institute for Economic Research and Strategy of Ceará (Ipece, 2015).

This research is an in-depth case study, preserving the unity of the studied object (Gil, 2010). An exploratory research was conducted to gain greater familiarity with the problem; the approach was qualitative-quantitative to better understand behavior and minimize data heterogeneity, allowing a holistic view of the studied phenomenon and significantly enriching the integrated bias of the study (Gil, 2010). The research strategy adopted was a survey, using a structured questionnaire to obtain specific information from participants.

The municipality of Capistrano has a rural population of 10,851 individuals, according to the 2010 Demographic Census (last available with stratified data during the research). A sampling process was conducted to obtain a representative sample, allowing for reliable generalizations. With a confidence level of 95% and a sampling error of 6%, the final sample was 169 individuals, but a total of 175 respondents were reached.

For the development of this study, a hypothesis to be tested in this study was elaborated a priori, based on the relevant literature relations between the constructs to be analyzed. In this study, financial literacy and the relationship of its constructs - financial behavior, financial knowledge, and financial attitude - with socio-economic and demographic

variables in the rural context were analyzed.

For the analysis of the collected data, descriptive statistics and statistical inference were used. A priori, for the descriptive analysis of financial attitude and financial behavior constructs, Likert-type questions with five points (1 - totally disagree to 5 - totally agree) were considered, and for the financial knowledge construct, multiple-choice questions were applied, with a value of 0 assigned to incorrect answers and a value of 1 to correct answers.

With the aim of analyzing the influence of socio-economic and demographic variables on financial literacy, Student's t-tests for independent samples, variables with up to two groups, and analysis of variance - ANOVA for variables with more than two groups were applied to verify significant differences between the analyzed groups, both are parametric tests and present as a decision criterion the significance level of 5% (p -value / $P < 0.05$) (Fávero; Belfiore, 2017).

4 ANALYSES AND RESULTS

4.1 Socioeconomic and Demographic Profile of the Sample

For this analysis, descriptive statistics were used, considering, a priori, the absolute (AF) and relative (RF) frequencies for each question. The initial results are presented in Table 01.

Table 01 – Frequency of Socioeconomic and Demographic Variables

Variables		FA	FR
Mean age	43 years	-	-
Age (VSD1)	Up to 31 years	49	28%
	32 to 41 years	39	22,3%
	42 to 53 years	45	25,7%
	Above 53 years	42	24%
Gender (VSD2)	Male	74	42,3%
	Female	101	57,7%
Marital status (VSD3)	Single	61	34,9%
	Married / Stable union	96	54,9%
	Separated / Divorced / Widowed	18	10,3%
Dependents (VSD4)	No	65	37,1%
	Yes	110	62,9%
Own education level (VSD5)	Never studied	19	10,9%
	Elementary school	83	47,4%
	High school	52	29,7%
	Technical course	1	0,6%

	Undergraduate degree	16	9,1%
	Specialization or MBA	1	0,6%
	Master's/Doctorate/Post-doctorate	3	1,7%
Mother's education level (VSD6)	Never studied	58	33,1%
	Elementary school	105	60%
	High school	10	5,7%
	Undergraduate degree	1	0,6%
	Specialization or MBA	1	0,6%
Father's education level (VSD7)	Never studied	73	41,7%
	Elementary school	96	54,9%
	High school	4	2,3%
	Undergraduate degree	2	1,1%
Occupation (VSD8)	Commercial Agriculture (sale of cultivated products)	2	1,1%
	Subsistence Agriculture (own and family consumption)	76	43,4%
	Retired	16	9,1%
	Public Servant	12	6,9%
	Private Employee	6	3,4%
	Self-employed	42	24%
	Commerce	16	9,1%
	Currently not working	5	2,9%
Own average income (VSD9)	Up to 1 minimum wage (R\$ 1,212.00)	150	85,7%
	From 1 to 3 minimum wages (R\$ 1,212.01 to R\$ 3,636.00)	24	13,7%
	From 3 to 6 minimum wages (R\$ 3,636.01 to R\$ 7,272.00)	1	0,6%
Family average income (VSD10)	Up to 1 minimum wage (R\$ 1,212.00)	97	55,4%
	From 1 to 3 minimum wages (R\$ 1,212.01 to R\$ 3,636.00)	73	41,7%
	From 3 to 6 minimum wages (R\$ 3,636.01 to R\$ 7,272.00)	5	2,9%

Source: Authors (2023).

The majority of the study participants are female (57.7%), aged up to 31 years (28%), married or in a stable union (54.9%), and have dependents (62.9%). Most have elementary education (47.4%) and report that both their mothers (60%) and fathers (54.9%) have only this level of education, highlighting the significant influence of parental education

on the level of financial literacy (Clarke et al., 2005). Additionally, most participants reported receiving up to one minimum wage, both in their own income (85%) and in family income (55.4%), primarily from occupations in agriculture.

The unequal access to quality education between rural and urban areas in Brazil, as highlighted by Pontara (2019), is reflected in the low educational level of the respondents. The predominance of agricultural occupations, such as subsistence farming, is also evident in this region, corroborating information from IBGE (2017) on the Gross Value of Agricultural Production (GVAp) in Capistrano (Reis, 2023).

4.2 Descriptive Analysis

The first construct analyzed is financial attitude. In this analysis, the scale varies in an ascending manner, where 1 corresponds to excellent financial attitudes and 5 corresponds to poor financial attitudes. This construct consists of four questions that were interpreted inversely, meaning the higher the value found on the scale, the worse the respondent's financial attitude (see Table 02).

Table 02 – Valid Percentage on the Financial Attitude Construct Scale

Const.	Var.	Relative Frequency				
		Total Disagree (1)	Disagree (2)	Indifferent (3)	Agree (4)	Total agree (5)
ATIT	I don't worry about the future; I live only in the present.	16,6%	21,1%	13,1%	26,9%	22,3%
	To save is impossible for our family.	14,3%	17,7%	9,7%	41,1%	17,1%
	I like to buy things because it makes me feel good.	12,6%	24%	17,7%	28%	17,7%

	It's difficult to build a family budget plan.	12,6%	12%	8,6%	45,1%	21,7%
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Source: Authors (2023).

The relative frequencies indicate that the majority of participants agree on not worrying about the future and enjoying only the present (26.9%), as well as believing that saving is impossible for them and their families (41.1%). Most also state they enjoy shopping because it feels good (28%) and have difficulties in building a family budget plan (45.1%). The results highlight a predisposition of respondents towards counterproductive financial attitudes, mainly related to planning and saving within the family context.

In this perspective, addressing these issues requires a holistic understanding of the complex interactions between education, economics, and financial behavior. Considering that the majority of rural respondents face economic challenges, it is understood that such financial attitudes may be influenced not only by individual factors but also by the context in which they live. Unfavorable economic conditions and lack of access to quality education can contribute to the perpetuation of these counterproductive attitudes, especially in rural contexts.

Subsequently, the construct of financial behavior is analyzed. The scale consists of eight five-point Likert scale questions. In this construct, it was considered that the lower the frequency of the respondent's agreement with the statements, the worse their financial behavior (see Table 03).

Table 03 – Valid percentage on the financial behavior construct scale

Const.	Var.	Relative Frequency				
		Never (1)	Almost never (2)	Sometimes (3)	Almost always (4)	Always (5)
COMP	I record and/or track my personal expenses (e.g., spreadsheet of monthly income and expenses)	47,4%	9,1%	8,6%	17,7%	17,1%
	I compare prices when making a purchase.	9,1%	0,6%	5,7%	12,6%	72%

I set goals to guide my financial decisions.	25,7%	9,1%	25,1%	16%	24%
I pay my bills on time.	4%	4,6%	5,1%	26,9%	59,4%
I spend money before I get it	36%	11,4%	14,9%	19,4%	18,3%
I often borrow money from family or friends to pay bills.	66,9%	6,3%	13,7%	4%	9,1%
I pay my credit card bills in full to avoid interest charges.	44%	4%	1,7%	4,6%	45,7%
I have been able to save money.	60,6%	13,7%	9,1%	6,3%	10,3%

Source: Authors (2023).

According to the relative frequencies of the financial behavior construct, 47.7% of respondents claim to never record and/or track their personal expenses, and 25.7% say they never set goals to guide their financial decisions. However, 72% ensure that they always compare prices before making a purchase. The majority of individuals assert that they never spend money before obtaining it (36%), corroborating with the majority of respondents from the previous question. 59.4% state that they settle their debts within the due date and pay their credit card bills in full to avoid interest charges, respectively. Similar results were found in the studies by Shockey (2002) and Potrich (2016) regarding the payment of monthly bills.

In this study, the majority of respondents stated they have never borrowed money from family or friends to pay their bills (66.9%), and 60.6% report never having saved money. These results reveal that more than half of the representative sample from rural areas do not engage in savings actions, which aligns with the trend of not worrying about the future, as observed in the previous construct.

Given the presented results, it becomes evident to highlight the complexity of financial behavioral issues faced in rural areas. Financial illiteracy, far from just being a lack of knowledge, is often intrinsically linked to unfavorable socioeconomic conditions that limit the financial decisions of rural families. However, recognition of immediate priorities, such as family subsistence, leads to the possible planning of strategies that can reconcile these needs with the promotion of balanced financial practices.

Lastly, the third construct analyzed was financial knowledge, based on a set of

multiple-choice questions. The set consists of six questions and aims to measure financial skills by exploring the level of knowledge regarding simple division, percentages, inflation, among others (see Table 04).

Table 04 – Valid percentage of the financial knowledge construct

Const.	Var.	Alternatives	FR
CONH	Suppose that in the year 2023 your income will double and the prices of all goods will also double. In 2023, how much will you be able to buy with your income?	Less than today	45,71%
		More than today	8,6%
		Exactly the same*	37,71%
		I don't know	8%
	Considering a long period (e.g., 10 years), which asset typically offers the highest return?	Savings	17,14%
		Stocks*	4%
		Treasury bonds	1,71%
		I don't know	77,14%
	You lend R\$ 1,000.00 to a friend and he returns R\$ 1,200.00 to you the next day. How much interest did he pay on this loan?	20%*	50,81%
		10%	1,71%
		2%	2,81%
		I don't know	44,5%
	Suppose you saw the same television in two different stores for the initial price of R\$ 1,000.00. Store A offers a discount of R\$ 150.00, while store B offers a discount of 10%. Which is the better option?	Store A (R\$ 150.00 discount)*	40,5%
		Store B (10% discount)	15%
		I don't know	44,5%
	Imagine five friends receive a donation of R\$ 1,000.00 and need to divide the money equally among themselves. How much will each one receive?	R\$ 100.00	2,8%
		R\$ 500.00	0,6%
		R\$ 200.00*	77,7%
I don't know		18,8%	
When inflation rises, the cost of living goes up. This statement is:	False	0,6%	
	True*	89,14%	
	I don't know	10,28%	

Source: Authors (2023).

Note: *correct answer.

The analysis of relative frequencies of the financial knowledge construct revealed that respondents have a low level of understanding about everyday financial aspects, with only one question reaching a medium level of knowledge (CONH5 - 77.7%) and another achieving a high level (CONH6 - 89.14%), related to knowledge about inflation. This result

can be attributed to the inflationary fluctuations faced by Brazil in recent years, reflecting in the increased cost of living experienced by the population (Reis, 2023).

The results also indicate that the majority of respondents chose the "I don't know" option in question CONH2 (77.14%), revealing low knowledge about investment options/financial assets. This demonstrates a concerning scenario, as basic financial knowledge is essential for everyday transactions and may be related to topics frequently covered in the news and experienced in purchasing situations (Potrich, Vieira; Kirch, 2016; Reis, 2023).

The low financial knowledge among rural respondents is intrinsically related to a variety of factors, including economic, financial, social, and primarily educational aspects. It is recognized that improving financial knowledge in rural communities requires a coordinated effort that addresses educational aspects adapted to the specificities identified in the studied rural context (Pontara, 2019; Reis, 2023).

4.3 Influence of socioeconomic and demographic variables on financial literacy

For the understanding of the influence of socioeconomic and demographic variables (SDV) on financial constructs (financial attitude, behavior, and knowledge), the student's t-test and analysis of variance - ANOVA were used. The analysis to understand significant differences was carried out by comparing the means of groups that showed significant differences.

All socioeconomic and demographic variables from the questionnaire were analyzed. Thus, ten variables were considered: age, gender, own and parental education, marital status, occupation, dependents, and own and family income. Only significant results are presented due to the extensive data, concerning each analyzed construct.

It is worth noting that the tables have a legend regarding the application of each test, where variables labeled with (1) correspond to up to two groups and were tested using the t-test, while variables labeled with (2) correspond to more than two groups and were tested using analysis of variance - ANOVA. The significant results regarding the influence of socioeconomic and demographic variables on the investigated constructs (financial attitude - ATIT; financial behavior - COMP; and financial knowledge - CONH) are presented below.

The first construct analyzed was financial attitude (see Table 05). It is noted that out of ten variables, seven showed significant differences between the groups (age, own and parental education, occupation, own and family income), with "own education" and

"occupation" of the respondent standing out as factors with the highest number of variables related to the ATIT construct.

Table 05 – t-tests (1) and ANOVA (2) for SDV in the financial attitude construct

Const.	Var.	Parametric tests (t-test and ANOVA)	
		Statistical value	Significance (P-value)
AGE (1)	ATIT1	-2,051	0,042*
OWN EDUCATION (2)	ATIT1	2,985	0,009**
	ATIT2	2,508	0,024*
	ATIT3	2,465	0,026*
	ATIT4	3,343	0,004**
MOTHER'S EDUCATION (2)	ATIT2	2,800	0,028*
FATHER'S EDUCATION (2)	ATIT1	2,840	0,040*
OCCUPATION (2)	ATIT1	3,428	0,002**
	ATIT3	2,754	0,010**
	ATIT4	2,382	0,024*
OWN INCOME (2)	ATIT4	4,078	0,019*
FAMILY INCOME (2)	ATIT2	3,464	0,034*
	ATIT3	3,851	0,023*

Source: Authors (2023).

Note: Statistical Significance: (*) $P < 0,05$; (**) $P < 0,01$; (***) $P < 0,001$.

Regarding the age of the respondent, it was found that individuals aged between 18 and 41 years old exhibit the best financial attitudes in the surveyed region [mean 2.95 - T (-2.051; $P < 0.05$)]. In contrast, research participants aged between 42 and 80 years old exhibit the worst financial attitudes. Some of the main studies regarding the relationship between age and financial literacy state that it generally tends to be higher among adults in the middle of their life cycle (Atkinson; Messy, 2012).

Regarding the variable own education, individuals with undergraduate and Master's/Doctorate/Post-doctorate degrees stand out as having the best financial attitudes [mean 1.00 - F ($P < 0.01/0.05$)]. As individuals' education levels increase, their financial attitudes improve, corroborating with Potrich (2016), who asserts that higher levels of financial literacy are found in individuals with higher education levels and greater access to financial information. Regarding parental education levels, mothers with high school education and fathers with elementary school education stand out as having the best financial attitudes [mean 2.10 - F (2.800; $P < 0.05$) - mother]; [mean 2.90 - F (2.840; $P < 0.05$) - father].

Analyzing the respondents' occupations, it was found that commercial farmers exhibit the best financial attitudes compared to other occupations [mean 1.33 - F (P < 0.01/0.05)]. In contrast, retirees stood out as having the worst financial attitudes, corroborating with Potrich's study (2016). According to Lusardi and Mitchell (2011), individuals who do not work, have less lucrative or stable occupations tend to have a higher tendency towards negative financial attitudes than those who are employed, facing greater difficulties in developing adequate financial skills.

Regarding own income, individuals earning 1 to 3 minimum wages (R\$ 1,212.01 to R\$ 3,636.00) demonstrate better financial attitudes [mean 2.88 - F (4.078; P < 0.05)]; while for the variable family income, respondents earning 3 to 6 minimum wages (R\$ 3,636.01 to R\$ 7,272.00) are the ones with the most favorable attitudes. Other studies have shown similar results, indicating that individuals with higher incomes tend to exhibit better financial attitudes (Potrich, 2016; Agarwalla et al., 2012).

Next, the next construct analyzed was financial behavior, where it was demonstrated that eight socioeconomic and demographic variables showed significant differences (gender, dependents, marital status, own and mother's education, occupation, own and family income), with "dependents", "occupation", "own income" and "family income" standing out as factors with the highest number of variables related to the COMP construct. The results are presented in Table 06.

Table 06 – t-tests (1) and ANOVA (2) for SDV in the financial behavior construct

SDV	Const.	Parametric tests (t-test and ANOVA)	
		Statistical value	Significance (P-value)
GENDER (1)	COMP8	3,0777	0,002**
DEPENDENTS (1)	COMP3	2,516	0,013*
	COMP7	2,427	0,016*
	COMP8	3,435	0,000***
MARITAL STATUS (2)	COMP4	7,732	0,001***
	COMP8	6,348	0,002**
OWN EDUCATION (2)	COMP4	2,947	0,009**
MOTHER'S EDUCATION (2)	COMP6	2,474	0,046*
OCCUPATION (2)	COMP3	2,954	0,006**
	COMP4	3,983	0,000***
	COMP7	2,872	0,007**
	COMP8	2,783	0,009**
OWN INCOME (2)	COMP2	6,375	0,002**
	COMP3	3,068	0,049*

	COMP7	4,229	0,016*
	COMP8	5,541	0,005**
FAMILY INCOME (2)	COMP2	15,562	0,000***
	COMP3	11,006	0,000***
	COMP6	3,255	0,041*
	COMP7	7,942	0,001***
	COMP8	5,269	0,006**

Source: Authors (2023).

Note: Statistical Significance: (*) $P < 0,05$; (**) $P < 0,01$; (***) $P < 0,001$.

It is observed that male respondents have the best financial behaviors [mean 2.28 - T (3.0777; $P < 0.01$)] compared to female respondents (mean 1.65). Some of the main results found in other studies state that women have lower levels of financial literacy (Chen; Volpe, 1998; Mottola, 2013). Lusardi and Mitchell (2011) found in their studies that women are prone to respond that they do not know the answer or to respond incorrectly.

Regarding the "dependents" variable, the group of individuals who do not have any dependent persons conditioned to their income exhibit the most favorable financial behaviors [mean 3.08 - T ($P < 0.001/0.05$)], corroborating with the study by Mottola (2013). Financial responsibility for dependents tends to create additional pressures on family financial resources, thereby increasing the likelihood of financial illiteracy among rural residents (Potrich, 2016).

In terms of marital status, singles are shown to have the best financial behaviors [mean 3.48 - F ($P < 0.01$)]. Regarding own education, respondents with undergraduate and specialization degrees demonstrate better financial behaviors [mean 5.00 - F (2.947; $P < 0.01$)].

Related to the respondent's mother's education, those with technical degrees stood out as having the best financial behaviors [mean 5.00 - F (2.474; $P < 0.05$)]. Analyzing the participants' occupations, those with private sector jobs stand out as having better financial behaviors [mean 4.33 - F ($P < 0.01/0.001$)]. Finally, regarding the ranges of own and family income, respondents and families earning 1 to 3 minimum wages (R\$ 1,212.01 to R\$ 3,636.00) demonstrate better financial behaviors [means 3.57 and 3.23, respectively - ($P < 0.05$; $P < 0.01$; $P < 0.001$)].

Lastly, the last construct analyzed is financial knowledge, in which seven significant variables were identified (age, dependents, marital status, own and parental education, and occupation), with "mother's education" and "father's education" standing out as factors with the highest number of variables related to the CONH construct. The significant results are presented in Table 07.

Table 07 – Value and Significance of t-tests (1) and ANOVA (2) for SDV in the financial knowledge construct

VSD	Const.	Parametric tests (t-test and ANOVA)	
		Statistical value	Significance (P-value)
AGE (1)	CONH5	2,090	0,038*
DEPENDENTS (1)	CONH5	2,619	0,010**
MARITAL STATUS (2)	CONH2	4,402	0,014*
	CONH4	3,434	0,034*
OWN EDUCATION (2)	CONH2	5,233	0,000***
	CONH6	2,865	0,011*
MOTHER'S EDUCATION (2)	CONH3	4,277	0,003**
	CONH4	4,855	0,001***
	CONH5	2,837	0,026*
FATHER'S EDUCATION (2)	CONH2	2,877	0,038*
	CONH3	5,029	0,002**
	CONH4	3,189	0,025*
OCCUPATION (2)	CONH3	4,451	0,000***

Source: Authors (2023).

Note: Statistical Significance: (*) $P < 0,05$; (**) $P < 0,01$; (***) $P < 0,001$.

Analyzing the age variable, the group of individuals aged between 18 and 41 stand out as having more favorable financial knowledge [mean 0.85 - T (2.090; $P < 0.05$)], along with individuals who do not have dependents [mean 0.89 - T (2.619; $P < 0.01$)].

Regarding marital status, individuals who are divorced or widowed exhibited better financial knowledge compared to others [mean 0.42 - $P < 0.05$], corroborating with the studies of Lusardi and Mitchell (2011), which state that being widowed can positively impact responses to questions related to financial literacy.

Regarding the level of own and parental education, respondents with a bachelor's degree appear to have the highest positive financial knowledge [mean 1.00 - ($P < 0.001/0.05$)]; along with the respondent's mother having a specialization degree and the father having completed high school [mean 1.00; ($P < 0.001/0.05$ - mother); mean 0.58; ($P < 0.01/0.05$ - father)]. And finally, concerning the occupation variable, it was found that commercial farmers have better financial knowledge [mean 1.00 - (F (4.451; $P < 0.001$)); in contrast, retired individuals have unfavorable financial knowledge. Therefore, financial education is higher among those who are employed compared to those who are not.

5 FINAL CONSIDERATIONS

The initial analyses concluded that rural respondents in the municipality of Capistrano-CE have low levels of financial attitudes, behaviors, and knowledge. These results highlight the predisposition of the respondents to act negatively, indicating a lack of financial education and attitudes that may lead to counterproductive financial behaviors. It was also observed that some socio-economic and demographic variables play a significant role in the financial illiteracy of the surveyed rural population, particularly occupation, own and parental education, own and family income, as well as the presence of dependents.

It is understood that the reflection on rural financial illiteracy should go beyond the lack of knowledge, delving into the complexities of the socio-economic conditions that directly impact the financial choices of families. In many contexts, low socio-economic status forces families to prioritize immediate subsistence, leaving little room for savings and investment.

In this sense, the promotion of financial literacy should consider not only the transmission of theoretical knowledge but also the creation of strategies and tools adapted to the reality of these families, aiming to empower them to better manage their resources in the face of significant financial challenges historically present in this context, such as initiatives that encourage saving, even on a small scale, and provide support for diversifying family income sources, contributing to breaking the cycle of full resource spending. Thus, adopting an integrated approach that combines financial education, financial inclusion, and local entrepreneurship stimulation becomes one of the recommended paths.

Based on the findings, it is suggested to create programs, public policies, or financial education strategies adapted to the specific needs of rural areas and accessible to different age groups and educational levels. Additionally, it is proposed to include financial education in the school curriculum from childhood, as an independent subject, investing in teacher training and the development of educational materials suitable for the rural context.

Furthermore, efforts should be directed towards future research that deepens the understanding of the determinants of financial illiteracy in rural areas and evaluates the effectiveness of educational and socio-economic interventions. Longitudinal studies can assist in the evolution of financial knowledge over time and identify factors that contribute to the improvement or worsening of financial literacy in rural communities. Additionally, comparative studies between different rural regions can help identify common patterns and local specificities, guiding the formulation of contextualized policies.

REFERENCES

AGARWALLA, S. Kumar et al. A survey of financial literacy among students, young employees and the retired in India. **Retrieved February**, v. 26, 2012.

ATKINSON, A.; MESSY, F. Measuring financial literacy: results of the OECD. **International Network on Financial Education (INFE) pilot study**, n. 15, 2012.

BUCHER-KOENEN, T.; LUSARDI, A.; ALESSIE, R.; VAN ROOIJ, M. How financially literate are women? an overview and new insights. **NBER Working Paper**, n. 20793, 2014.

CHEN, H.; VOLPE, R. P. An analysis of personal financial literacy among college students. **Financial Services Review**, v. 7, n. 2, p. 107-128, 1998.

CLARKE, M. D. et al. The acquisition of family financial roles and responsibilities. **Family and Consumer Sciences Research Journal**, v. 33, p. 321-340. 2005.

FÁVERO, L. P.; BELFIORE, P. **Manual de análise de dados**. Rio de Janeiro: Elsevier, 2017.

FLORIANO, M. D. P.; FLORES, S. A. M.; ZULIANI, A. L. B. Educação financeira ou alfabetização financeira: quais as diferenças e semelhanças? **RECAT**, Santa Catarina, v. 8, n. 1, p. 16-33, jan./ jun., 2020.

GIL, A. C. **Como elaborar projetos de pesquisa**. ed. 5. São Paulo: Atlas, 2010.

HUSTON, S. J. Measuring financial literacy. **The journal of consumer affairs**, [s. l.], v. 44, n. 2, p. 296-316. 2010.

INSTITUTO BRASILEIRO DE GEOGRAFIA E ESTATÍSTICA (IBGE). **Censo Demográfico Brasileiro de 2010**. Rio de Janeiro: IBGE, 2012.

INSTITUTO BRASILEIRO DE GEOGRAFIA E ESTATÍSTICA (IBGE). **Censo Agropecuário 2017**. Rio de Janeiro: IBGE. 2017.

IPECE. As regiões de planejamento do Estado do Ceará. **Textos para discussão**. nº 111. Fortaleza: IPECE, 2015.

JOBIM, S. S. A.; LOSEKANN, V. L. **Alfabetização Financeira: mensuração do comportamento e conhecimento financeiros dos universitários da universidade da região da Campanha**, Rio Grande do Sul. Sociais e Humanas, Santa Maria, v. 28, n. 2, p. 125-139, maio/ ago. 2015.

KIM, J.; GARMAN, E. T. Financial stress, pay satisfaction and workplace performance. **Compensation Benefits Review**, v. 36, n. 1, p. 69-76, 2004.

LUSARDI, A.; MITCHELL, O. S. Financial literacy around the world: an overview. **PEF**, v. 10, n. 4, p. 497-508, 2011.

MOTTOLA, Gary R. In our best interest: women, financial literacy, and credit card behavior. **Numeracy**, v. 6, n. 2, p. 4, 2013.

NANZIRI, E. L.; LEIBBRANDT, M. Measuring and profiling financial literacy in South Africa. **South African journal of economic and management Sciences**, n. 21, v. 1, 2018.

OCDE. **Recomendação do conselho sobre alfabetização financeira**: instrumentos jurídicos da OCDE. OECD/LEGAL/046. 2020.

PONTARA, A. Educação financeira como proposta fundamental para a melhoria do desenvolvimento da agricultura familiar brasileira. *In*: SIMPÓSIO NACIONAL DE TECNOLOGIA EM AGRONEGÓCIO. v. 11, n. 1, **Anais [...]**. Ourinhos: FATEC, out. 2019. p. 189-197.

POTRICH, A. C. G. **Alfabetização financeira**: relações com fatores comportamentais e variáveis socioeconômicas e demográficas. Orientadora: Kelmara Mendes Vieira. 2016. Tese (Doutorado em administração) – Programa de Pós-Graduação em administração, da Universidade Federal de Santa Maria (UFSM), Santa Maria, 2016.

POTRICH, A. C. G.; VIEIRA, K. M. KIRCH, G. Você é alfabetizado financeiramente? Descubra no termômetro de alfabetização financeira. **Revista de Administração e Contabilidade da Unisinos**, Rio Grande do Sul, v. 13. n. 2, p. 153-170, abr./ jun., 2016.

REIS, M. V. S. **Alfabetização financeira e ruralidade no município de Capistrano – Ceará**. 2023.86 f. Dissertação (Mestrado em Economia Rural) - Centro de Ciências Agrárias, Universidade Federal do Ceará, Fortaleza, 2023.

REMUND, D. L. Financial literacy explicated: the case for a clearer definition in an increasingly complex economy. **The Journal of Consumer Affairs**, [s. l.], v. 44, n. 2, p. 276- 295. 2010.

ROBB, C. A.; BABIARZ, P.; WOODYARD, A. The demand for financial professionals' advice: the role of financial knowledge, satisfaction, and confidence. **Financial Services Review**, v. 21, n. 4, p. 291-305, 2012.

SAVOIA, J. R. F.; SAITO, A. T.; SANTANA, F. A. **Paradigmas da educação financeira no Brasil**. Rio de Janeiro: RAP, nov./ dez., 2007.

SERASA. **Mapa da inadimplência e renegociação de dívidas no Brasil//2023**. 2021.

SHOCKEY, S. S. **Low-wealth adults financial literacy**: money management behavior and associates factors, including critical thinking. Tese (Doutorado em Filosofia) - University of Utah, United States, 2002.

SILVA, G. O. *et al.* Alfabetização financeira *versus* educação financeira: um estudo do comportamento de Variáveis Socioeconômicas e Demográficas. **Revista de gestão, finanças e contabilidade**, Rio de Janeiro, v. 7, n. 3, set./ dez., 2017.
