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UNVEILING STUDENTS'INDEBTEDNESS: FINANCIAL BEHAVIOR OR FINANCIAL KNOWLEDGE

REVELANDO O ENDIVIDAMENTO DOS ESTUDANTES: COMPORTAMENTO FINANCEIRO OU CONHECIMENTO FINANCEIRO

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Abstract

There is a growing concern on the increase of indebtedness among young students from different cultures, especially in countries with frauds, ethical issues and lottery lure. A structural equation model was tested on a sample of students of a private university in São Paulo city. Results show that planned consumption, investment and savings decisions decrease the level of debt, while financial knowledge and credit behavior increase the level of student debt. Results suggest that working in behavior and providing learning experiences give better results than investing on knowledge only.

Keywords: Debt. Financial behavior. Financial Knowledge. Socioeconomic and demographic variables.

Resumo

Há uma preocupação crescente com o aumento do endividamento entre jovens estudantes de diferentes culturas, especialmente em países com fraudes, questões éticas e iscas de loteria. Um modelo de equações estruturais foi testado em uma amostra de estudantes de uma universidade privada da cidade de São Paulo. Os resultados mostram que as decisões planejadas de consumo, investimento e poupança diminuem o nível de endividamento, enquanto o conhecimento financeiro e o comportamento de crédito aumentam o nível de endividamento estudantil. Os resultados sugerem que trabalhar no comportamento e proporcionar experiências de aprendizagem dá melhores resultados do que investir apenas no conhecimento.

Palavras-chave: Endividamento. Comportamento financeiro. Conhecimento financeiro. Variáveis socioeconômicas e demográficas.

Introduction

In recent years, the world economy has undergone significant changes, especially in the financial sector, which has affected the economic context and people's way of life. These changes have been caused by globalization, which has intensified international commercial and financial transactions, mainly in the capital market (Carvalho, 2007).

In addition to the evolution of the financial market, through technological development and the increase in financial products and services, other changes are occurring, such as the reduction of public and private support systems (retirement, health and education), changes in the demographic profile (increase longevity and reduction in birth rates), changes in the labor market (increased participation of women and varied trajectories in professional life) (OECD, 2019) and the preference for immediate consumption to the detriment of saving for the future (Stiglitz, 1997).

The increase in consumption is accompanied by an increase debt and default (Mendes-da-Silva et al., 2012). Balestra and Tonkin (2018) report that more than half of families in 28 OECD countries have some form of debt (mortgages, credit card debt, car loans, education loans, among others).

Student loan payment problems are common in the US. Workers with student debt are less likely to have savings and investments (Cunha, 2022). In Brazil, the situation is different, as the higher education system is made up of public federal and state universities, which are free, in addition to private universities (Mendes-da-Silva et al., 2012). Private student credit in Brazil is linked to a few initiatives, such as Santander and Itaú, and some fintechs that partner with schools (Cunha, 2022). However, not all students get a place at a public university and, even if they do, they still have to pay for materials used in university courses and housing, among others (Mendes-da-Silva et al., 2012). To deal with these problems, several countries are developing public policies and national strategies to financially empower certain segments of the population (Kempson, 2009).

In this scenario, the study has three main objectives. The first objective is to verify whether two dimensions of financial literacy, namely, financial knowledge and financial behavior, in addition to socioeconomic and demographic variables influence the level of personal debt of students studying applied Social Sciences courses at a private university. These students receive formal financial education and are subject to paying university tuition fees, in addition to other professional development expenses, requiring them to make financial choices.

The second objective is to verify whether socioeconomic and demographic variables influence the two dimensions of financial literacy (knowledge and behavior).

The third objective is to verify whether financial knowledge influences financial behavior.

To meet these objectives, the following specific objectives are established: a) Verify the impact of financial knowledge on categories of financial behavior; b) Verify the impact of financial management on other categories of financial behavior; c) Verify the impact of categories of financial behavior on the level of debt; d) Verify the impact of financial knowledge on the level of debt; e) Verify the impact of socioeconomic and demographic variables on financial knowledge, categories of financial behavior and level of debt.

This article is organized into five sections, the first being this introduction. The second section presents the theoretical and empirical structure that supports the research. In the third section, the methodological procedures are detailed. Next, the sample is characterized and the empirical results are presented, closing with some considerations.

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Theoretical Framework

Debt is a relevant aspect in behavioral finance, being defined as the debt balance of a person or family, resulting from one or more debts (Observatório do Endividamento dos Consumidores, 2002).

The anomaly in human behavior occurs when a person acquires debt without being aware its consequences for the future. Changes in the economic context, consumerist culture, marketing media and the wide variety of financial products that facilitate access to credit contribute to personal debt (Campara et al., 2016). To reduce the occurrence of this anomaly in human behavior, it is necessary to increase the individual's level of financial literacy.

The Organization for Economic Cooperation and Development (OECD) states that financial literacy is an essential life skill, recognized globally. Financial literacy is a set of knowledge, skills and strategies that involve the mobilization of cognitive and practical skills, attitude, motivation and values. It is not just about reproducing accumulated knowledge, but about developing people's ability to deal with the financial demands of day-to-day life and the uncertain future of contemporary society (OECD, 2019).

In general, this definition states that financial literacy goes beyond financial education, linking concepts of financial knowledge with financial behavior.

Financial knowledge is a form of human capital that people acquire throughout their lives, through learning disciplines that influence their ability to effectively manage their income, expenses and savings (Potrich et al., 2015). A lack of financial knowledge can lead to the acquisition of inappropriate financial products (Giné et al., 2017), an increased risk of poor financial management (Lyons, 2004), an increased likelihood of using informal loans (Santos et al., 2018), or even formal loans (Matta, 2007). According to Silva et al. (2017), school generally has a limited role in providing financial knowledge. Lucci et al. (2006) find evidence that knowledge of financial concepts learned at university increases improves the quality of financial decision-making. Norvilitis and Santa Maria (2002) report that the lack of financial knowledge and the belief in future gains are some of the causes of the increase in credit card debt at universities. Minella et al. (2017) understand that financial education can help individuals not to compromise future income with purchases that will take a long time to pay for.

Based on these foundations, some hypotheses were developed: Individuals with a higher level of financial knowledge are more likely to use credit responsibly (H1), to save and invest (H2), to manage their finances (H3), to plan their consumption (H4) and be less likely to get into debt (H5).

Financial behavior is another element of financial literacy, as it is how people respond to a given set of financial conditions. Financial behavior includes actions related to consumption, savings and loans (Grohs-Müller & Greimel-Fuhrmann, 2018; Ramalho & Forte, 2019). People who have control over their financial actions reduce compulsive buying behavior, are less likely to go into debt (Potrich & Vieira, 2018; Achtziger et al., 2015) and have greater financial well-being (Vieira et al., 2016). This is because financial planning guides the use of information and rational decision-making, helping to manage emotions related to money (Grohs-Müller & Greimel-Fuhrmann, 2018). Furthermore, the better a person understands financial products, the more aware they are of financial risks and opportunities, which can help them make more responsible decisions (OECD, 2013).

Based on the idea of financial behavior, some hypotheses are formulated. Individuals with a better level of financial management are more likely to use credit responsibly (H6), save and invest (H7) and plan their consumption (H8). Individuals are less likely to get into debt if they have a better level of financial management (H9), credit behavior (H10), investment and savings (H11) and planned consumption (H12).

The interrelationship between financial knowledge and financial behavior is, therefore, important in financial decision making (Xiao et al., 2011). Individuals with a higher level of financial knowledge have

a greater ability to prepare a personal budget, plan their savings and their future (Matta; 2007; Lusardi & Mitchell, 2011; Gathergood & Disney, 2011; Rooij et al., 2011; Lucci et al., 2011; Lusardi & Tuffano, 2015).

This brief review of the literature suggests that financial knowledge and financial behavior are necessary for responsible financial decision making. Individuals who possess these skills are more likely to manage their resources effectively, achieving their long-term financial goals and promoting a level of debt that is more suited to their resources and life goals.

Several authors also study the influence of socioeconomic and demographic variables on financial literacy and the level of debt. In general, the literature works with gender, age, occupation, education level and income. Below are some studies and their conclusions.

Women, in general, have a lower level of financial literacy (Kadoya & Khan, 2020). However, according to Bannier and Schwarz (2018), the gender gap in financial literacy reduces as the level of education increases, that is, women with a high level of education have a level of financial literacy similar to that of men with the same level of schooling.

Ponchio (2006), Flores and Bidarte (2019), and Oliveira (2020) report that the greater propensity for debt is attributed to women, demonstrating greater risk behavior than that of men.

Regarding age, the literature indicates that the level of financial literacy is higher for middle-aged individuals when compared to younger and older individuals (Table 2). Asmalidar et al. (2019) and Kadoya and Khan (2020) state that the older the age, the better their financial literacy levels become.

In research carried out with university students in the USA, Norvilitis et al. (2006) concludes that as students age, they become increasingly tolerant of credit card debt, in addition to the fact that they have more time to accumulate debt. The authors also conclude that young college students are more willing to take on debt because they feel optimistic about their financial future. Ponchio (2006) also concludes that younger people tend to have higher levels of debt, while older people are less likely to get into debt. Analyzing the effects of financial literacy on the debt of Turkish consumers, Sevim et al. (2012) conclude that consumers aged 18 to 25 exhibit excessive consumption behavior when compared to consumers aged 46 to 55, and the lack of financial education and ease of access to credit are some of the factors that can lead to inappropriate lending decisions.

The literature indicates that individuals with longer years of service are more literate, due to their experience of economic and financial issues. Individuals who work in low-skilled occupations exhibit fewer desirable behaviors (Chen & Volpe, 1998; Lusardi & Mitchell, 2011; Calamato, 2010). Therefore, the professional category influences the individual's level of financial literacy (Teles, 2022).

According to Keese (2012), the unemployed have a high perception of risk, resulting from their uncertainty regarding the future, therefore, they are more cautious when taking on debt. Individuals who have a job are more prone to debt (Oliveira, 2020).

The level of education can also influence an individual's level of financial literacy. According to the literature, individuals with higher levels of education are those with higher levels of financial literacy (Douissa, 2020; Kadoya & Khan, 2020; Teles, 2022). Ponchio (2006) and Gathergood (2011) state that over-debt is more common in families with a lower level of education.

The higher the income level, the higher the level of financial literacy (Monticone, 2010; Bottazzi et al., 2011; Atkinson & Messy, 2012; Scheresberg, 2013; Lusardi & Tuffano, 2015; ANZ, 2015; Teles, 2022).

On the other hand, Flores (2012) and Oliveira (2020) state that individuals with higher income brackets are more likely to get into debt. Flores (2012) adds that individuals who have a regular income tend to

take risks given their perception of a secure financial situation, as income can compensate for their mistakes. However, other authors reach a different conclusion. Zerrenner (2007), when studying individuals with income up to three minimum wages, observes that these individuals have high levels of debt, concluding that there is a negative relationship between income and debt propensity.

Table 1, adapted from Potrich et al. (2015) and Kühl et al. (2016), presents a summary of the aspects in the literature about the relationship between financial literacy and socioeconomic and demographic variables.

Table 1

Relationship between financial literacy and socioeconomic and demographic variables

Variables	Relation with financial literacy	Authors
Gender	Women generally have lower financial literacy levels than men. Women are less likely to answer the questions correctly and more likely to say they do not know the answer. Men's financial literacy is increasingly faster than that of women. Making a comparison between women, those married and having higher incomes show higher financial literacy levels.	Chen and Volpe (1998), Agarwal et al. (2009), Lusardi and Mitchell (2011), Atkinson and Messy (2012), Scheresberg (2013), ANZ (2015).
Educational level	Those with higher educational levels are those with higher financial literacy levels. The number of courses related to the financial field attended at a undergraduate education is related to the financial literacy level. The importance of financial literacy is reinforced when analyzing the adverse effects of a lack of knowledge on financial management. Those with lower education are less likely to answer the questions correctly and more prone to say they do not know the answer.	Chen and Volpe (1998), Lucci et al. (2006), Amadeu (2009), Gathergood and Disney (2011), Lusardi and Mitchel (2011), Atkinson and Messy (2012), Norvilitis et al. (2006), Lyons (2007), Scheresberg (2013), ANZ (2015).
Age	The average age from 30 to 40 years is associated with higher financial literacy levels. Financial literacy is low among young and elderly individuals. Young adults have used loans with high costs.	Chen and Volpe (1998), Agarwal et al. (2009), Lusardi and Mitchell (2011), Atkinson and Messy (2012), Scheresberg (2013), ANZ (2015), Finke et al. (2016).
Income	The low-income individual is associated with a low level of financial education. Financial education and wealth are jointly determined and correlated throughout the life cycle.	Monticone (2010), Bottazzi et al. (2011), Atkinson and Messy (2012), Scheresberg (2013), Lusardi and Tuffano (2015), ANZ (2015).
Occupation	Individuals with longer labor experience have higher financial literacy because greater familiarity with economic and financial subjects, while unskilled or unemployed workers show fewer desirable attitudes and behaviors.	Chen and Volpe (1998), Lusardi and Mitchell (2011), Calamato (2010).

Source: Adapted from Potrich et al. (2015) and Kühl et al. (2016)

Methodology

The population is represented by students regularly enrolled in Social Science courses at a private university located in the city of São Paulo. This center offers courses in Economic Sciences, Accounting Sciences, Business Administration and Foreign Trade. The population is made up of

approximately 4,500 students between 2015 and 2017.

In the sampling process, a confidence level of 95.0% and a sampling error of 3.4% were considered, obtaining a minimum sample of 702 students. The sample data was collected during the period 2015-2017 and the sample is made up of 709 students from morning and evening courses, taking the first to sixth semester.

Data were collected using a structured questionnaire developed for this study. To select the sample, a non-probabilistic technique was used. The questionnaire was distributed in classrooms, according to the availability of teachers and contact with undergraduates who wished to participate in the research. The questionnaire consists of three parts.

The first part of the questionnaire contains questions prepared by the authors to measure the respondent's level of debt. The questions and respective alternatives are available in Table 2.

Table 2

Debt latent variable

Question	Alternatives
Do you use any type of credit?	Yes or no
How many types of credit do you use?	Short-term contracts Long-term contracts
How much of your income do you commit to paying off credit?	Indicate the proportion of your monthly income that is committed to paying the credit you contracted.
What are the reasons that led you to contract a credit operation?	Compulsive buying, poor money management, lack of cash discount, investment in a higher education course, health problems, name loan, lack of planning, easy access to credit, purchasing your own home, unemployment, drop in income, separation/divorce, death of provider, online shopping, accumulation of miles, acquisition of movable assets, others.
Want to pay your debt?	Yes or no

Source: Research data

The latent variable debt (D) uses a 5-point Likert scale, where 1 means no level of debt and 5 means an excessive level of debt. The responses were classified according to Table 3.

Table 3

Criteria for classifying responses about debt

Questions		Classification criteria
Do you use any kind of credit?	Q9.1	1 = Yes 5 = No
How many types of credit do you use?	Q9.2	1 = no credit 2 = one type of credit 3 = two types of credit 4 = three types of credit 5 = four or more types of credit
Deadline for credit types	Q9.3	1 = no credit 3 = short-term contracted credits 4 = long-term contracted credits 5 = short and long-term contracted credits

How much of your income is committed to the payment of credit?	Q10	1 = no credit 2 = up to 25.0% of monthly income 3 = between 25.1% and 50.0% of monthly income 4 = between 50.1% and 75.0% of monthly income 5 = between 75.1% and 100.0% of monthly income
What are the reasons that led you to contract a credit operation?	Q11	1 = no credit 2 = reasons over which the respondent has no control 3 = obtaining goods 4 = convenience 5 = lack of control
Want to pay off your debt?	Q12	1 = no credit 2 = intends to pay the debt 5 = does not intend to pay the debt

Source: Research data

The second part of the questionnaire contains statements that express behavior in financial decision-making. There are four independent latent variables: financial management (FM), credit behavior (CB), planned consumption (PC), investment and savings (IS). The questions were prepared taking into account the Financial Literacy – Attitude, Behavior and Knowledge (FL-ABK) instrument, authored by Shockey (2002) and, later, the questionnaire was adapted and tested in Brazil by Matta (2007). Table 4 presents the latent behavioral variables and respective manifest variables. In the questionnaire, respondents indicated the intensity of agreement with the statement using a five-point Likert scale, where 1 means "completely disagree" and 5 means "completely agree". An ascending behavior scale is established, where 1 means inadequate financial behavior and 5 means adequate financial behavior in each of the four aspects studied.

Table 4

Behavioral latent variables and respective manifest variables

Latent variable	Questions	Manifest variables
Financial management	Q19	I am concerned with managing my money better.
	Q23	I record and control my personal expenses.
	Q27	I set financial goals that influence how I manage my finances.
	Q31	I follow a Weekly or Monthly budget or spending plan.
	Q35	I never go more than a month without taking stock of my expenses.
	Q39	I am satisfied with the system I use for controlling my finances.
	Q41	I pay my bills on time.
Credit behavior	Q20	I know how to identify the costs I will pay When buying a product on credit.
	Q24	I have not used automatic bank credit cards because I have money available.
	Q28	When buying on installments, I compare the credit options that are available.
	Q32	Less than 10.0% of the income I will earn the following month is committed to purchases on credit.
	Q36	I pay my credit card bill(s) in full to avoid financial charge.
	Q40	I check my credit card bill for any errors or undue charges.
Investiment and savings	Q21	I set money aside monthly.
	Q25	I set money aside after finding out what's left of my earns.
	Q29	I plan investments before spending.
	Q33	I set money aside to by a more expensive product.
	Q37	I have a financial reserve that is greater than ore qual to three times my Monthly income.

Planned consumption	Q22	I compare prices When making a purchase.
	Q26	I analyze my finances in depth before making any major purchases.
	Q30	I do not buy on impulse.
	Q34	I prefer to save up money to buy something in cash rather than buying a financed product.
	Q38	I negotiate discounts for cash payments.

Source: Matta (2007)

The third part of the questionnaire contains questions to measure the latent variable financial knowledge (FK). Although measures to assess financial knowledge are not standardized, the most investigated aspects include interest rates, inflation, risk diversification, savings, loans, consumption and expenses (Potrich et al., 2016).

Based on studies on the subject, three sets of questions were drawn up from Abreu (2009). The questions are available in Table 5. Furthermore, Mandell (2008) and McKenzie (2009) suggest that the number of finance subjects taken by university students influences the level of financial education. Therefore, a question was asked regarding the number of financial subjects taken.

Table 5

Questions about financial knowledge

Observed variables		Questions
Interest rate (IR)	IR1	Suppose that you have R$100.00 in your savings account, at interest rate of 10.0% /year. After 5 years, how much money will you have in your account?
	IR2	A product is sold cash by R$900.00, and you have 10% discount, or you can buy it through installment purchasing divided in three payments of R$300.00, and the first part will be paid within 30 days. What will be the monthly interest rate, on average?
	IR3	Suppose that José inherits R$10,000.00 today and Pedro inherits R$10,000.00 within three years. Given the inheritance, and by knowing that José applied his money at 10.0% interest rate, who will be richer?
Financial product (FP)	FP1	What is the institution in charge of issuing the Bank Certificate of Deposit (CDB), which is a numbered title representing the term deposit?
	FP2	An extremely conservative investor decided to apply R$10,000.00 in a fixed income fund, which is presenting excellent results this year. Is this investor aware of this financial product?
	FP3	What can infer on remuneration of a variable income asset?
Risk diversification (RD)	RD1	"Great international investors allocate their resources in different economies. Thus, they protect themselves, somehow, from eventual isolated crisis in the markets they invest in". Which of the financial markets' features does this statement refer to?
	RD2	A company took on a US$1 million loan. In order to get protected from fluctuations in foreign currencies, what would be the best alternative?
Financial disciplines (FD)	FD1	How many financial disciplines did you have to attended to? 0 = no financial discipline 1 = one financial discipline 2 = two financial disciplines 3 = three financial disciplines 4 = four financial disciplines 5 = five or more financial disciplines

Source: Abreu (2009), Mandell (2008) and McKenzie (2009)

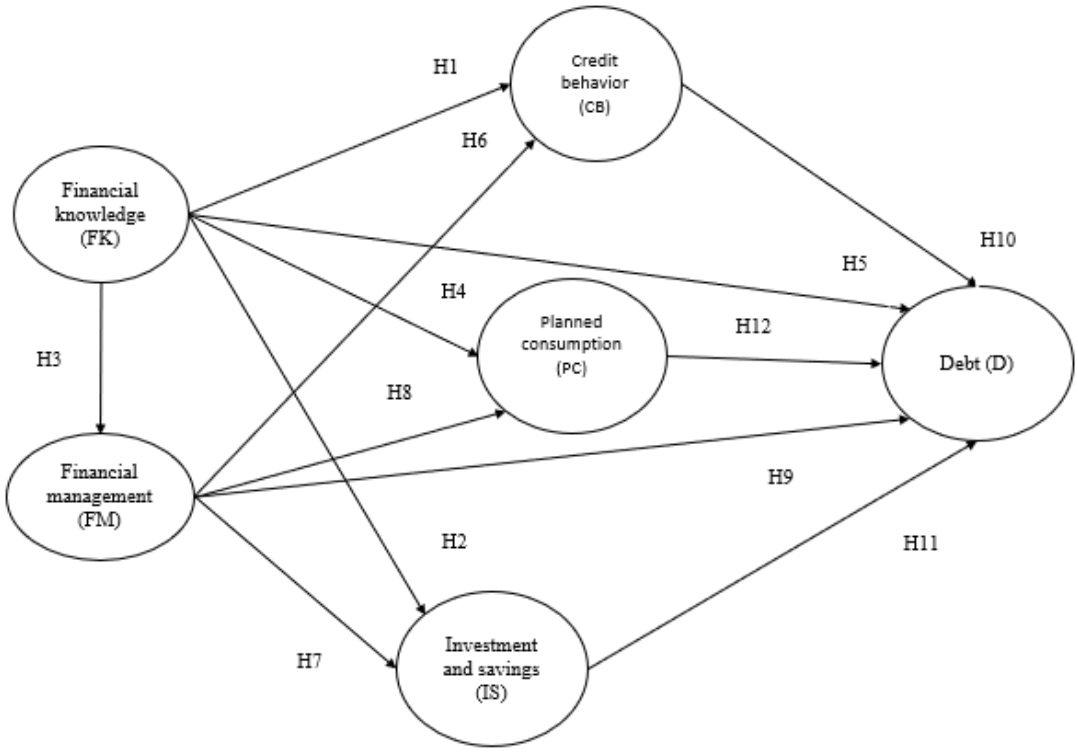
To score the financial knowledge latent variable, the respondent receives 1.67 points for each correct answer on questions about interest rates and financial products, and 2.5 points for each correct answer on risk diversification questions.

The financial knowledge variable uses a scale from 0 to 5, where 0 means that the respondent does not have any financial knowledge and 5 means that the respondent has adequate financial knowledge.

With these variables it is possible to verify whether financial knowledge influences the categories of financial behavior, whether financial management influences the other categories of financial behavior, and whether financial knowledge and the categories of financial behavior influence the individual's level of debt. Figure 1 shoes the initial structural model.

Figure 1

Initial structural model



Source: Research data

A set of manifest variables is associated with each of the latent variables. This set of manifest variables is specified in Tables 3, 4 and 5. A latent variable is a variable that is not directly observable. Therefore, it is described by a block of variables called manifest variables. Each manifest variable is related to its latent variable through a simple regression (Tenenhaus et al., 2005).

Hypotheses were tested using multivariate statistical analysis. SmartPLS software version 4.0 was used. The program uses the partial least squares method (PLS_SEM) and allows you to simultaneously examine multiple dependency and independence relationships between latent variables through observed variables. The objective is to maximize the variance explained in the dependent latent variables and evaluate the quality of the data based on the characteristics of the measurement model. (Nascimento; Macedo, 2016). Table 6 presents a summary of the data analysis techniques used in this

research, their purposes and reference values.

Table 6

Summary of analysis techniques, application purposes and analysis criteria

Indicator	Purpose	Reference values	References
Average Variance Extracted (AVE)	It highlights how the construction explains the variance in its manifest variables and how it can reach maximum value "1".	AVE > 0.5	Henseler et al. (2009)
Factor load	Higher load values.	Factor loads ≥ 0.5	Ringle et al. (2014)
Discriminant validity	The discriminant validity is the square root of AVE. It compares the root square of AVE values to intent variables' correlations.	AVE root square must be higher than its highest correlation to any other construct	Fornell and Larcker (1981)
Composite reliability	It assesses internal reliability consistency. It ranges from 0 to 1.	Composite reliability > 0.7	Hair et al. (2016)
Student's t test	It assesses the significance of correlations and regressions.	p-value = 0.05	Hair et al. (2016)
Standard bootstrap procedure	Estimates of the models.	n = 5000	Cheah et al. (2020)
Pearson's coefficient (R^2)	It assesses the rate of variance in endogenous variables that are explained by the structural model.	Values are classified in small effect (R^2=2.0%), medium effect (R^2=13.0%) and large effect (R^2=26.0%) for the Social Sciences and Behavioral fields	Cohen (2013)
Path coefficient	It assesses the causal relations.	Interpretation of values in light of the theory	Hair et al. (2016)
Variance Inflation Factor (VIF)	It assesses collinearity issues in the structural model	VIF < 3.3	Kock (2015)

Source: Adapted of Ringle et al. (2014) and Kock (2015)

To check whether the proportion of individuals in debt is related to socioeconomic and demographic variables, students are divided into two groups, using the value of the latent variable debt as a basis. Values below the average debt make up the group of least indebted students, and values above the average debt make up the group of most indebted students.

The socioeconomic and demographic variables analyzed are gender, age, occupation, education level and income. As all students in the sample are undergraduates, to measure the level of education, the semester the student is taking is used.

To verify the independence between the level of debt and socioeconomic and demographic variables, the Chi-square test for independence is used. To use the Chi-square test, it is necessary to verify that, at most, 25% of the cells have an expected frequency lower than 5. To analyze the degree of association between the two variables, the Phi (2x2 matrix) or Cramer's V is used (matrices greater than 2x2). According to Dancey and Reidy (2006), the magnitude of the coefficient can be evaluated as follows:

- $\varrho \leq 0.3$ indicates weak correlation
- $0.3 < \varrho \leq 0.7$ indicates moderate correlation
- $\varrho > 0.7$ indicates strong correlation

Hypothesis tests are used to verify whether the latent variables are influenced by socioeconomic and demographic variables. Due to the fact that the samples do not have a normal distribution (Kolmogorov-Smirnov test), the non-parametric Mann-Whitney U (two independent samples) and

Kruskal-Wallis (more than two independent samples) tests are used to compare the medians. All tests are performed using SPSS statistical software version 24, at a confidence level of 95%. To check whether the null hypothesis is rejected, the p-value method is used.

General aspects of the sample

The sample profile presents data on income, occupation, age group, gender, course/semester, future income commitment, types of credit used, credit payment term, and types of short- and long-term credit. The data is available in Table 7.

Table 7

Sample profile

Category		Quantity	%
Income	No monthly income	175	24.7%
	Up to 1500 BRL	196	27.6%
	1501 BRL to 3000 BRL	241	34.0%
	3001 BRL to 4500 BRL	54	7.6%
	4501 BRL to 6000 BRL	21	3.0%
	Above 6000 BRL	22	3.1%
	Total	709	100.0%
Occupation	Does not work	115	16.2%
	Works	594	83.8%
	Total	709	100.0%
Age	17 to 19 years old	209	29.5%
	20 to 22 years old	317	44.7%
	23 to 25 years old	104	14.7%
	Over 25 years old	79	11.1%
	Total	709	100.0%
Gender	Male	434	61.2%
	Female	275	38.8%
	Total	709	100.0%
Course	Economic sciences	144	20.3%
	Accounting sciences	149	21.0%
	Business Administration	277	39.1%
	Foreign trade	139	19.6%
	Total	709	100.0%
Course semester	1st semester	120	16.9%
	2nd semester	142	20.0%
	3rd semester	93	13.1%
	4th semester	93	13.1%
	5th semester	89	12.6%
	6th semester	172	24.3%
	Total	709	100.0%
Types of credit used	None	52	7.3%
	One type	200	28.2%
	Two types	320	45.1%
	Three types	88	12.4%
	Four or more types	49	6.9%
	Total	709	100.0%
Credit payment deadline	No credit contracted	52	7.3%
	Short term	554	78.1%
	Long term	7	1.0%
	Short and long term	96	13.5%
	Total	709	100.0%
Types of short-term credit used	Credit card	535	75.5%
	Loan with family	91	12.8%

	Debit card/overdraft	472	66.6%
	Anticipation of income tax refund	5	0.7%
	Store, supermarket, etc	19	2.7%
	Anticipation of the 13th salary	23	3.2%
Types of long-term credit used	Loan from the company where you work	16	2.3%
	Acquisition of movable assets	42	5.9%
	Payroll loans	18	2.5%
	Acquisition of real estate	17	2.4%
	Bank loan	25	3.5%
	Personal credit	19	2.7%
Future income commitment	0%	52	7.3%
	10%	77	10.9%
	20%	66	9.3%
	30%	119	16.8%
	40%	86	12.1%
	50%	94	13.3%
	60%	58	8.2%
	70%	27	3.8%
	80%	14	2.0%
	90%	7	1.0%
	100%	16	2.3%
	Did not specify	93	13.1%
	Total	709	100.0%

Source: Research data

Most students are male (61.2%) and aged between 17 and 22 (74.2%). Of the total, 83.8% work and 61.6% have a monthly income of up to 3000 BRL.

Regarding the proportion of monthly personal income that is committed to paying the credit that the student has contracted, the majority (70.5%) is between 10.0% and 60.0%. Considering that, if an individual spends more than 30.0% of their monthly income on credit payments, the probability of having difficulties in paying their debts in full increases (Lyons, 2004), the students in this research were not cautious since 42.6% of the sample usually spends more than 30.0% of their personal income on credits taken out.

Around 64.5% of students use more than one type of credit and 78.1% focus on short-term credits, making it difficult to plan their budget. However, it should be noted that, if the individual duly pays his monthly bill, he is not considered in debt, as there is no interest charged on the payment that occurs within the established period. Only the individual who maintains their outstanding balance is considered indebted, which starts to accrue interest after the payment tolerance period. (Kunkel et al., 2015).

The majority use credit cards (75.5%) and debit cards/overdrafts (66.6%). According to Bertaut and Haliassos (2006), access to credit was made easier with the availability of credit cards. The popularization of the credit card is due to its multifunctionality, that is, it constitutes a payment tool and, at the same time, a credit resource. (Kim & Devaley, 2001).

Regarding the types of long-term credit used by students, the percentage is not representative in any of them, remaining in the range of 2.3% and 5.9%. Of the total number of students who participated in the survey, only 1.0% have long-term credit. A possible explanation for this behavior could be the occurrence of present bias. According to Nunes et al. (2019), the present bias is the fact that the individual assigns greater weight to the present moment, causing conflict between the short-term "me" and the long-term "me". Therefore, the low level of commitment of income to long-term credit may indicate that the individual tends to favor more immediate benefits to the detriment of the long term. Rewards cease to be valuable when they are too far apart in time (Ariely, 2008). This behavior can also be explained by the theory of hyperbolic discounting, where rewards decrease quickly for short periods

of postponing consumption while slowly decreasing for long periods of postponing consumption, indicating that the debt process does not have a constant rate throughout of time (Laibson, 1997).

Structural model

The first objective of the work is to validate the latent variables used in the analysis.

The indicator loading on the latent variable is available in Table 8. Adopting the stepwise procedure, out of a total of 33 manifest variables, 20 remained because they had a factor loading equal to or greater than 0.5.

Table 8

Indicator loading on the latent variables

Credit behavior	Initial model	Final model	Debt	Initial model	Final model
Q20	0.728	0.760	Q9.1	0.880	0.868
Q24	0.244		Q9.2	0.794	0.809
Q28	0.584	0.701	Q9.3	0.830	0.845
Q32	-0.040		Q10	0.739	0.740
Q36	0.540		Q11	0.633	0.599
Q40	0.714	0.711	Q12	0.744	0.723
Planned consumption	Initial model	Final model	Investment and savings	Initial model	Final model
Q22	0.675	0.731	Q21	0.783	0.789
Q26	0.747	0.796	Q25	0.528	
Q30	0.536		Q29	0.739	0.791
Q34	0.418		Q33	0.570	
Q38	0.636	0.667	Q37	0.584	0.650
Financial knowledge	Initial model	Final model	Financial management	Initial model	Final model
FD	0.814	1.000	Q19	0.497	
RD	-0.107		Q23	0.714	0.728
FP	0.381		Q27	0.682	0.763
IR	-0.417		Q31	0.613	0.668
			Q35	0.561	
			Q39	0.719	0.748
			Q41	0.520	

Source: Research data

To estimate the model, the standard bootstrapping procedure was used. The use of bootstrapping initially assesses the significance of correlation and regression. Table 9 shows the value of Student's t-test statistics. According to the data, the value of Student's t-test statistics is greater than 1.96, indicating that the correlations between the latent variable and their respective manifest variables are significant at a 95.0% confidence level (Hair et al., 2016). Performing the standard bootstrap procedure, with n equal to 5000 times (Cheah et al., 2020), allows us to consider that in this sample, the analysis is very significant.

Table 9

Values of Student's t-test statistics

Manifest variables and latent variables	Value	Manifest variables and latent variables	Value
Q20 <- CB	23.790	Q11 <- D	8.590

Q28 <- CB	17.867	Q12 <- D	9.565
Q40 <- CB	19.890	Q23 <- FM	32.269
Q22 <- PC	24.624	Q27 <- FM	40.283
Q26 <- PC	35.135	Q31 <- FM	20.638
Q38 <- PC	16.727	Q39 <- FM	32.971
Q9.1 <- D	28.131	Q21 <- IS	39.419
Q9.2 <- D	29.079	Q29 <- IS	40.670
Q9.3 <- D	39.434	Q37 <- IS	17.846
Q10 <- D	24.583		

Source: Research data

To evaluate the measurement model, the average variance extracted, composite reliability, and discriminant validity are analyzed.

The average variance extracted (AVE) indicates the portion of the variable data that is explained by the respective latent variables, that is, how much, on average, the variables positively correlate with the respective latent variables (Henseler et al., 2009). In this case, according to data in Table 10, all latent variables had an AVE greater than 0.5, a value considered adequate.

Table 10

Average variance extracted and composite reliability

Latent variables	Average variance extracted	Composite reliability
Planned consumption	0.538	0.776
Credit behavior	0.525	0.768
Debt	0.592	0.896
Financial management	0.529	0.818
Investment and savings	0.557	0.789

Source: Research data

Composite reliability is used to verify the existence of high levels of internal consistency in latent variables, that is, it evaluates whether the responses together are reliable (Ringle et al., 2014). According to the results in Table 10, the values are between 0.768 and 0.896, indicating adequate levels of reliability.

Discriminant validity is an indicator that assesses whether latent variables are independent of each other (Ringle et al., 2014). For this, the Fornell and Larcker (1981) criterion is used, where the square roots of the AVEs (the values are in bold on the diagonal of Table 11) must be greater than the correlations. According to the data in Table 11, in all latent variables, the square root of the AVE is greater than the correlations of the latent variables. Therefore, the latent variables are independent of each other.

Table 11

Square root of AVE's (the values are in bold on the diagonal) and correlations

Latent variables	FK	PC	CB	D	FM	IS
Financial knowledge	**1.000**					
Planned consumption	0.048	**0.733**				
Credit behavior	0.149	0.521	**0.725**			
Debt	0.140	-0.130	0.030	**0.769**		
Financial management	0.003	0.550	0.471	-0.098	**0.727**	

Investments and savings	0.031	0.543	0.450	-0.139	0.659	**0.746**

Source: Research data

As the estimation of coefficients in structural models is based on ordinary least squares (OLS) regressions, as well as regular multiple regression, the coefficients may be biased. (Nascimento & Macedo, 2016). Therefore, it is necessary to examine the existence of multicollinearity problems in the structural model. Analyzing the data in Table 12, there is no multicollinearity problem, as the variance inflation factors (VIF) values are lower than 3.3, according to Kock (2015).

Table 12

Variance Inflation Factors

Manifest variables	VIF	Manifest variables	VIF	Manifest variables	VIF	Manifest variables	VIF
Q20	1.142	Q26	1.179	Q10	1.592	Q31	1.309
Q28	1.151	Q38	1.145	Q11	2.191	Q39	1.341
Q40	1.156	Q9.1	2.569	Q12	2.330	Q21	1.286
FD	1.000	Q9.2	2.218	Q23	1.303	Q29	1.187
Q22	1.201	Q9.3	2.752	Q27	1.331	Q37	1.198

Source: Research data

The next step is to analyze the significance of the latent variables (Table 13). According to Hair et al. (2016), value of Student's t-test statistics greater than 1.96 indicates coefficient significance at a 95.0% confidence level.

FK improves CB, confirming H1, but FK does not influence IS, FM and PC, not confirming H2, H3 and H4 (Table 13). FK increase D, not confirming H5. Furthermore, CB increase D, not confirming H10 (Table 13).

The positive relationship indicates that the more confident the student is in their financial knowledge and in control of their credit situation, the more comfortable they feel about getting into debt. This behavior can be explained by the conclusions of Block-Lieb and Janger (2006) and Norvilitis and Santa Maria (2002), where the authors understand that the decision maker underestimates the risks associated with uncertainty. Students can feel secure that they will remain employed or know that they have the support of their parents or guardians if something unexpected happens.

Avdzejus et al. (2012) state that the reasons that lead to debt are the lack of planning and rampant consumerism, where young people take up credit observing only the advantages (accumulation of points and benefits, financial flexibility, online payments, for example), failing to assess that poor use of credit can lead them into unnecessary debt.

According to Minella et al. (2017), young people do not identify their level of debt as a problem, since they will have future income to pay short-term debt, which leads them to take on short-term debt if the credit supply allows it.

Table 13

Hypotheses, path coefficient and value of Student's t-test statistics

Latent variables	Hypothese	Path coefficient	Statistics	Significant?	Confirms hypotheses?
FK -> CB	H1	0.147	4.513	Yes	Yes
FK -> IS	H2	0.029	1.012	No	No

FK -> FM	H3	0.003	0.088	No	No
FK -> PC	H4	0.046	1.412	No	No
FK -> D	H5	0.130	3.956	Yes	No
FM -> CB	H6	0.471	16.066	Yes	Yes
FM -> IS	H7	0.659	31.192	Yes	Yes
FM -> PC	H8	0.550	20.430	Yes	Yes
FM -> D	H9	-0.006	0.105	No	No
CB -> D	H10	0.144	3.024	Yes	No
IS -> D	H11	-0.129	2.275	Yes	Yes
PC -> D	H12	-0.138	3.249	Yes	Yes

Source: Research data

According to the results in Table 13, FM improves CB, IS and PC, confirming H6, H7 and H8. FM has no influence on D, not confirming H9. PC and IS reduce D, confirming H11 and H12. This conclusion corroborates the findings of French and Mckillp (2016), where the authors state that the ability to manage finances is an explanatory factor in consumer debt. This conclusion is also in line with the conclusions of Grohs-Müller and Greimel-Guhrmann (2018), who understand that financial planning is oriented towards the use of information and the capture of rational decisions, helping to manage emotions related to money. They also confirm the argument made by Achtziger et al. (2015), where the consequence of compulsive buying behavior is an increased propensity for debt.

The next step is to analyze the model's degree of explanation (R square). Analyzing the results in Table 14, the set of latent variables can explain 5.9% of the variations of D, considered an effect between small and medium according to Cohen (2013). FM can explain 30.4% of the variations in PC and 43.6% of the variations in IS. FK and FM can explain 24.4% of variations in CB. According to Cohen (2013), portions greater than 26.0% of the variance of endogenous variables that are explained by the structural model are considered to have a large effect in the area of Social and Behavioral Sciences.

Table 14

R square

Latent Variable	R square
Planned consumption	0.304
Credit behavior	0.244
Debt	0.059
Financial management	0.000
Investment and savings	0.436

Source: Research data

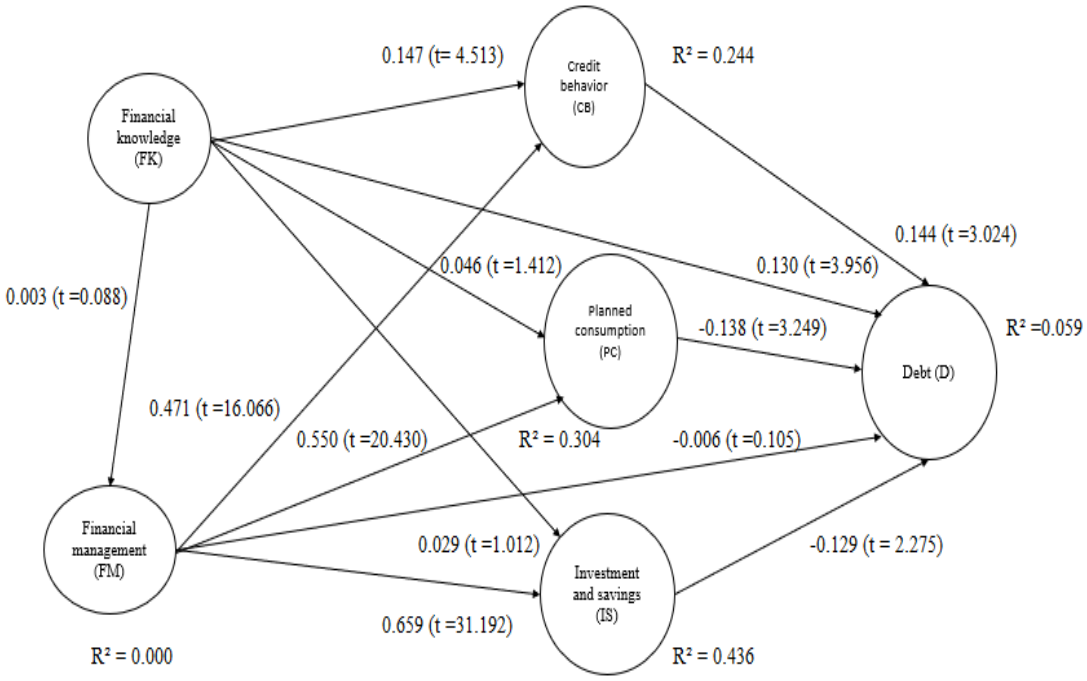
The results corroborate the findings of the OECD (2015) which states that financial behavior is the key element, as behavior leads the individual to financial balance or imbalance. Furthermore, the results also confirm the observations made by Pietras (2014), where financial knowledge is not enough for the individual to achieve financial stability, since putting learning into practice and being ready to act do not

necessarily lead to financial balance.

Figure 2 shows the final structural model. The values shown in Figure 2 are also available in Tables 13 and 14. They correspond to the values of the regression coefficients, the Student's t-test statistics in parentheses, and the R square.

Figure 2

Final structural model



Source: Research data

As seen in the analysis of the results, this decomposition allows us to understand the contribution of each latent variable to the prediction of D.

Figure 2 shows that CB (coefficient = 0.144) is the most important variable in predicting D, followed by PC (coefficient = – 0.138), FK (coefficient = 0.130) and IS (coefficient = –0.129). CB and FK increase D while PC and IS decrease D. Figure 2 also shows that FM is the variable that most influences financial behavior categories, more than FK, being a variable to be worked on in conjunction with FK.

With model validation, the latent variables obtained in the simulations are used for analysis in the following sections. In the next section, tests are carried out to verify the influence of socioeconomic and demographic variables on the level of student debt.

The influence of socioeconomic and demographic variables on students' debt level

In this section, Chi-square tests are performed to verify whether there is independence between the level of student debt and socioeconomic and demographic variables. The variables analyzed are gender, age, occupation, education level and income. Table 15 shows the test results. The prerequisite for using the Chi-square test is met, given that no expected cell presents a count lower than 5. Next, the test results are analyzed.

Table 15

Chi-square test relating debt level to socioeconomic and demographic variables

Socioeconomic and demographic variables		Debt level		Total	Chi-square test			
		Below average	Above average		p-value	Conclusion	Phi	Cramer's V
Gender	Male	194 27%	240 34%	434 61%	0,028	Influence	0,082	
	Female	100 14%	175 25%	275 39%				
Age	17 to 19 years old	109 15%	100 14%	209 29%	0,000	Influence		0,177
	20 to 22 years old	129 18%	188 27%	317 45%				
	23 to 25 years old	38 5%	66 9%	104 15%				
	Over 25 years old	18 3%	61 9%	79 11%				
Occupation	Do not work	63 9%	52 7%	115 16%	0,002	Influence	0,119	
	Work	231 33%	363 51%	594 84%				
Education level	1st semestre	56 8%	64 9%	120 17%	0,304	Does not influence		0,092
	2nd semester	63 9%	79 11%	142 20%				
	3rd semester	37 5%	56 8%	93 13%				
	4th semester	39 6%	54 8%	93 13%				
	5th semester	40 6%	49 7%	89 13%				
	6th semester	59 8%	113 16%	172 24%				
Income	No monthly income	114 16%	61 9%	175 25%	0,000	Influence		0,313
	Up to R$1500	87 12%	109 15%	196 28%				
	R$1501 to R$3000	67 9%	174 25%	241 34%				
	R$3001 to R$4500	17 2%	37 5%	54 8%				
	R$4501 to R$6000	4 1%	17 2%	21 3%				
	Above R$6000	5 1%	17 2%	22 3%				
Total		294 41%	415 59%	709 100%				

Source: Research data

The Chi-square test indicates an association between the level of debt and gender (p-value = 0.028), with the magnitude of the relationship considered weak (ϱ = 0.082) according to the criteria of Dancey and Reidy (2006). Women are more likely to be in debt, as 64% have above-average debt. This result is in line with the results obtained by Ponchio (2006), Flores and Bidarte (2019) and Oliveira (2020).

The Chi-square test indicates an association between the level of debt and age (p-value < 0.0001), with the magnitude of the relationship considered weak (ϱ = 0.177). The older the age group, the higher the

percentage of students with higher-than-average debt. This result is in line with what was expected in the literature. According to Sevim et al. (2012), consumers aged 18 to 25 exhibit consumerist behavior. Similar conclusions were also obtained by Ponchio (2006) and Norvilitis et al. (2006). It is worth mentioning that the oldest students in the sample are aged between 40 and 48, and there are only six students.

The Chi-square test indicates an association between the level of debt and occupation (p-value = 0.002), with the magnitude considered weak (ϱ = 0.119). Of the students who work, 61% have an above-average level of debt. This result confirms the conclusion obtained by Oliveira (2020), which states that individuals who have a job are more likely to get into debt.

The Chi-square test indicates an association between the level of debt and income (p-value < 0.0001), with the magnitude of the relationship considered moderate (ϱ = 0.313), according to Dancey and Reidy (2006). As income increases, the proportion of students with above-average levels of debt increases, confirming the conclusions obtained by Flores (2012) and Oliveira (2020).

Of the five socioeconomic and demographic variables analyzed, only education level does not present statistical significance (p-value = 0.304) at a 95% confidence level. This mean that the acquisition of knowledge throughout the course does not promote significant changes in the level of debt.

In the following section, the influence of socioeconomic and demographic variables on the latent variables is evaluated.

The influence of socioeconomic and demographic variables on latent variables

In this section, hypothesis tests are carried out to verify whether socioeconomic and demographic variables influence the latent variables of the model.

According to the Kolmogorov-Smirnov test (Table 17), the latent variable samples do not have a normal distribution, as the p-value is lower than the significance level of 0.05, rejecting the null hypothesis.

Normality tests are also carried out separating the samples by category (the categories are specified in Table 8), obtaining the same result, that is, they do not have a normal distribution (p-value < 0.05). Therefore, the non-parametric Mann-Whitney U and Kruskal-Wallis tests are used to compare medians.

Table 16

Kolmogorov-Smirnov test

Latent variables	Statistics	Degrees of freedom	p-value	Does it have normal distribution?
Debt	0.264	709	0.000	No
Financial knowledge	0.204	709	0.000	No
Financial management	0.045	709	0.002	No
Planned consumption	0.126	709	0.000	No
Credit behavior	0.092	709	0.000	No
Investment and savings	0.069	709	0.000	No

Source: Research data

According to the results of the Mann-Whitney U test (Table 18), we can conclude that gender influences D (p-value = 0.004), FM (p-value < 0.0001), PC (p-value = 0.004) and IS (p-value = 0.000).

Women have a higher level of debt and have worse financial behavior than men, according to the average rank. These results are in line with the statement made by several authors (Table 2), women in general have a lower level of financial literacy. They also confirm the statements made by Ponchio (2006), Flores and Bidarte (2019) and Oliveira (2020) that women are more prone to debt.

Table 17

Mann-Whitney U test to compare medians by gender

Latent variables	p-value	Are the medians different?	Average rank	
			Male	Female
Indebtedness	0.004	Yes	337.45	382.69
Financial knowledge	0.324	No	349.07	364.35
Financial management	0.000	Yes	378.83	317.39
Planned consumption	0.004	Yes	372.37	327.58
Credit behavior	0.060	No	366.49	336.86
Investments and savings	0.000	Yes	380.99	313.98

Source: Research data

According to the results of the Kruskal-Wallis test (Table 19), it can be concluded that age influences D (p-value < 0.0001), FK (p-value < 0.0001) and CB (p-value < 0.0001). As age increases, the level of debt increases, financial knowledge increases and credit behavior improves. These findings confirm the statement made by Norvilitis et al. (2006), Ponchio (2006) and Sevim at al. (2012) that younger people are more willing to take on debt. It also confirms the statement made by Asmalidar et al. (2019) e Kadoya and Khan (2020), who state that the older the age, the better the levels of financial literacy become.

Table 18

Kruskal-Wallis test to compare medians by age

Latent variables	p-value	Are the medians different?	Average rank			
			17 to 19 years old	20 to 22 years old	23 to 25 years old	Over 25 years old
Indebtedness	0.000	Yes	313.95	351.14	375.25	452.41
Financial knowledge	0.000	Yes	228.14	401.15	446.17	385.43
Financial management	0.984	No	359.22	354.46	351.09	351.15
Planned consumption	0.065	No	336.66	347.69	383.39	395.47
Credit behavior	0.000	Yes	307.93	358.35	377.98	435.86
Investments and savings	0.514	No	346.73	362.58	367.25	330.35

Source: Research data

According to the results of the Mann-Whitney U test (Table 20), it can be concluded that occupation influences D (p-value < 0.0001), FK (p-value < 0.0001) and CB (p-value < 0.0001). Students who work have a higher level of debt, have greater financial knowledge and have better credit behavior. These results confirm the statement made by Oliveira (2020) that individuals who have a job are more prone to debt. They also confirm the statement made by Chen and Volpe (1998), Lusardi and Mitchell (2011) and Calamato (2010) that the individual who has an occupation has a higher level of financial literacy due to coexistence with economic and financial issues.

Table 19

Mann-Whitney U test to compare medians by occupation

Latent variables	p-value	Are the medians different?	Average rank	
			Does not work	Work
Indebtedness	0.000	Yes	279.17	369.68
Financial knowledge	0.000	Yes	231.07	378.99
Financial management	0.919	No	353.22	355.35
Planned consumption	0.502	No	366.68	352.74
Credit behavior	0.001	Yes	295.79	366.46
Investments and savings	0.945	No	356.21	354.77

Source: Research data

According to the results of the Kruskal-Wallis test (Table 21), it can be concluded that the semester of the course influences FK (p-value < 0.0001) and CB (p-value = 0.002). As students advance through the course semesters, they increase their financial knowledge and improve their credit behavior. These results confirm the statement made by Douissa (2020), Kadoya and Khan (2020) and Teles (2022) that the higher the level of education, the higher the level of financial literacy.

Table 20

Kruskal-Wallis test to compare medians by course semester

Latent variables	p-value	Are the medians different?	Average rank					
			1st semester	2nd semester	3rd semester	4th semester	5th semester	6th semester
Indebtedness	0.826	No	335.83	349.96	369.23	355.75	351.17	366.41
Financial knowledge	0.000	Yes	153.03	225.19	323.24	414.28	462.92	532.35
Financial management	0.571	No	366.36	349.78	339.33	345.63	334.31	375.63
Planned consumption	0.753	No	342.02	348.56	351.53	347.00	353.84	376.18
Credit behavior	0.002	Yes	317.29	326.01	359.82	333.64	372.38	405.19
Investments and savings	0.453	No	338.43	344.06	358.49	336.52	361.47	380.35

Source: Research data

According to the results of the Kruskal-Wallis test (Table 22), it can be concluded that income influences D (p-value < 0.0001), FK (p-value < 0.0001) and CB (p-value = 0.010). As income increases, debt levels increase, financial knowledge increases and credit behavior improves. These results confirm the statements made by Teles (2022) that the higher the income, the higher the level of financial literacy. It also confirms the statements made by Flores (2012) and Oliveira (2020) that the higher the income, the greater the propensity for debt.

Table 21

Kruskal-Wallis test to compare medians by income

Latent variables	p-value	Are the medians different?	Average rank					
			No monthly income	Up to R$1500	R$1501 to R$3000	R$3001 to R$4500	R$4501 to R$6000	Above R$6000
Indebtedness	0.000	Yes	248.62	339.76	420.84	396.93	480.88	502.34
Financial knowledge	0.000	Yes	276.13	316.73	402.43	473.01	451.50	422.02
Financial management	0.208	No	347.27	348.22	359.12	368.53	299.88	451.16
Planned consumption	0.839	No	370.54	342.85	354.97	341.25	368.74	360.61

Credit behavior	0.010	Yes	318.11	343.14	381.83	376.79	323.50	436.84
Investments and savings	0.387	No	357.34	331.98	371.46	336.84	388.90	373.45

Source: Research data

Table 22 summarizes the results of the Mann-Whitney and Kruskal-Wallis U tests. It is observed that D, FK and CB are influenced by most socioeconomic and demographic variables. However, there is no difference in terms of FM, PC and IS among the students in the sample.

Table 22

Summary of Mann-Whitney and Kruskal-Wallis U tests

Latent variables	Are the medians different?				
	Gender	Age	Occupation	Education level	Income
Indebtedness	Yes	Yes	Yes	No	Yes
Financial knowledge	No	Yes	Yes	Yes	Yes
Financial management	Yes	No	No	No	No
Planned consumption	Yes	No	No	No	No
Credit behavior	No	Yes	Yes	Yes	Yes
Investments and savings	Yes	No	No	No	No

Source: Research data

Final considerations

The study verified whether financial knowledge and financial behavior influence the level of personal debt of students in applied social sciences courses at a private university based in the city of São Paulo, Brazil.

The analysis of the results indicates that the level of debt is negatively influenced by consumption planning, investments and savings' decisions and these are positively influenced by financial management. However, in this model, financial management is not influenced by financial knowledge. The only behavioral aspect that financial knowledge influences is credit behavior. The higher the level of financial knowledge, the better the student's credit behavior. This shows that financial knowledge is important, but insufficient for responsible financial behavior.

Furthermore, both financial knowledge and credit behavior positively influence student debt. The results show that as students acquire more financial knowledge, their credit behavior improves. As a result, they become more confident in using this knowledge, feeling capable of increasing their commitment to future short-term income. Given that the debt is short-term, even if the employment contract ends, there will be no immediate financial problems, because the level of debt has not exceeded the future income of the following month, and they have not committed to long-term debt.

Therefore, good financial literacy is necessary for students to manage their finances to achieve financial prosperity. Most of the students in the sample already have a job and allocate their resources to their personal needs (housing, health, transportation, course fees, etc.), leisure and entertainment. However, most have an income of up to R$3,000.00, which indicates that the income obtained is not enough to make substantial financial investments. In other hand, students need to start worrying about their future financial investments, developing pension and retirement plans that would help them accumulate wealth in the long term. Financial knowledge can be obtained through various methods; however, experience is a factor that influences real-life financial decisions. If students begin to acquire financial experience, they will have more confidence and knowledge in managing their financial decisions, promoting financial well-being. Therefore, changes in behavior need to be made as early as possible,

that is, appropriate financial behavior needs to be built at this early stage of adult life, despite the low level of resource retention, as these financial habits will continue to be carried and built until the end of the individual's life.

Brazil is a large Country, among the 10th largest economies in the world. São Paulo city, in São Paulo State is by far a major player in Latin America as the locomotive of this power. By studying this sample of students in a large and representative university, even though it was not a random sample but a convenience one, part of this society of this consumption power and study level is well represented. But Brazil has one of the largest Gini's coefficient, an inequality measure of income distribution. Therefore, it is not enough to study the population as a regular Gauss distribution and apply an average policy, as traditional literature would advise.

This is one of the main outcomes of this study. Results show that, to avoid debt, it is necessary educational procedures in society. By focusing on financial behavior and financial knowledge, it is necessary to work with active methodologies and transformative education. The focus is more on the individual's awareness than on providing competence. This aspect is innovative, as it provides a customize approach, in which at first, behavioral factors are analyzed and dealt as a transformative learning, and then, knowledge is provided, accordingly to each different demand, based on his own cycle of life. Perhaps this way of dealing with this need of information/formation is the best one to prevent ethical issues and frauds, the lure of lottery games, and the overspending of those who could have a better wealth in the long term.

Moreover, these findings are essential in the cultural aspect, since it takes in consideration, the regionalization of knowledge in its didactic aspects (how it is transmitted in different layers of society and in different geographies), but also and, mainly, in focusing on preventing unwanted behaviors in each layer of society. In terms of academic contribution, this paper is a small but important brick in terms of considering that cultural aspects are relevant in acquiring financial literature and dealing with better financial behavior, especially with the students, the future of society.

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