Over-Indebtedness Protection and Risk Scale: Construction and Validity Evidence

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ABSTRACT – This study aims to present evidence for the validity of the Over-indebtedness Protection and Risk Scale (OPRIS). The instrument was constructed to assess attitudinal aspects (behavioral, cognitive, and affective) that prevent or encourage over-indebtedness, considered a serious social problem. Four hundred and forty-four adults participated in the online version. Exploratory Factor Analysis revealed the presence of two factors: protection against over-indebtedness (13 items) and risk of over-indebtedness (21 items), with good levels of adjustment. Criterion validity showed that both factors differentiated groups in terms of self-perceived stress, financial concern, presence/absence of debt, and consumption profile. OPRIS is considered to have the potential to help formulate public policies aimed at addressing the phenomenon of over-indebtedness.

KEYWORDS: consumption, over-indebtedness, factor analysis, evidence of validity

Escala de Proteção e Risco de Superendividamento: Construção e Evidências de Validade

RESUMO – O objetivo deste estudo é apresentar as evidências de validade da Escala de Proteção e Risco de Superendividamento (EPRIS). O instrumento foi construído para avaliar aspectos atitudinais (comportamentais, cognitivos e afetivos) que previnem ou estimulam o superendividamento, considerado um grave problema social. Participaram 444 adultos na modalidade *on-line*. A análise Fatorial Exploratória revelou a presença de dois fatores: proteção ao superendividamento (13 itens) e risco de superendividamento (21 itens), com bons níveis de ajuste. A validade de critério mostrou que ambos os fatores diferenciaram grupos quanto ao estresse autopercebido, preocupação financeira, presença/ausência de dívidas e perfil de consumo. Considera-se que a EPRIS tem o potencial de contribuir na formulação de políticas públicas voltadas à abordagem do fenômeno do superendividamento.

PALAVRAS-CHAVE: consumo, superendividamento, análise fatorial, evidências de validade

Studies indicate that Brazil has large numbers of indebted people (Borges, 2018; Hennigen, 2019; Leandro & Botelho, 2022). In November 2022, three of every four Brazilian families (75.6%) had debts stemming from post-dated checks, credit cards, overdrafts, store cards, personal loans, and/or auto and home loans. One in four (26.1%) had overdue debts, and 10.1% stated they had no way to pay them off soon. In that month, the number of poor families with past-due debts reached a historic high (*Confederação Nacional do Comércio de Bens, Serviços e Turismo* [CNC; National Confederation of Trade in Goods, Services and Tourism], 2022).

The current persistent and widespread high inflation has eaten away at domestic budgets and reduced families' buying power, particularly that of low-income ones. As not even repeated hikes of the basic interest rate have proved able to rein in inflation, to say nothing of derail the dynamics of indebtedness, the recourse for the Brazilian to make up for income eroded by monetary devaluation has been credit (CNC, 2021). Prospects for improving the situation are far from promising. Brazil is during a grave economic crisis, marked by high rates of unemployment as well as growing work precarity and informalization.

The current lack of consensus on the definition of over-indebtedness (Leandro & Botelho, 2022) notwithstanding, the term refers to the inability of the consumer to make payments on previously assumed financial obligations (Bodea & Deceanu, 2022). The consequences of over-indebtedness for consumers can be disconcerting, destabilizing, and disruptive (Leandro & Botelho, 2022), and the moralizing dimension of the problem is a source of psychic suffering for these individuals (Hennigen & Borges, 2014).

The effects of over-indebtedness on health include sleep loss (Warth et al., 2019), hopelessness (Hudges, 2021), depression, distress, suicide, and anxiety (Turunen & Hiilamo, 2014). On top of these consequences for individual well-being, over-indebtedness affects the sphere of public health (Gaglietti & Dorst, 2016) and has impacts on the social and family domains (Almeida & Andrade, 2022). Furthermore, financial stress precipitates low organizational commitment and deleterious effects on the work environment, with elevated absenteeism (Kim et al., 2003) causing instances of unexcused absences (Souza et al., 2017). Despite the serious consequences of over-indebtedness, it must be stressed that there is an invisibility cloaking over-indebted consumers evidenced by the absence of public policies addressing the problem in Brazil (Pérez-Nebra et al., 2020).

Access to credit in Brazil ballooned between 2001 and 2006 due to the entry of 50 million new bank account holders little accustomed to the financial system's market rules stemming from the bankification of income transfer policies to the population. According to Souza (2013), these consumers are ill-prepared to contract credit operations to acquire goods and services for the first time. Coupled with this, came aggressive advertising and abuse of the practice of easily liberating credit by banks (Marques & Cavallazzi, 2006). To take advantage of the expansion of consumption by low-income families occurring in the second half of 2004 (in the first term of the Lula government), financial conglomerates and retail chains joined forces to generate significant growth in the number of credit operations in the country. This enabled the acquisition of goods and services by paying for retail purchases in installments and the augmenting of credit availability by financial institutions due to a drop in the basic interest rate (Banco Central do Brasil [Central Bank of Brazil], 2005).

The lack of financial education programs associated with the stimulation of consumption and the excess of credit had negative consequences a decade after this period of massive credit and consumption expansion when the country felt the effects of a worldwide financial crisis that brought delinquency to many Brazilians. While incurring debt is common in capitalist societies, when it affects the less favored social classes, families cease being able to meet their basic needs, which aggravates their socially excluded situation (Pereira & Almeida, 2020).

There are two types of measures to help consumers regarding over-indebtedness. The first includes ways of preventing the phenomenon, such as financial education, debt counseling, and clarifying the consequences of using credit. The second deals with the problem propositionally and includes measures concerning its regulation and treatment (Sampaio, 2018). Formulating public policies around the issue should both incentivize consumers to reduce their indebtedness and address subjective aspects of the act of consumption, such as the belief that possessions bring happiness (Nepomuceno & Laroche, 2015).

The timeliness of the topic of over-indebtedness notwithstanding, a literature review in national and international databases searching for measures of over-indebtedness uncovered no instruments regarding the subject (Machado, 2021), which signaled the importance of elaborating a scale to investigate the phenomenon. Scales that measure other aspects of the use of money were found, such as the Brazil-wide study by Moreira and Tamayo (1999), but none directly addressed over-indebtedness. The relevance of this instrument is justified as much by the serious individual and social consequences occasioned by excess debt as by its potential to quantify aspects of a social problem affecting more and more of the Brazilian population. It is believed that the instrument has the potential to contribute to the planning of preventative and postventative measures to mitigate excess debt that hangs over millions of Brazilian citizens.

THEORETICAL DIMENSIONS

Through various procedures for identifying and analyzing information of a theoretical nature, with literature reviews in different knowledge areas, and of a practical nature (interviews with specialists, in addition to professional experience from serving the indebted public), the theoretical dimensions of debt were defined. Seven dimensions were suggested: impulsive buying, compulsive buying, materialism, financial well-being, social influences on consumption, beliefs about money, and financial behavior.

Impulsive Buying

This occurs when a consumer has a sudden, intense, and persistent desire to acquire something immediately, in a complex way, which can precipitate an emotional conflict (Rook, 1987). Internal and external factors influence this type of purchase. Among the external ones are sales, ease of payment, and the possibility of testing or tasting the product at the point of sale. Internal factors relate to demographic

characteristics and the consumer's state of mind at the time of purchase, when positive feelings such as euphoria, calm, happiness, joy, and willingness prevail to the detriment of negative ones, for instance, depression, anxiety, sadness, irritation, and tiredness (*Serviço de Proteção ao Crédito* [Credit Protection Service], 2015). Impulsive buying is a risk factor for financial health. In the present study, impulsive buying was defined as the act of buying on the spur of the moment, without prior consideration of actual necessity.

Compulsive Buying

For shopping to be compulsive, the shopping behavior must possess two characteristics: be repetitive and cause problems for the individual. In its initial stage, compulsive buying generates a feeling of relief, which is then replaced by guilt for having shopped. In a more advanced stage, the person sees that the situation is out of control, which may provoke anxiety and frustration. Items acquired through compulsive buying are typically hidden from others for fear of criticism and what was acquired is less important than the act of buying itself. The damaging consequences of compulsive buying can take on legal and financial contours, in addition to adverse feelings, such as distress, depression, guilt, and relevant interpersonal and marital conflicts (Lejoyeux & Weinstein, 2010). Compulsive buying is a risk factor for financial health. In this study, compulsive buying refers to shopping behavior that seeks to satisfy an uncontrollable need and to alleviate uncomfortable psychological symptoms, provoking guilt and regret.

Materialism

Materialism refers to the value conferred on the acquisition of material goods (Borroughs & Rindfleisch, 2002). To an extreme degree, possessions play a central role in a person's life and provide the greatest sources of personal satisfaction or dissatisfaction (Belk, 1985). Materialist people have more financial worries, worse money-management skills, and a greater tendency to spend unnecessarily compared to non-materialist individuals (Garðarsdóttir & Dittmar, 2012). The primary objective of materialistic people is to accumulate as much as possible for themselves (Kasser, 2002). Materialism is a risk factor for financial health. In the present study, materialism was defined as valuing material goods and possessions to an excessive degree.

Financial Well-Being

Financial well-being defines a state present in people who master the following competencies in their financial lives:

the capacity to honor their financial obligations; security regarding their financial future; the capability to deal with unforeseen financial costs; and the ability to make choices that allow them to enjoy life (Consumer Financial Protection Bureau, 2015). Financial well-being is associated with mental and physical health and is considered an important determinant of health complications (Clayton et al., 2016). People with a high level of financial well-being and who experience less stress connected to their finances are less often ill than others (Kim et al., 2003), while indebted people are more prone to stress and other consequences stemming from it, as it impairs the realization of behaviors protective of health (Jacoby, 2002). Financial well-being is a protection factor for financial health. In this study, financial well-being was defined as the capacity to honor financial obligations without difficulty as well as security and peace of mind about one's financial future.

Social Influences on Consumption

There are various sources of social influence on consumption, the familial being one of them (Rindfleisch et al.,1997). Financial institutions, due to competitive pressures, also influence consumption by encouraging indebtedness and lending irresponsibly, leading to over-indebtedness (Garðarsdóttir & Dittmar, 2012). Economic, educational, and psychological variables have also been associated with mismanaging money, as have the tendencies to imitate others and to seek a high material standard of living (Kahneman & Tversky, 1979). Social influences on consumption can be a protective or risk factor for financial health. In the present study, social influences on consumption are defined as external aspects of a social nature that positively or negatively influence financial behavior.

Beliefs About Money

This dimension grew out of the analysis of specialist interviews and the first author's professional experience. The lack of mention of this dimension in the literature notwithstanding, it was included as one of this study's dimensions given two of its attributes. The first is that the literature points to there being a correlation between what one thinks and what one does in terms of preventing harm to one's health, suggesting a relationship between cognitive and behavioral characteristics in the development of illness. Although functional (desirable) beliefs do not by themselves guarantee adaptive behavior, a change in cognitive processes can lead to modified behavior (Dobson & Dozois, 2006). The other attribute taken into consideration was that the development of programs to serve the over-indebted public

requires prior knowledge of their dysfunctional beliefs, which may be shared by a group. This would permit the intervention's planners to more accurately direct training to address this population's informational gaps, thereby resulting in more effective responses to the intervention. Beliefs about money can be both a protection and risk factor for financial health. For this study, beliefs about money have to do with the beliefs a person has about money that influence their financial behavior.

Financial Behavior

The beliefs about the money dimension are related to financial behavior, a constitutive dimension in this study. The Health Beliefs Model proposed by Rosenstock (1990) is especially used in studies of chronic illnesses (HIV/AIDS, cardiovascular disease, etc.). By attempting to transpose it to address financial health, relevant contributions to the area may be seen. These could add to the knowledge of the subject under study, bearing in mind that the consequences of over-indebtedness on health are also serious and deserve to be addressed both in terms of prevention and treatment. In addition to beliefs about money, this study also investigated items related to how people behave regarding its use. Financial behavior can be seen as both a protective and risk factor for financial health. To define the theoretical construct, financial behavior concerns people's conduct regarding money.

Despite the topic's relevance and its impact on mental health, over-indebtedness still possesses a certain invisibility in the field of psychological science. To prevent the advance of the problem in the population, a list of public policies to help the over-indebted needs to be established, preferably with the participation of psychological professionals, given the mental health impacts over-indebtedness produces (Gathergood, 2012). Hence, the present study has sought to construct and estimate the psychometric properties of a measure of over-indebtedness to evaluate attitudinal aspects (cognitive, affective, and behavioral) that prevent or stimulate this condition.

METHOD

The preliminary version of the instrument consisted of 56 items distributed across seven constitutive dimensions: impulsive buying, compulsive buying, materialism, financial well-being, social influences on consumption, beliefs about money, and, finally, financial behavior, presented in the introduction of the present article.

As noted, these dimensions were defined after the completion of the information collection and analysis procedures, whose development took place in three steps. The first step included procedures of a theoretical nature, such as literature reviews in various areas – psychology, law, and economics – and in legislative proposals dealing with the subject, as well as of a practical nature (specialist interviews, professional experience accumulated through serving the over-indebted). The second stage consisted of two empirical procedures: a semantic analysis by nine volunteers of several sociodemographic characteristics and a judges' analysis done by three university professors with academic and/or professional experience in over-indebtedness. The third step, done when the scale had 45 items, was the exploratory factor analysis (EFA), whose data collection took place in 2021, and was done online given the difficulties stemming from the coronavirus (COVID-19) pandemic.

Participants

A convenience sample of 444 respondents between the ages of 18 and 86 ($M = 46$, $SD = 14.89$) participated. The majority (62.6%, $n = 278$) were women, self-declared as white (62.4%, $n = 277$); had a graduate degree (59.9%, $n = 266$); and resided in Brazil's Federal District (36.5%, $n = 162$), followed by the states of São Paulo (23%, $n = 102$), Goiás (6.8%, $n = 30$), and Rio de Janeiro (5.6%, $n = 25$). Around three-fourths (73.9%, $n = 328$) declared having some sort of remunerative activity. One hundred and five participants (23.6%) stated they had past-due debts, and 280 (63.1%) said they were concerned or extremely concerned about their financial situation.

Instruments

Two instruments were used for this study. The first was a test measurement instrument (later called the Over-indebtedness Protection and Risk Scale – OPRIS), containing 45 items at the time of the semantic analysis, with possible responses on a 5-point Likert scale. The second was a sociodemographic and financial questionnaire composed of 30 keywords created for this study.

Data Collection Procedures

Data collection occurred via the functionalities offered by the Lime Survey e-platform. When accessing the link to the questionnaire, the participants had to electronically sign the Terms of Consent (ToC) before accessing the questionnaire itself. The study received approval via Opinion no. 4.264.782 of the Research Ethics Committee in Human and Social Sciences of the University of Brasilia.

Data Analysis

Exploratory factorial analyses were done using the application FACTOR, version 10.10.02, to evaluate the internal structure of the instrument. Given the lack of multivariate normality of the data, the Robust Diagonally Weighted Least Squares (RDWLS) extraction method was used (Muthén & Kaplan, 1985). Polychoric correlation matrices (Asparouhov & Muthén, 2010) and Robust Promin rotation were also considered. The Statistical Package for Social Sciences (SPSS), version 26.0, was used for the study's descriptive and inferential statistical analyses, as well as to estimate the internal consistency index, Cronbach's alpha. The composite reliability (CR) of the factors and subfactors was also estimated. A significance level of 5% was adopted for the study.

To investigate the validity of evidence based on the relationship with other variables (the relationship with the criterion), non-parametric inferential statistics (Mann-Whitney and Kruskal-Wallis) were employed to compare averages between factors of the measuring instrument under construction with the following variables: (i) presence of overdue debt, (ii) perceived financial stress, (iii) concern over one's current financial situation, and, finally, (iv) one's consumption, debt, and savings profile. Note that these variables describe important aspects of the participants' financial lives.

RESULTS

Exploratory Factor Analysis

Analyses were carried out for seven, four, and three factors, preliminarily, however, the best solution for the instrument was with two factors, according to the EFA results. This attempt fixed two factors considering the recommendation from the parallel analysis (PA). In that analysis, it was decided to pre-exclude four items/variables, because, in the three-factor solution, they presented factorial loads below 0.30, indicating fragility. Thus, 41 items/variables were analyzed. The factorial solution presented adequate adjustment indices: Barlett's Sphericity tests = 4944.8, df = 820, $p < .001$, KMO = .90, RMSEA (95% CI) = .03 (.010, .050), CFI = .98, TLI = .98.

The Goodness of Fit Index (GFI), analyzed with bootstrapping, equaled .97, 95% CI (.97, .98). Mardia's multivariate coefficient was calculated, with values: asymmetry = 395.75, $p > .99$, kurtosis = 2178.23, $p < .001$. This last result indicated that the assumption of multivariate normality of the data was not met.

The two factors explained 32.24% of the variance and its composite fidelity indices were adequate (CF > .70). It was decided, then, to consider only factor loads above .30, seeking a more parsimonious and easy-to-apply instrument, which led to the exclusion of six items. The researchers decided to exclude a seventh item due to its content being difficult to understand.

Thus, the final version of the scale consisted of 34 items and two factors. The seven initially proposed dimensions were grouped into the two factors as follows. Factor 1, named protection from over-indebtedness, aggregated items from the theoretical dimensions of financial well-being (FWB; 4 items), financial behavior (FB; 6 items), and beliefs about money (BM; 3 items), for a total of 13 items. This factor and its items refer to aspects that prevent or prevent the consumer from becoming over-indebted, whose definition remits to the set of consumption behaviors seeking financial security regarding the future, characterized by the habits of saving and reflecting before spending, based on functional beliefs about the use of money.

Factor 2, called risk of over-indebtedness, grouped items from the theoretical dimensions of social influences on consumptions (SI; six items), compulsive buying (CB; eight items), materialism (M; two items), and impulsive buying (IB; five items), totaling 21 items. This factor represents aspects that stimulate or induce the consumer to become over-indebted, defined as the set of consumption behaviors characterized by shopping impulsively, in which the social value of the acquisition overwhelms its actual necessity, based on the belief that possessions and acquisitions influence the value that people have to society, and may be associated with an irresistible urge to buy or shop. Table 1 presents the factorial loads of the items, the percentage of variance explained, Cronbach's alphas, and the composite fidelity (CF) values by factor.

Table 1

Factorial solution with factor loadings, commonalities, percentage of explained variance, and internal consistency indices of the Over-Indebtedness Protection and Risk Scale

Items	Factors		h²
	1	**2**	
CB1. I feel an irresistible urge to shop.		.72	.54
CB2. I feel discomfort that only goes away when I shop.		.69	.48
CB3. I suspect I'm addicted to shopping.		.69	.50
IB1. I buy products without thinking about whether I need them.		.66	.50
CB4. I go out wanting to shop without knowing exactly what for.		.64	.42
IB2. I buy products I don't need simply because they are on sale.		.63	.43
IB3. I often buy products the first time I see them.		.62	.25
SI1. My decision to buy is influenced by advertisements.		.60	.31
IB4. When I see a product that has appeared in the media, I don't resist, and I buy it.		.59	.32
CB5. I often feel guilty after making a purchase.		.56	.35
CB6. I hide my purchases for fear of being criticized.		.56	.34
SI2. My decision to buy is influenced by social networks or other people.		.55	.26
IB5. I'm in the habit of buying similar products (of different colors, for example).		.53	.25
CB7. Friends and/or family members say I have shopping-related problems.		.52	.37
SI3. I like to please people with gifts that cost more than I should spend.		.47	.28
SI4. The way the salesperson assists me influences my decision to buy something unnecessary.		.41	.17
CB8. I often buy non-essential products using my overdraft or some other form of interest-bearing payment.		.40	.39
SI5. I have a hard time turning down financial favors.		.36	.14
SI6. I depend on the opinions of third parties to make financial decisions.		.33	.10
M1. My decision to buy considers the value (social status) that a product has for society.		.33	.10
M2. Possessions are the biggest sources of satisfaction in a person's life.		.33	.10
FB1. I save to deal with unforeseen future events.	.90		.83
FB2. I save to handle financial setbacks caused by unexpected situations.	.81		.67
FB3. I spend less than I make.	.71		.52
FB4. I closely monitor my monthly expenses to avoid surprises at the end of the month.	.66		.46
FWB1. The financial choices I made in the past, allow me to enjoy life today.	.65		.47
FWB2. I have financial goals.	.65		.39
FWB3. I honor my financial obligations.	.58		.31
FWB4. I feel secure about my financial future.	.51		.31
FB5. I often postpone a purchase to get discounts or avoid paying interest.	.43		.19
BM1. It's important to closely track monthly expenses to avoid surprises at the end of the month.	.40		.14
BM2. It's important to save to deal with the unexpected.	.39		.14
FB6. I can't save because I earn so little.	-.35		.16
BM3. It's important to plan before buying, to pay in cash and receive a discount.	.34		.10
Number of items	13	21	
% of variance explained	21.88	10.36	
Cronbach's alpha	.84	.89	
Composite reliability	.85	.89	

Note. Factor 1: Protection from over-indebtedness. Factor 2: Risk of over-indebtedness.

Internal consistency analysis based on Cronbach's alpha and composite fidelity (CF) was calculated for the seven OPRIS subfactors, with four of them having obtained alphas and CFs greater than or equal to .70, namely: compulsive buying (α = .85, CF = .82), financial behavior (α = .82, CF = .83), impulsive buying (α = .75, CF = .77), and financial well-being (α = .70, CF = .69). The other three subfactors — materialism (α = .46, CF = .20), beliefs about money (α = .53, CF = .33), and social influences (α = .51, CF = .56) — had lower values, indicating reduced fidelity. Additionally, upon verifying the Bayesian Information Criterion (BIC) values, the bifactorial model equaled 1,807.15, where the lower the value, the better-adjusted the model is, and this was the lowest value found compared to the earlier factorial analyses (Damásio & Dutra, 2017).

The descriptive analyses of factor 1, protection from over-indebtedness, gave the following values: M = 3.95, SD = .70, Mdn = 4.08, asymmetry = -.65, kurtosis = -.15, maximum = 5.0, minimum = 1.31. As for factor 2, risk of over-indebtedness, the values were: M = 1.87, SD = .60, Mdn = 1.76, asymmetry = 1.17, kurtosis = 1.56, maximum = 4.05, minimum = 1.0.

Investigating Validity Evidence: Relationship of OPRIS to Other Financial Variables

The normality assumption was violated by the risk of (K-S = .01, $p \leq$ .001, S-W = .92, $p \leq$ .001) and protection from (K-S = .11, $p \leq$ .001, S-W = .95, $p \leq$ .001) over-indebtedness variables, and non-parametric tests were applied in the subsequent analyses. To investigate the evidence based on the relationship with other variables (validity criterion), four variables referring to financial life were selected for median comparison testing of the two OPRIS factors, namely: the presence of overdue debts, concern over current financial life, perceived financial stress (the five answer choices were grouped into three levels: low or no stress, medium stress, and high or extremely high stress), and consumption profile.

In the Mann-Whitney test (Table 2), people with overdue debts had higher averages of the over-indebtedness risk factor (z = -2.89, $p \leq$ .01, r = -.14) and these differences were significant (U = 14,476.50, df = 1, p = .004). The differences were significant for the protective factor as well (U = 5,511.50, df = 1, $p \leq$ .001): the averages of people with past-due debts were less than those who had no debts (z = -10.70, $p \leq$ .01, r = -.51).

Differences between the over-indebtedness protection and risk factor medians were evaluated between people with different levels of perceived financial stress (Table 2). The result was statistically significant for the risk of over-indebtedness (H [2] = 21.841, $p \leq$ .001). In the pairwise comparison, it was noted that people with no or very low stress differed from those with high or extremely high stress (z = -4.65, $p <$ .001, r = -.22), and the moderately stressed differed from those who indicated high or extremely high stress as well (z = -2.53, $p <$ .05, r = -.12).

The protection favor had a significant result too (H [2] = 85.551, $p \leq$ .001). In the pairwise comparison, the differences in the three groups' medians were statistically significant: high or extremely high stress levels had medians lower in over-indebtedness protection relative to moderate stress levels (z = 5.40, $p <$ .001, r = .26), and relative to those with low or no stress (z = 9.24, $p <$ .001, r = .44). Likewise, there was a significant difference between the averages of those who reported moderate stress compared to those with low or no levels (z = 4.07, $p <$ .001, r = .19).

As for concern over one's current financial situation (Table 2), the Kruskal-Wallis test was also significant for the over-indebtedness risk variable (H [2] = 14.072, p = .001), and the medians were statistically significantly higher for those extremely concerned compared to the unconcerned (z = 3.66, $p <$ .001, r = .17). This test was also significant for protection from over-indebtedness (H [2] = 109.51, $p \leq$ .001). In the pairwise comparison (Table 2), the three groups' medians reached statistical significance: unconcerned people had higher medians in this variable relative to the concerned (z = -7.58, $p <$ .001, r = -.36) and to the extremely concerned (z = -9.56, $p <$ .001, r = -.45). While the results of the non-parametric analyses were significant, the effect sizes ranged from small to medium. There was an exception with protection from over-indebtedness in the comparison between people with past-due debts with those with no debts, whose effect size was large (r = -.51).

Finally, the Kruskal-Wallis test was carried out with the consumption profile variable and the protection and risk factors (Table 3). As can be seen, the result was statistically significant for the risk of over-indebtedness (H [4] = 32.53, $p \leq$ .001). In the pairwise comparison, the medians reached statistical significance in three pairs, with condition 5 (I spend less than I earn and can save money monthly) having a lower median compared to conditions 3 (z = 4.07, $p <$ .001, r = .19), 2 (z = 3.95, $p <$ .001, r = .19) and 1 (z = 3.011, $p <$ .001, r = .14). The differences between the other pairs were not significant.

Table 2

Comparison of Over-indebtedness Protection and Risk factor medians according to the presence of overdue debts, perceíved financial stress, and concern with the current financial situation (N = 444)

Protection from Over-indebtedness					
Variables	*M*	*SD*	*Mdn*	*M Rank*	*U/H*
Overdue debt					
No (*n* = 339)	4.31	.58	4.31	258.74	*U*=5511.50*
Yes (*n* = 105)	3.23	.64	3.23	105.49	
Perceived financial stress					
Very low or none (*n* = 187)	4.24	.59	4.31	276.07	
Moderate (*n* = 153)	3.95	.66	4.08	219.12	*H*=85.55*
High/extremely high (n= 104)	3.44	.67	3.38	131.14	
Concern with the Current Financial Situation					
High/extremely high (*n* = 104)	3.44	.67	3.38	131.14	
Unconcerned (*n* = 164)	4.34	.53	4.46	296.73	*H*=109.50*
Concerned (*n* = 225)	3.84	.65	3.92	196.93	
Extremely concerned (*n* = 55)	3.26	.67	3.23	105.75	
Risk of Over-indebtedness					
Variable	*M*	*SD*	*Mdn*	*M Rank*	*U/H*
Overdue debt					
No (*n* = 339)	1.71	.53	1.71	212.70	*U*=14476.5*
Yes (*n* = 105)	1.90	.77	1.90	254.13	
Perceived financial stress					
Very low or none (*n* = 187)	1.74	.52	1.62	194.47	
Moderate (*n* = 153)	1.87	.56	1.81	226.20	*H*=21.84*
High/extremely high (n=104)	2.13	.73	2.00	267.46	
Concern with the Current Financial Situation					
Unconcerned (*n* = 164)	1.76	.53	1.64	199.08	
Concerned (*n* = 225)	1.88	.65	1.76	247.91	*H*=14.07*
Extremely concerned (*n* = 55)	2.16	.67	2.00	272.25	

Note. H = Kruskal-Wallis; *U* = Mann-Whitney; *M Rank* = Rank Mean. * *p* < .001.

As for the over-indebtedness protection variable, the result was significant as well ($H[4] = 226.44$, $p \leq .001$). Comparing them pairwise, the medians attained statistical significance between seven pairs, with condition 5 (I spend less than I earn and can save money monthly), being significant when compared to conditions 4 ($z = -4.29$, $p < .001$, $r = .20$) and 5 ($z = -7.20$, $p < .001$, $r = -.34$), in addition to other significant differences between other pairs, as can be seen in Table 3.

While the Kruskal-Wallis test results were significant, including the pairwise comparisons, note that the effect sizes ranged from small to medium. There was one exception involving the protection from over-indebtedness variable in the comparison of people with profile 5 (I spend less than I earn and can save month monthly) and level 2 (I spend more than I earn, and I have overdue debts I won't be able to pay in the future), which had a large effect size ($r = -.55$).

Table 3
Comparison of Over-indebtedness Protection and Risk Factor Medians by consumption profile (N = 444)

Over-indebtedness Protection				
Consumption profile	*M (SD)*	*Mdn*	*M Rank*	*H*
1. I spend more than I earn, have overdue debts, and have difficulty honoring my financial obligations (n = 13).	2.80 (.50)	2.85	46.04	
2. I spend more than I earn and have overdue debts I will not be able to pay off in the future (n = 51).	3.08 (.54)	3.15	75.07	
3. I can meet most of my financial obligations on time, but if I suffer any sort of unforeseen expense, default is certain (n = 61).	3.43 (.55)	3.43	121.57	226.44*
4. I pay my bills on time, I spend only what I earn (or a little less), but I don't usually save money every month (n = 116).	3.91 (.57)	3.96	206.78	
5. I spend less than I earn and can save money monthly (n = 203).	4.42 (.39)	4.46	310.15	
Over-indebtedness Risk				
Consumption profile	*M (SD)*	*Mdn*	*M Rank*	*H*
1. I spend more than I earn, have overdue debts, and have difficulty honoring my financial obligations (*n* = 13).	2.31 (.71)	2.10	303.35	
2. I spend more than I earn and have overdue debts I will not be able to pay off in the future (*n* = 51).	2.14 (.77)	2.14	268.68	
3. I can meet most of my financial obligations on time, but if I suffer any sort of unforeseen expense, default is certain (*n* = 61).	2.10 (.67)	1.95	265.55	32,53*
4. I pay my bills on time and spend only what I earn (or a little less), but don't usually save money every month (*n* = 116).	1.90 (.62)	1.81	228.63	
5. I spend less than I earn and can save monthly (*n* = 203).	1.70 (.45)	1.62	189.28	

Note. H = Kruskal-Wallis; *M Rank* = Rank Mean. * *p* ≤ .001.

DISCUSSION

This study sought to construct and evaluate the psychometric properties of a measure of over-indebtedness protection and risk. In contrast to measurement instruments that evaluate attributes connected to indebtedness (Chiguay et al., 2016; Coria et al., 2012; Trindade et al., 2012) found in the literature, OPRIS seeks to relate the behaviors, beliefs, and values that amplify or diminish a consumer's propensity to become over-indebted.

The sociodemographic profile of OPRIS respondents, recruited via online data collection, differs from the national, consisting primarily of white, well-educated respondents mainly residing in the national capital and one state capital. As such, it is possible that the data collected does not unequivocally reflect the reality of Brazilian as a whole, but of only a portion of the population, that which, yes, has access to the necessary means to respond to such a method (internet access, for example) and familiarity with filling out electronic forms.

The unexpected inability to recruit a substantial contingent of participants who make up a so-called clinical sample (people who are over-indebted) is also seen as a limitation. In the future, to resolve the difficulty of applying the instrument to a more diverse set of consumers, the use of in-person studies in locations serving this specific population, such as consumer protection agencies or debt counseling programs is recommended, as was the study's initial idea. Because of the limitations of social life mobility brought on by the COVID-19 health crisis as well as the unexpected shutdown of the program aimed at the over-indebted public where the data was to be collected, this strategy was not long viable.

Some positive aspects of the measurement should be noted. First is the adequate reliability indices of the over-indebtedness protection and risk factors. It should be stressed that none of the seven theoretical dimensions were suppressed after performing the EFA, which indicates their appropriateness. Note that the grouping of factors occurred logically and according to the literature. The validity criterion showed that the two factors differentiated groups according to aspects of their financial lives, specifically concerning their self-perceived stress, concern over their current financial

situation, and the presence or absence of debt. In this sample, people who felt themselves to be more stressed, who were more concerned about their financial situation, and who had more overdue debts scored significantly higher in the factors for over-indebtedness risk than protection. Finally, the items that remained in the scale caused each subfactor to be compartmentalized as either a risk or protective factor for over-indebtedness, even though, originally, certain constructs had been elaborated with statements that tended as much to one pole as the other.

As the subfactors with lower internal reliability indices (Cronbach's alphas lower than .70) consist of items related to subjective aspects of consumption (beliefs about money, social influences on consumption, and materialism) and not concrete actions related to the use of money, it could be suggested that the way people behave more significantly influences their propensity for over-indebtedness than their beliefs about it. However, considering that the internal reliability analysis of the two general factors (over-indebtedness protection and risk) also remains valid for the items originally belonging to those three subfactors, beliefs about consumption in the propensity for over-indebtedness are likewise considered influential, if to a lesser degree.

Considering the above, in practice, when intending to develop actions aimed at preventing or dealing with over-indebtedness, addressing behavioral aspects as well as affective and cognitive ones related to consumption and regarding money is recommended. Given its possible applications, cognitive-behavioral therapy is regarded as an interesting tool when formulating programs of this nature. Another aspect to be considered is the fact that compulsive buying, also known as oniomania, is characterized by psychopathology and does not merely reflect a way of acting and thinking. Opting for an interdisciplinary clinical approach increases the possibility of obtaining positive effects in addressing this specific problem.

Regarding the compulsive buying and impulsive buying subfactors, both falling under the over-indebtedness risk factor, OPRIS shows they could potentially be considered independent factors, in agreement with the results found by Kshatriya and Shah (2021). The OPRIS analysis confirms that while compulsive buying may be mistakenly called or confused with impulsive buying, these concepts have distinct meanings (Veludo-de-Oliveira et al., 2004).

Carrying out multinational studies on the subject is suggested as a way to contribute to explaining the strength of socioeconomic aspects in the tendency for over-indebtedness. As an example, consider that a higher incidence of theft in supermarkets when there has also been an increase in food insecurity in a population is highly unlikely to exclusively reflect consumers' tendency to commit crime, but instead implicates the State's inefficiency in dealing with social problems to avoid a higher rate of hunger-related theft.

Noteworthy as well was the Brazilian government's 2021 implementation, once again, of an economic policy to make credit available to the low-income population unaccompanied by any sort of financial education. By applying at a public bank, credit of up to R$1,000.00 becomes available, payable in up to 24 monthly installments with an interest rate of 3.99% per month (Governo Federal [Federal Government], 2021). Meanwhile, in most of the capitalist world, interest rates are negative (accounting for inflation). New public policies expanding credit expected to be made available in 2023 by the new government will inexorably be accompanied by projects aimed at imparting financial literacy to the population. The goal of financial education is to foster behavioral changes in people and groups regarding the use of finite financial resources (Ferreira, 2015). It is, however, crucial to put into practice a new social income distribution program, considering consumers' vulnerability to the banking system's pitfalls, if concomitant financial education policies are not also in place, the aid may yet increase the over-indebtedness of these families in the medium term.

FINAL CONSIDERATIONS

The present study is considered to offer a relevant and easily applied psychometrically valid instrument for evaluating protection and risk factors for over-indebtedness. It is hoped that OPRIS may be used to measure specific aspects of people, groups, or populations in a way that lessens their propensity to become over-indebted (protective character) and more likely to get out of this situation (treatment character).

It is believed that the instrument has the potential to contribute to public policies aimed at reducing the negative consequences of this problem for society and diminishing the negative consequences over-indebtedness imposes on people victimized by this evil, which is affecting more and more people and taking on ever more complex contours. The social consequences related to the abandonment of these people by the labor market have effects on society, particularly the productive sector, the driving force behind the country's economic development.

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