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OVERINDEBTEDNESS AND SELF-PERCEPTION OF SOCIAL STATUS – A CASE STUDY IN GREAT PORTO REGION (PORTUGAL)

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Palabras-clave: endeudamiento; sobreendeudamiento; Autopercepción estatus social; análisis discriminante.

Key words: indebtedness; over indebtedness; self-perception social status; discriminant analysis.

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Abstract

The aim of this paper is to explore the relationship of self-perception of social status (SPS) and propensity towards indebtedness related to consumer goods' acquisitions. It also intends to identify the variables that discriminate the propensity towards overindebtness. We have used a questionnaire specifically designed for this purpose, using several elements from Gathergood (2012) and Adler & Stewart (2007) questionnaires. The survey includes 312 individuals, the majority living in the Greater Porto area.

Using logit regression and discriminant analysis, we observed that SPS might plays a significant role in the process of indebtedness and overindebtedness. Only gender did not have an association with indebtedness. Education should also be a distinctive factor between all the three groups of indebtedness.

Key words: indebtedness; over indebtedness; self-perception social status; discriminant analysis.

Resumen

El objetivo de este trabajo es explorar la relación entre la autopercepción del estatus social (AES) y la propensión al endeudamiento relacionado con las adquisiciones de bienes de consumo. También tiene la intención de identificar las variables que discriminan la propensión hacia la sobreindependencia. Hemos utilizado un cuestionario específicamente diseñado para este propósito, utilizando varios elementos de los cuestionarios Gathergood (2012) y Adler & Stewart (2007). La encuesta incluye a 312 personas, la mayoría residentes en el área del Gran Oporto.

Utilizando la regresión logit y el análisis discriminante, observamos que las AES podrían desempeñar un papel significativo en el proceso de endeudamiento y sobreendeudamiento. Sólo el género no tiene asociación con el endeudamiento. La educación también debe ser un factor distintivo entre los tres grupos de endeudamiento.

Palabras clave: endeudamiento; sobreendeudamiento; Autopercepción estatus social; análisis discriminante.

INTRODUCTION

For decades, that Human Being assume a full rational decision maker and that based on the same information would always make the same decisions. Currently a volume of relevant research that contradicts this idea; not that people do not want to achieve the best possible result, but there are a number of emotional, cognitive and social limitations that place them in a state of limited rationality (Thaler, 1985). A good example of this limited rationality may be, as Nofsinger (2012) suggests, the subprime crisis that began in the USA in 2007. This originated in the granting of credits to individuals with a doubtful credit history and that under normal circumstances would never had obtained it. The inevitable default of these agents created a shock of enormous magnitude that had a negative impact not only in the United States but also in the World. For Shefrin (2010), in this particular crisis, but also in others that had occurred throughout history, the causes are essentially psychological and behavioural, but always in relation to other, financial and economic factors that when combined with these behavioural ones generate crises. Therefore, those theoretical concepts currently used to explain the decision making process in the Economy are of greater importance when we contextualize them with the global impacts that these crises may have. More specifically, this notion of Behavioural Economics aims to complement the models studied within the Neoclassical Theory and that brings to the table the expectations, motivations, and the material and psychological needs of individuals (Samson, 2014). In order not to fall into past mistakes, it is important to note that this behavioural model of analysis cannot be seen as a panacea of the economic decision-making process. Obviously if it is associated with the other traditional models, the explanatory capacity of both will be superior.

Tversky and Kahneman (1973) developed a theory about heuristic judgment in the decision-making process: since individuals cannot access all information in a choice process, they choose to base their decisions on the cognitive biases they have, to detriment of a purely rational choice. The authors describe several heuristics that the human being uses in the decision-making process: availability, representativeness, adjustment, and anchoring (Tversky & Kahneman, 1974). This model proved adequate to explain the choices made by individuals in various contexts of human experience. From the overestimation of the probability of an extreme phenomenon (terrorist attacks) (Lieder, Hsu, & Griffiths, 2014) to Marketing, where heuristics can be used to understand consumer behaviour, such as lexicographic heuristics, recognition, and something that the authors call heuristics 1/N (Gigerenzer & Kurz-Milcke, 2007). In addition, of course, the field of finance where not only heuristic is used to understand the behaviour of professional investors and individual investors (Chater, Huck, & Inderst, 2010; Duclos, 2014).

Mental accounting is a concept developed by Thaler (1985) which states that persons separate their money and other assets into different categories and with different timeframes and utilities. Of course, this separation has an impact on how persons use these groups of assets: some groups are to be consumed or used quickly and without major concern and others to be monetized. Thaler (1985) suggests four principles: segregating gains, integrating losses, cancelling small losses with greater gains, and finally segregating large losses from other gains. The way the person organizes these "accounts" is also the target of logical fallacies and cognitive biases. For example, in relation to resource consumption, an person undervalues the value of a resource and therefore consumes it more if the account is larger and cognitively more accessible (Morewedge, Holtzman, & Epley, 2007; Prelec & Simester, 2001). Another example is that it is natural for a consumer to spend more money and to undervalue what he or she is consuming when making a payment with a credit card than with money.

As for the social status, this has influence on the strength of social proof. When individuals of high social status adopt a behaviour, it is expected that others with lower status adopt this behaviour, due to the greater credibility attributed to these elements - the known role of idols. Understandably, this movement is transverse when applied to organizations: decisions made by higher status organizations are perceived as being closer to the ideal (Bikhchandani, Hirschleifer, & Welch, 1992; Rao, Greve, & Davis, 2001).

In the last decades, there has been a gradual increase in household indebtedness. This phenomenon has been reported in several economies and regions of the world (Montgomerie, 2009; Santos, Costa & Teles, 2013). As Santos et al. (2013, p. 23) stated, "consumption does not reflect individual preferences or idiosyncrasies, but it mirrors the social context in which persons meet, which provides the current consumption standards. Nor does it obey the budgetary constraints of individuals, as any deviation from those standards of consumption is felt as a serious violation of personal dignity". Thus, sometimes persons and households, in order to maintain their status quo associated with their perceived social status, incur indebtedness and when unforeseen circumstances or setbacks associated with their economic condition change, they may even default. Santos et al. (2013) also point out that competition for social status leads the lower strata also seek social affirmation by displaying their conspicuous consumption and are in an incessant quest for the acquisition of goods associated with the next higher social strata, which in turn seek new luxuries in an attempt to preserve their social status. However, the demand for status through consumption will never end, given the constant need for social differentiation and affirmation. It was observed that the increasing gap between income level and aspiration level encouraged the use of credit, resulting in a gradual deterioration of household's finances (Santos et al., 2013). Schor (2002) also notes that the increase in the indebtedness of American households is associated with an increase in the number of working hours, and they are trapped in an uninterrupted cycle of work and consumption. Referring to the US reality, Montgomerie (2009) argues that stagnation in income and rising social inequalities have led households to borrow to fill the income-expenditure gap. The indebtedness of American households is thus associated with the consolidation of the post-war mass consumption, mentioned above, the expansion of consumer credit being explained by the attempt to maintain a historical and politically constructed standard of living, defining the American way of life" (Montgomerie, 2009).

In this context, we intend to study how the social status perceived by persons influences their decision-making process in relation to credit and, consequently, can explain the level of over-indebtedness. It also intends to identify the variables that discriminate the propensity towards overindebtness. To this end, will be carried out a questionnaire survey on 312 persons living in the Greater Porto area. It intends to test four hypotheses related to the persons' age, sex, literacy (formal education) and self-perceived social status. A logit analysis and discriminant analysis was applied.

The paper is organized as follows: after this introduction, a summary characterization of the state of household indebtedness in Portugal is presented; then, it is described the methodology adopted in the present research: the hypotheses, the sample and the data collection instrument. In the third section, we present the results obtained and, finally, in the last part, we discuss the main conclusions, limitations and suggestions for future research.

1. OVER-INDEBTEDNESS IN PORTUGAL

Although there is no stated consensus on the definition of what exactly is over-indebtedness, more specifically, what are the factors that distinguish those whom are indebted from those whom are over-indebted. For example, Dearden, Goode, Whitfield, and Cox (2010) opted to enquiry persons about their definition of over-indebtedness and, thus, took advantage of their opinions to build the definition of over-indebtedness. For the majority of the respondents, their definition of over-indebtedness was linked with its own history of debt. However, the majority of the reports refers that the debt is an integral part of the credit and over-indebtedness occurs when a person no longer guarantee the payment of these claims (Dearden et al., 2010). In the aftermath of the 2008 crisis, the European Commission produced a report in which it defines over-indebtedness as a person or a household that is unable to ensure the supply of their financial needs to their creditors, by using their current resources or those that can be obtained in the near future. A more objective form, when the person declares to be unable to pay its obligations, such as rentals, water, and electricity because of debt charges, whether these were planned or not (European Commission, 2010).

Anderloni and Vandone (2010) define two types of over-indebtedness, according to their origin: active and passive over-indebtedness. Passive over-indebtedness occurs when unforeseen external factors caused financial difficulties to the person, which eliminate their source of income and precipitate indebtedness. Active over-indebtedness occurs when indebtedness results from individual options and creates unsustainable commitments for the indebted - traditionally associated with consumerism and lifestyle. In short, active indebtedness depends on an unsuitable lifestyle of financial capabilities. On the other hand, passive indebtedness is due to unforeseeable external factors that precipitate indebtedness, such as a situation of unforeseen unemployment or a serious health problem, which implies a higher than expected expense.

According to the report of the European Commission (2010), Portugal is one of the European countries where the savings rate is lower. If one compares with the remaining Euro Area one realizes that it is rather smaller and that it has been decreasing. Obviously, these reduced savings values reduce the resilience of individuals in case of unforeseen events, such as unemployment, forcing them to resort to borrowing to meet current expenses (Banco de Portugal, 2015, European Central Bank, 2015). Thus, this combination of low incomes, high indebtedness and low savings make the Portuguese very susceptible to over-indebtedness and possible non-compliance, which has consequences not only for the households but also for society as a whole, since it is a systemic problem.

High indebtedness complemented this low saving rate: in August 2015 total debt, as a percentage of disposable income of Portuguese households was almost 105% after a downward trend. It is possible that in the future the amount of credits granted will increase due to the greater availability of financial institutions to lend and the increase in the purchase of durable goods, such as automobiles (Banco de Portugal, 2015, European Central Bank, 2015). This increase in confidence may reverse slight downward trend in the period 2008-2016.

According to the Financial Stability Report of the Bank of Portugal (2015) the largest number of loans granted by the Portuguese financial system is for housing (Figure 1).

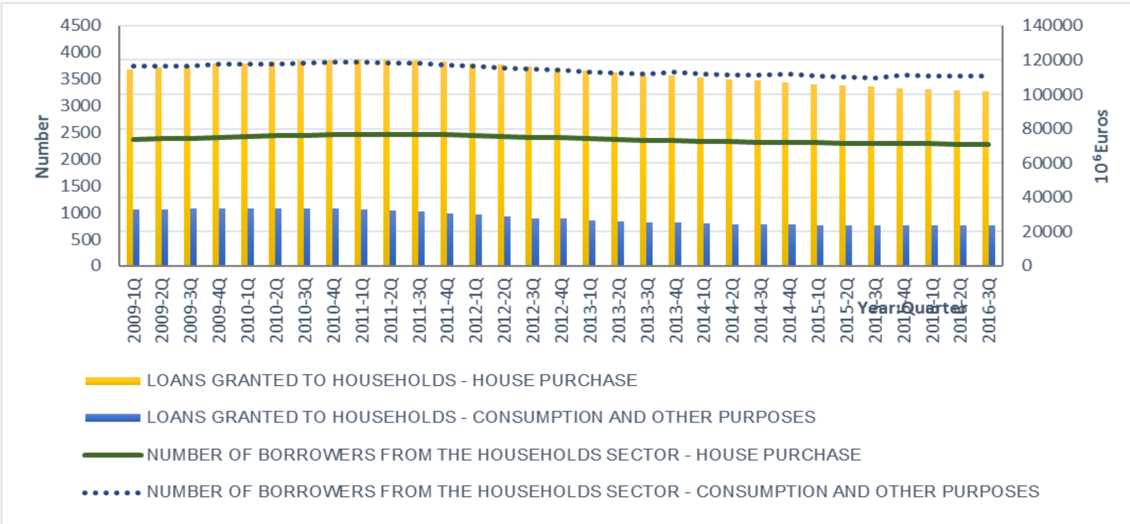

Figure 1 - The time series of loans granted to Portuguese households, in monetary units and number of borrowers, in the period 2008-2016

Source: Banco de Portugal (2017)

However, it is curious to note that households default on consumer loans and other loans, much more than house purchase loans. The default on mortgage loans has been stable since 2009, as opposed to other loans, in which non-compliance has increased, to about double (see Figure 2).

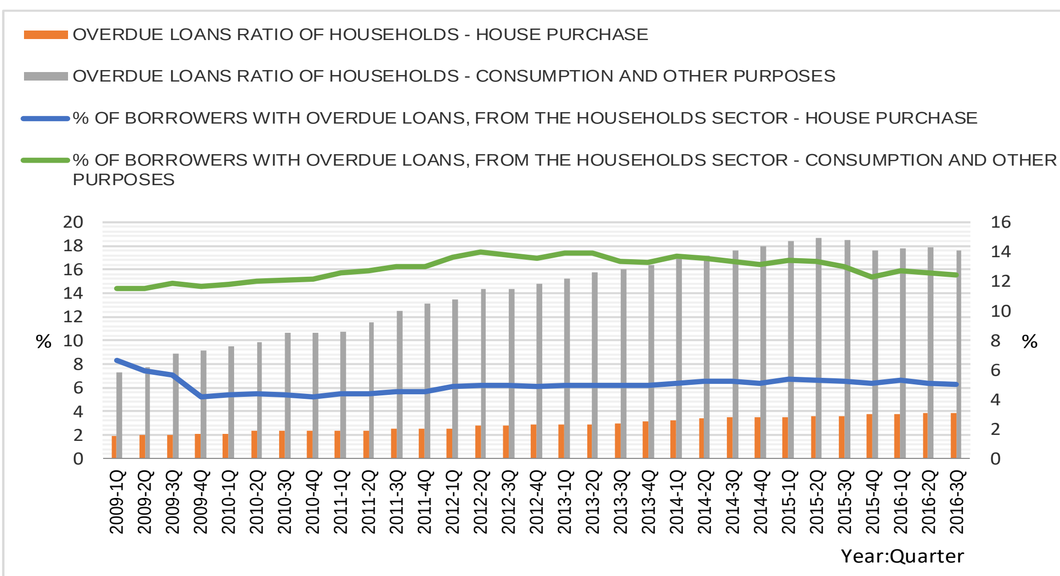

Figure 2 - The time series of overdue loans of Portuguese households, in the period 2008-2016

Source: Banco de Portugal (2017)

The reasons that have been identified for the behaviour of over-indebtedness are, according to Frade, Lopes, Jesus and Ferreira (2008), those related to contraction of personal credit and use of credit card to (i) pay other debts (45.2%), (ii) access to essential goods due to the saturation of disposable income (31.4%) and (iii) temporary financial difficulties (28.1%). From here, one can assume that the most immediate reason for over-indebtedness is the decrease in disposable income, since it is not only the main factor to justify the situation, but also seems to be an independent relation of the levels of income presented by the indebted. Obviously, the more accumulated debts a person or society has, the more difficulty it will have to deal with this shock, thus entering into a situation of over indebtedness and possible default. This is a relevant issue, since one of the main causes commonly presented for the financial shock that provokes the over-indebtedness is unemployment (Frade et al., 2008). The causes related to behavioural or emotional motives, namely to maintain the lifestyle, were presented with less weight (Frade et al., 2008).

However, a fall in income, through for example unemployment, though important, is not the essential condition for the debt, being much more relevant to the fact that there is already a disposable income relatively low, and that is already being consumed with debt amortization (Frade et al., 2008). In relation to this decrease in income, Karen and Kempson (1994) argued for a bold proposal related to their work on credit card debt, since most individuals who suffer from a decrease in income opt for credit surpluses not have to change their consumption habits. Thus, in the short term do not need to decrease the expense.

It is also pertinent to evaluate, from a sociological perspective, some of the reasons for over-indebtedness. Some sociologists establish a causal relationship between a social pressure of a so-called "consumer culture" - which is characteristic of a consumer society - and individual indebtedness levels - in these societies consumption is no longer just a social function of obtaining goods necessary for survival, to become a social identity (Montgomerie, 2009; Schor, 2002). From that point on, a member of this society is more normative than consuming, causing an upward spiral of indebtedness in this society (Burton, 2008). It is complex to create relationships between the factors intrinsic to the individual and that cause over indebtedness. According to Frade et al. (2008), in Portugal, the mismanagement of personal finances is one of the main reasons for the situations of over indebtedness that individuals presented, that is, a matter of self-discipline and knowledge in the acquisition of credits for the management of day-to-day expenses. However, these individuals pointed out the causes of the circumstance unfavourable to external factors, which in fact is correct, but which turns out to be a mitigation of the true problem.

Gathergood (2012) concluded that there is a strong relationship between this abusive crediting and self-control in the procurement of consumer goods and services in the United Kingdom. Although financial literacy is a popular predictor for legislators, the author has obtained evidence that self-control plays a more important role in acquiring multiple credits, which increases the risk of over-indebtedness. Beyond the question of self-control, there are certain cognitive inclinations to which individuals are subject. As we said earlier, the human being makes decisions in order to obtain the maximum usefulness, but in limited circumstances and without access to all the relevant information, it is natural that the decisions have unforeseen consequences. For example, it is common for individuals who hire credit to underestimate the odds of certain events that may call into question the quality of the credit they are hiring. In particular, if individuals live in a relatively prolonged situation of relatively little liquidity, since the permanent focus on day-to-day problem solving creates an exacerbated concentration in the short term and has an impact on the planning capacity and evaluation of rewards in the medium and long term (Kilborn, 2010; Schicks, 2010). Obviously, the lower the income of these people, the less this intertemporal balance of utility.

2. HYPOTHESES AND RESEARCH DESIGN

The general objective of this research is to explore the relationship existing between the self-perceived social status and the propensity to over-indebtedness, for the purchase of consumer goods. It is clear from the review of literature that this relationship does not have extensive theoretical basis. However, a number of studies infer to the deepening of this relationship between behavioural factors such as social status and indebtedness.

In the present research, we intend to test the following research hypotheses supported by the literature review:

RH1: *Individuals, who perceive themselves as belonging to a lower social status, have a higher propensity to over-indebtedness.*

The social status is the prominence, respect and influence that individuals benefit in the eyes of others (Anderson, Srivastava, Beer, Spataro & Chatman, 2006). This dynamic is so important for the organization of our society that individuals who seek to obtain a higher social status, in a way considered illegitimate by the members of a group outside the belonging group, these individuals incur in lower values of social acceptance. However, individuals seem to reveal a proper perception of social status, which is attributed to them by others (Anderson, Sweeney & Williams, 2011; Wood, 1998).

To explore this hypothesis it is necessary to find a link between indebtedness and perceived social status: Martineau (1958) argues that all elements of all social classes consume and, as such, only what they consume varies and serves to demonstrate that status. The author does not address the issues of social mobility. These acquisitions of goods and services appear to be a valid strategy for people of lower social classes, to rise in the social hierarchy, mainly using consumer credit (Dwyer, McCloud & Hodson, 2011). However, researches done in India, a society known by its caste society revealed a relationship between financial knowledge and the relative position of the caste in which individuals belongs: financial knowledge was higher in the higher castes and relatively poor in the lower castes (Bönte & Filipiak, 2012).

RH2: *younger Individuals have a higher propensity for indebtedness.*

In relation to this hypothesis, the literature review showed ambiguous results. One of the facts pointed out by this ambivalence may be related to a methodological factor: over-indebtedness is traditionally measured at the household level and not specifically at the individual level (European Commission, 2010). Based on the DECO survey (Frade et al., 2008), the age group with highest incidence of indebtedness is comprised of individuals between the ages of 30 and 39 (31.6%). The European Commission's own report also found evidence in this respect, but with a different emphasis. If we consider that the household is exclusively composed of adults, then the age group that presented a higher proportion of over-indebtedness was the one among individuals between 25 and 39 years. If the household includes minors, then the highest proportion is up to 15 years of age (European Commission, 2010). Of course, minors cannot take credit. These numbers mean that households with children had a slightly higher proportion of indebtedness. It may be a line of relevant research, but that is beyond our scope. Still in the Portuguese reality, a research on the indebtedness of the Portuguese households found a negative relation between the age and the indebtedness of the families: that is, as the average age of the families analyzed increased, the value of the various debts contracted was decreasing (Costa & Farinha, 2012).

RH3: *"Female" Individuals have a higher propensity to over-indebtedness.*

Starting again from the DECO survey (Frade et al., 2008) females were the ones with the highest incidence of over-indebtedness cases (55%). By deepening the roots of this gap, there is evidence for the issue of financial literacy. Several studies corroborate this notion that over-indebtedness is superior in the female gender, due to lower level of financial literacy, not only objective but also perceived (Drolet, 2016; Schicks, 2010). However, it is important to reminder that in heterosexual couples, the male partner performs most of the time, long-term financial management. The study carried out by Costa and Farinha (2012) for the Bank of Portugal, regarding this theme, concluded that this variable is not a predictor of the number of credits that a household has. Obviously, this does not mean that over-indebtedness is no longer prevalent in the female gender. As such, and according to the previously disclosed studies, it tests the hypothesis that there is increased risk in the female gender for over-indebtedness.

RH4: *Individuals with less formal literacy have a higher propensity to over-indebtedness.*

According to the literature, formal literacy is one of the socio-demographic variables that the various studies support in a generalized way: there is a strong and negative correlation between education and the indebtedness of individuals or households, that is, the higher education level of an individual or household, the lower the propensity for indebtedness (Bönte & Filipiak, 2012). Some authors consider that there is a moderating factor in this relationship - financial literacy. With the same orientation as education, the higher the level of financial literacy, the lower propensity for indebtedness. This effect has been observed in several western societies, where markets have well-developed financial structures and products (Grohmann, Battistella, & Radons, 2012; Lusardi & Tufano, 2009; Schicks, 2010). Nevertheless, the relationship appears to be crosscutting in many cultures and countries around the world, even though financial literacy is considered relatively low overall. Women and young people are considered mainly "risk groups" for indebtedness (Lusardi & Mitchell, 2011).

In order to collect data to test the proposed research hypotheses, we applied a questionnaire created for this purpose, based on others already used in studies with a different main objective. The questionnaire is divided into three sections: a section to collect data, such as age, gender, academic qualifications, marital status, household region of residence and employment status. This first section was designed to support gender, literacy and age hypothesis, but also to support other assumptions. The second section, which evaluates over-indebtedness, uses the same method as Gathergood (2012): use of indicators of over-indebtedness that denote default. Although non-compliance is not a necessary cause of over-indebtedness, the author suggests that there may be households who expect future income to need to incur a high level of indebtedness in relation to their current income. Hence the relevance of considering non-compliance (Gathergood, 2012). As in the Gathergood (2012), answers to items 5 or 6 meet the definition of over indebtedness. However, a person is more indebted the higher the answer value. The third section intends to assess the self-perceived social status, using the MacArthur Scale of Subjective Social Status. This instrument assesses the individuals' perception of their social status, asking them to define their social status, on a "social ladder" numbered from 1 to 10 marking with an "X" on the rung on which they feel they stand (Adler & Stewart, 2007). There are two versions of the ladder, one linked to traditional socioeconomic status indicators (SES ladder) and the second linked to standing in one's community (community ladder). The difference between these two ladders may be of particular interest in poorer communities in which individuals may not be high on the SES ladder in terms of income, occupation, or education, but may have high standing within their social groups such as a religious or local community (Adler & Stewart, 2007). According to the authors of the scale, the factors mentioned as the main source of perceived social status are material wealth (more than 90%). Next factors were occupation and education. Moreover, here lies one of the main criticisms on this scale: it is not clear whether these factors were mentioned because they are exactly one of the concerns of the studied individuals or if the description that is presented to individuals anchors them in these factors. For example, more personal factors such as, health, spirituality, and ethics, have been mentioned much less frequently, as they also have a considerable impact on how individuals position themselves in society (Adler & Stewart, 2007). According to a longitudinal study carried out in Brazil, the societal scale revealed good reliability, as opposed to the community scale that proved to be less reliable (Giatti, Camelo, Rodrigues, & Barreto, 2012). Thus, we chose to place a relative scale, only, the position of the individual in society.

This survey used a convenience sample, composed of households or individuals who meet the minimum requirements for contract a credit or any other type of debt, even if they do not have them. The only criterion is that they are eligible for credit. More specifically, they are adults (over 18 years of age). The sample was obtained by personal distribution of the questionnaire and by the availability of these in an online platform for filling in questionnaires from May to August 2016. 332 individuals answered the questionnaires. However, only 312 (96%) questionnaires are valid because some of the individuals reported age under 18 years. This sample had 63.8% men and 36.2% women, 93.8% lived in Greater Porto area and 97.3% were employed. The methodology used to obtain the sample explains this imbalance. The mean age of the sample is 34 years (standard deviation (SD) = 8 years) and ranges from 18 to 60 years. As for literacy, 18.9% reported having 9th grade, 43.9% 12th grade (secondary school) and 26.9% Bachelor's degree. 10.3% had graduations above the

Bachelor's degree - Masters and PhD. Respondents' households are composed of a mean of three persons, with a SD of one. On average, these households have one child. About 35% has a net monthly income between € 751 and € 1000.

To test the hypothesis and describe the obtained sample we applied several multivariate statistical techniques, using the IBM SPSS and STATA software. As the variables under analysis are most of them nominal and ordinal (Gender and indebtedness are nominal; Self-perception Social Status – SPS – and Academic Qualifications are ordinal). The variable “Age” is continuous but it was transformed into intervals of age (4 intervals), and treated as ordinal. The dependent variable is “Indebtedness”. The independent variables are SPS, Age, Gender, and Academic Qualification (AQ). To analyze the relationship between dependent variable and the independent ones, due to its characteristics, a Chi Square tests-of-independence was conducted. This measure is appropriate to measure the association between nominal and ordinal variables. If any assumptions of Chi-squared test is violated, for nominal variables, it was applied the Cramer’s V test that is appropriate when crosstabulation table is larger than 2 x 2 (as it is the case). This measure is symmetric (it does not matter which is the independent (column) variable). It measures the strength of the association. Additionally, it was applied a Goodman-Kruskal tau test. This is a Proportionate Reduction of Error (PRE) measure. It suggests an association between two variables and its strength. It quantifies the error reduction on the prediction of the dependent variable due to an independent variable (Marôco, 2014).

We perform a logistic regression that allows us to obtain the probability that several independent variables predict a nominal dependent variable. We use this procedure because it is not predictable that the relationship between the dependent and independent variables is linear (Anderson, et al, 2011). Given the characteristics of the variables under study, the procedure to be used is a generalization of logistic regression - the ordinal regression that is used for dependent variables with ordinal characteristics. The assumptions are as follows: i) The dependent variable is ordinal, ii) there is no multicollinearity between independent variables, and iii) the influence of independent variables on their percentage of the dependent is proportional. We chose this procedure to the detriment of multinomial logit regression since it maintains the order of magnitude of the dependent variable which makes the subsequent analysis more interesting (Agresti, 1996).

To identify the variables that discriminate the propensity towards overindebtness, we apply discriminant analysis and split the sample in three groups: I – households who reported not having difficulty paying bills and obligations with credits; II – households who present difficulties of some kind in the payment of bills and obligations with credits, but that did not fail in any of the two; and III – households who reported difficulties and that at some stage has defaulted.

3. ANALYSIS AND DISCUSSION OF RESULTS

Due to methodological and temporal constraints, this study is essentially exploratory, despite the establishment of some correlations between various dimensions. Bivariate analysis was applied to assess if the variables are related each other as well as the strength and orientation of this relationship. We applied the Chi-squared independence test once some of these variables are nominal and ordinal. For all independent variables, except gender, the Chi-squared independence test rejected the null hypothesis of independence, but the assumptions of test were violated, except for the variable AQ.

As the assumptions of Chi-squared independence test were violated, we applied the V-Cramer coefficient and Goodman and Kruskal's tau to identify the strength of the association and its direction. As in previous test, all independent variables show statistically significant association (with a level of significance of 5%) with indebtedness except the genre variable. The pair "Indebtedness/SPS" has a moderate association (V=0,355; p-value<0,001) as well as the pair "Indebtedness/AQ (literacy)" (V=0,4; p-value<0,001). This seems to indicate that indebtedness is associated SPS and literacy (using as proxy the AQ). The pair "Indebtedness/Age", although has a statically significant association, has Cramer's V lower than 0,3 which indicate that the relation between variables, though not by chance, is not strong (Marôco, 2014). Analyzing the Goodman and Kruskal tau test results (we have only reported the results using indebtedness as dependent), the percentage improvement in predictability of the Indebtedness given the value of PSS is 11,8% (□=0,118; p-value<0,001) and the percentage improvement in predictability of the Indebtedness given the value of AQ (literacy) is 12,9% (□=0,129; p-value<0,001). In relation to variable "age", the percentage improvement in predictability is low (□=0,033; p-value<0,001).

4.1. Logit regression

Although this assumption is not per se of this test, to ensure its robustness it was necessary to adapt some variables to the particularities of the procedure. According to Agresti (1996), this procedure is poorer if the cells resulting from the dependent and independent crossing of the variables have a zero or much reduced frequency. As such, after observing the cross-referencing of the variables, we chose to transform the independent variable "AQ" by associating the two top "Doctoral" and "Master" options in "Masters and above". In this way the conceptual notion of greatness of the AQ (used as proxy for literacy) is maintained and a level of scale is lost, but it allows to make the model more robust increasing the frequency in the cells of the variables (Agresti, 1996).

The model obtained a reasonable measure of goodness-of-fit (χ^2 Pearson = 254.53, p-value= 0.12) which demonstrates that the model fits the relationship between variables. The Pseudo R^2 value that defines how much of the variance is explained by the proposed model is 0.373, i.e. 37%.

Table 1: Ordinal Logit Regression Summary Results

Variables	**Estimate**	***p-value***	**with 95% confidence:**		**Likelihood**		
			Minimum	**Maximum**	**Estimate**	**Minimum**	**Maximum**
SPS	-0,78	0,01	-1,02	-0,53	0,46	0,36	0,59
Have 9th grade?	1,62	0,01	0,66	2,56	5,05	1,94	12,90
Gender (M/F)	0,11	0,64	-0,34	0,56	1,11	0,71	1,74
Age 18 to 25 years?	-1,05	0,03	-2,00	-0,09	0,35	0,13	0,91
Age 26 to 35 years?	-1,08	0,01	-1,92	-0,24	0,34	0,15	0,79

Note: SPS – Self-perception of Social Status

According to the obtained results, we observe that all independent variables (SPS, individuals with 9th grade as AQ, age between 18 to 25 years and 26 to 35 years), except gender, contribute significantly to explain the indebtedness, considering the significance level of 5% (that is, □ = 5%). As can be seen in Table 1, in relation to SPS, the increase of one unit in the SPS reduces the probability of a higher level of indebtedness by 0.46 times (the upper and lower probability limits being 95% confidence: 0.36x - 0.59x). The decrease in SPS has the opposite interpretation: the decrease of one unit of SPS increases the likelihood of a higher level of indebtedness by 0.46 times.

As for the AQ, only the answer "9th grader" as AQ presented a relation. A person who has 9 years of education has an increase 5.05x to report higher level of indebtedness (upper and lower likelihood limit with 95% confidence: 1.94x - 12.90x). Finally, in relation to age, we observed that there is a relationship between the age groups of 18 to 35 years and indebtedness. Belonging to the age group of 18 to 25 years increases the probability of

higher level of indebtedness by 0.35 times (upper and lower probability limit with 95% confidence: 0.13x - 0.91x). Belonging to the age range of 26 to 35 years increases the probability of a higher level of indebtedness by 0.34 times. (95% confidence: 0.15x - 0.79x).
According to the present research, not only was a significant association between the level of debt reported and SPS, but it was found that associating SPS to other factors such as gender, age and literacy (measured by AQ), make it a predictor of indebtedness of a person or household by a maximum up to 0.59x (see table 1).

4.2 Discriminant analysis

After checking the assumptions to apply discriminant analysis, the sample was divided into 3 groups from the variable indebtedness. The respondents were distributed as follows: Group I (households who reported not having difficulty paying bills and obligations with credits) has 95 (30,4%); Group II (households who present difficulties of some kind in the payment of bills and obligations with credits, but that did not fail in any of the two) has 167 (53,5%); and Group III (households who reported difficulties and that at some stage has defaulted) has 50 (16%). Of these three groups, two discriminant functions were created: the first function explains 86.5% of the variance and the second function explains 13.5%. After analysis of the Wilks Lambda, both functions are necessary to explain the differences between groups (canonical correlation: 0.62, Λ Wilks = 0.56, p-value = 0.01 for function 1 and canonical correlation: 0,30, Λ of Wilks = 0.91, p-value = 0.01 for function 2). To explain the differences between the three groups both discriminant functions are required.
The function centroids analysis complements this distinction: function 1 can be used to distinguish individuals belonging to Group I from those belonging to Groups II and III, since the centroids have different arithmetic signals. On the other hand, the second function allows to distinguish Group II from Group III. In addition, we can see from the graph (see Figure 3) that the centroids of the functions although close are distinct from each other.

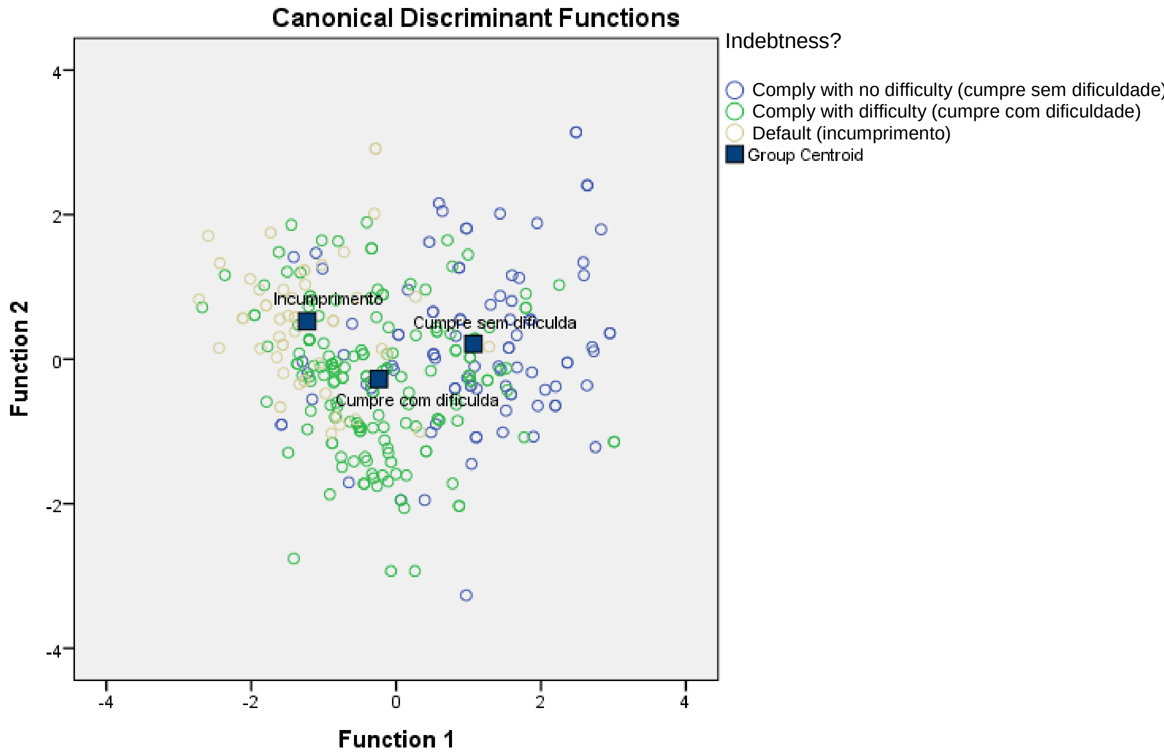

Figure 3 - Graph of the centroids of the discriminant functions

Assuming a cut-off point of 0.2, we can now analyze the coefficients of both discriminant functions: In function 1 the SPS, "Number of Children", "Academic Qualifications" and "Net Monthly Income" variables distinguish individuals belonging to the Group I of those belonging to the other two Groups (see Table 2). It should be noted that the variable "Number of Children" has a negative sign and that it has a different interpretation of the other coefficients: the less children indicated, the more likely it is to belong to Group I. Regarding the function 2, variables are similar (as can be seen in Table 2). Thus, what distinguishes Group II from III are the variables "Family Aggregate", "Number of Children", SPS, "Age", "Number of Other Dependents" and "Academic Qualifications". The variable "Number of other Dependents" and “Academic Qualifications" has a negative sign thus has the same reading as the "Number of Children" relative to the previous function.

Table 2 - Matrix of correlations of the variables with the discriminant functions

Variable	Distinguishes Group I from II	Variable	Distinguishes Group II from III
Monthly Net Income	0,72	Family Aggregate	0,84
Academic Qualifications	0,69	SPS	0,67
SPS	0,64	Number of Children	0,47
Gender	0,13	Age	0,34
Number of Other Dependents	-0,02	Monthly Net Income	0,19
Family Aggregate	-0,06	Marital state	0,15
Age	-0,16	Gender	-0,18
Marital state	-0,17	Academic Qualifications	-0,23
Number of Children	-0,20	Number of Other Dependents	-0,40

Note: SPS – Self-perception of Social Status

4.3 Results discussant

In relation to the factors that the literature traditionally points out, we did not find any association with the gender of the respondent. In the case of the present sample, gender did not foresee the indebtedness of a person or household. By now in the case of literacy is the opposite: a person with the 9th grade is much more likely to have higher levels of debt as opposed to another with higher literacy. There is also a strong association between both variables, as can be verified by the bivariate analysis. However, the role of AQ is difficult to define, since the main differentiating factors between groups were the net income of the household and the number of people in the household (family aggregate). As such, it is not possible to confirm that financial literacy was a differentiating factor in this sample, since individuals with higher qualifications also had a higher net income. Finally, age also plays a significant role in indebtedness. In the present sample, individuals aged 18-35 had up to 0.34 times more indebtedness than older individuals. Knowing that 43.3% of the elements of this sample are more than 36 years old, it is legitimate to assume that the younger ones were at greater risk of over-indebtedness. According to our study, not only did we find an important association between the level of indebtedness reported and the SPS, we realized that associating SPS to other factors such as gender, age and literacy (measured by AQ) make it a predictor of an individual's indebtedness or added up to a maximum of 0.59x.

We also find that this SPS distinguishes not only individuals who have no difficulty in meeting their financial obligations from those who have difficulty, but also from those who are in default. In other words, a high percepted social status differentiates those who are under-indebted from those who are heavily indebted and differentiates those who are heavily indebted from those who are in default.

4. CONCLUSIONS, LIMITATIONS AND FUTURE RESEARCH LINES

In conclusion, it is important to note that the dynamics of overindebtedness is like all social phenomena, complex to explain and difficult to predict due to the large number of variables that have an impact on the result. It can be seen from the literature review that there are several factors that are present in over-indebtedness situations: unemployment (Banco de Portugal, 2011, Costa & Farinha, 2012), presence of children in the household, no home ownership, low financial literacy, being young and a financial shock in the domestic budget (European Commission, 2010; Schicks, 2010). However, these factors need to be contextualized, or associated with others, so that a situation of over-indebtedness is precipitated. In fact, the unemployment situation is a considerable factor in cases of over-indebtedness, but it only has a significant impact in cases of low schooling and/or few saving habits (Costa & Farinha, 2012; Santos et. al, 2008).

In the study by Gathergood (2012), despite the central role of financial literacy, it found individuals who had high financial literacy but also incurred in over-indebtedness situations, in part because of the impulsive behaviours they took in relation to consumption. Of course, human beings aim to maximize the usefulness of their decisions; however, they do not always have access to all the information. On the other hand, other emotional elements influence the decision and make it imperfect. Hence, starting from the theoretical framework of Kahneman (2011) and Tversky & Kahneman (1974), it is perceived that there is a limited rationality that compels people to seemingly contradictory behaviours in the financial decision making process: for example, to acquire goods with a Credit card behaviours of over-indebtedness regardless of the financial literacy of the individual concerned (Karen & Kempson, 1994). Nevertheless, not only cognitive factors enter into this discussion. Social factors also have a relevant impact on the various processes that lead individuals to engage in over-indebtedness behaviours: phenomena such as social proof condition the results of decision-making processes - in studies carried out in companies with a strong social status distinction, there were differences in financial literacy and in the context of the financial decision. Individuals with higher social status were less prone to over-indebtedness and greater financial literacy. On the other hand, their decisions were considered to be of better quality than those of lower social status (Bikhchandani, Hirschleifer, & Welch, 1992; Rao, Greve, & Davis, 2001). Summing up, in the search for social mobility and in the attempt to ascend to higher social levels, investment and/or consumption are necessary to guarantee this social mobility.

Based on this research, we draw two main conclusions: although financial education is extremely important for the prevention of excessive debt, it is important to realize that there are other important variables that need to be taken into account by decision-makers. It is important that more education that is formal exists in financial areas, but also emotional education specifically targeting these areas. The same can be said in relation to advertising by credit granting companies. As Schicks (2010) concluded, it is common for these companies to use unclear techniques in disclosing the conditions under which credit is granted, suggesting that regulators are more attentive to these phenomena. One can extend this notion to the scope of the intangible: for example, regulators and the public should observe a banking institution that advertises a loan as guaranteeing access to a better lifestyle more carefully.

Given that the debt is increasing and the saving is decreasing in Portuguese households, it is pertinent that there is also education and incentives for saving. As it turned out, financial shocks are worse as fewer savings habits exist in households, even if this shock caused by an unemployment situation (Costa & Farinha, 2012, European Commission, 2010, Frade et al., 2008). Although it is not possible to prevent unforeseen shocks through savings, it is undeniable that having robust savings habits may be relevant to the prevention of situations of over-indebtedness.

Regarding the limitations of the present research, perhaps the greatest is the impossibility of generalization of the results. Due to the sampling method used, none of these results can be extrapolated out of this sample. Another limitation within the scope of the sample is the absence of unemployed in it. As theory stated, unemployment is a catalysing element of over-indebtedness and should have been tested our probabilistic model. For reasons of convenience in sampling, it was not possible to obtain individuals in this situation since the place where most of the obtained answers was exactly in the work place of the respondents. It would have been a benefit to test a model with the unemployed and SPS. Geographical distribution is also one of the limitations of the sampling process. One of the limitations inherent in the methodology used, which is particularly sensitive in this case is the use of the questionnaire to obtain the information of the variables under analysis: the answers to these questionnaires are not always consistent and genuine. Although the structure of the questionnaire was simplified, and it was performed a pre-test to verify the acceptance by the respondents, the literature indicates that it is a limitation of the method.

Finally, a relevant limitation and at the same time opens a future line of research concerns the detailed evaluation of the debts of households and persons. To obtain data of subjects with lower debt, higher debt and in default was an advantage to the research. However, in the last two groups we know nothing about the debts that the persons have and the influence of the variables on these debts. It would be relevant to know these debts more in detail: as we saw, the main debt of the Portuguese households is housing credit. It was interesting to start there. Nevertheless, there are more questions: if in fact SPS has an impact on the behaviours that lead to over-indebtedness, is there any moderating factor in this relationship? Although this study already provides some clues, however, it is important to distinguish in a more rigorous way what are the variables associated with different conditions of indebtedness.

Another line of research to be considered is the extension of the behavioural evaluation of individuals in relation to indebtedness. As it turned out, other behavioural factors have an impact on behaviours that lead to indebtedness. In particular, self-discipline in the act of acquiring goods and services as Gathergood (2012) suggested. It would also be relevant to add SPS to the research of these factors, and understand how the remaining variables interact with SPS. Finally, raises questions about the antithesis of indebtedness. What is PSS role in saving habits? As noted, the Portuguese households save little and this is a problem when financial shocks occur. It would be interesting to see if this behavioural variable has any impact or effect on the households' savings strategies.

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