

Materialism as a predictor variable of low income consumer behavior when entering into installment plan agreements

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- *This paper explores the influence of materialism on consumer indebtedness among low income individuals who live in poor regions of Sao Paulo. A materialism scale was adapted to this context and used to describe the level of materialism among the population surveyed. Results obtained relative to the relationship between materialism and socio-demographic variables are compared to those of previous studies. A logistic regression model was developed in order to characterize individuals who have an installment plan payment booklet — the main source of consumer credit for the population studied — and to differentiate them from those who do not, based on the materialism level, socio-demographic variables and purchasing and consumer habits. The proposed model confirms materialism as a behavioral variable that is useful for forecasting the probability of an individual getting into debt in order to consume. Income had the biggest relative influence on the regression model, followed by materialism and age, controlled by gender.*

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Introduction

Budget is not the only restriction on consumption of essential and non-essential goods by low income families: for this very large segment of the Brazilian population, consumption is further limited by reduced access to affordable quality products and by insufficient credit, coupled with high interest rates (Brusky and Fortuna, 2002; Nichter *et al.*, 2002; Parente, 2003). The desire to consume, however, does

not depend on income (Belk, 1999; Belk *et al.*, 2003); its imbalance, relative to economic capacity, generates an enormous repressed demand among low income consumers. In 1986, for example, Plano Cruzado caused income to be transferred to the lower income segments of the population, which in turn created an episode of national euphoria, with housewives marching in support of the then President Sarney (Averbug, 2005; Steinbruch, 2006), and of a food, clothing and electro-domestic products shortage that lasted several months (Averbug, 2005). A more permanent—also much criticized (Moura, 2005)—business strategy developed over the

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last few decades has been the creation by retailers of a financial instrument called the installment plan payment booklet to directly provide consumer credit. Relative to this, we reproduce below an excerpt from a paper published in a newspaper that is widely-read in the city of Sao Paulo:

[. . .] We give a moral connotation to the act of consumption. And condemnation falls precisely on those who, not having the income, have to submit to punitive interest rates as the only way of having access to consumer goods.

A few years ago, my daughter's nanny wanted to take my daughter to her home on the outskirts. They went by bus. We went in the afternoon to fetch her. We went into a house they had built themselves on top of another construction. There was a living room, a bedroom, and a bathroom. The living room was impeccable, with its new, shiny, and cheap furniture, a simple TV, and a refrigerator. Everything had been acquired from one of these popular stores that sell by offering a seemingly never-ending number of installments.

The young girl had managed to buy them because, since she was in full-time employment and could prove her income, for the first time in her life she had access to credit. What we saw there was not the sinful figure of the spendthrift, but the genuine happiness of someone who, having access to consumer goods, was experiencing the taste of citizenship—even though she was paying an exorbitant rate of interest. [. . .]

In this country [. . .], we worship the market economy, but every form of consumption is condemned; usury is justified, but the victim is condemned. Moralism for moralism's sake; even the centuries-old ethics of the church have been turned on their head. Usury has become a virtue; the inability to defend oneself from usury has become a vice.

(Nassif, 2005, B4, translated by the authors).

In just a few lines the text offers a vivid representation of the daily situation of low income families in some areas of Brazil, surrounding the main urban centers: consumer desire, difficulty when it comes to having access to credit and moralism, with regard to the question of indebtedness. In more critically underdeveloped areas, such as rural areas in NorthEastern States, poverty is much worse and no formal credit is available.

Given that low income consumers place their financial health at stake when entering into high interest rate debts in order to consume, and that their acquisition of certain goods such as furniture and electronics may not be possible via lump sum payments, their relationship with consumption sources may be characterized as being one of a “state of powerlessness that arises from an imbalance in marketplace interactions [. . .],” in an example of what Baker *et al.* (2005, 134) call consumer vulnerability. Consumer associations, organizations, and institutions have challenged this state of affairs by (i) carrying out actions in support of conscientious credit taking, domestic budget planning, and clarification of new accessible forms of credit, such as consigned credit (Vialli, 2005), and (ii) scrutinizing the relationship between more accessible credit for low income consumers, expenditure on superfluous goods and credit defaulting (Balbi, 2005).

Although not an exclusive low income issue, in this paper we chose to examine the influence of materialism—defined as the importance attributed to the possession and acquisition of material goods when it comes to achieving life's objectives or desired states (Richins and Dawson, 1992, 304)—on the use of installment plan payment booklets among low income consumers from the city of Sao Paulo.

Research questions

The previous section presented the background to our investigation. We now turn to

our research questions, which focus on the relationship between materialism and indebtedness in the context of low income consumers. For our purposes, low income individuals are considered as being those living with a monthly family income no greater than four minimum salaries (the equivalent of US\$ 510.00 at the time this research was carried out). According to the Brazilian Institute of Geography and Statistics (IBGE, 2000), 30% of the nearly 10 million Sao Paulo city inhabitants belong to this group.

Previous studies have found a significant effect of materialism on indebtedness. Highly materialistic people are more likely to have larger amounts of debt, as a way of satisfying their desire for possessions (Richins and Rudmin, 1994; Watson, 1998, 2003). These findings, however, cannot be automatically extended to a low income population with an average of approximately 7 years of schooling and an average monthly family income of approximately US\$ 330.00 (IBGE, 2006). In fact, it could be argued that the low income Brazilian is subject to economic restrictions so severe that they render more psychological and attitudinal factors ineffective. From a technical perspective, it could additionally be argued that the limitation in income induces a homogeneity in the observable debt values which, in turn, could cause a lack of variance problem—as it indeed does, for instance, when one applies the “Critério Brasil” [Brazil Criterion] methodology of income estimation to this group (Francisco, 2005). So, what we are seeking to establish is: (i) how materialistic and how indebted our target population is; and—more importantly—(ii) whether the materialism-debt relationship holds true among the low income bracket; if so, we would like to evaluate its importance vis-à-vis other socio-demographic variables included in the model as control.

Relevance

This research focuses on the relationship between materialism and indebtedness in a

population where indebtedness and happiness are important social concerns. Historical analyses have presented diverging theories about the origin of the contemporary patterns in the search for happiness through consumption (Belk, 1985). However, there is a consensus that consumption to achieve happiness has reached a high level and a central importance in industrial and post-industrial life (Belk, 1985; Richins *et al.*, 1992; Webster and Beatty, 1997), as well as increasing cultural acceptance (Burroughs and Rindfleisch, 2002). Advances in the credit granting process will have a direct impact on the lives of numerous Brazilian families. Financial institutions are interested in knowing the demand for credit products so that they can better structure their marketing strategy for the services they offer (Brusky and Fortuna, 2002; Rocha and Mello, 2002; Parente, 2003; Moura, 2005). The interest in studying those with low income is underpinned, on the supply side, by huge market potential, and on the demand side by the possibility of greater social inclusion (Parente, 2003; Yunus, 2003; Moura, 2005). A survey conducted by the Brazilian Institute of Geography and Statistics (IBGE, 2004) showed that 85% of Brazilians spend more than they earn and that 60% of them are in default or lack proper budget control.

The substantive contribution of this research is in (i) describing the level of materialism and indebtedness of our target population, (ii) checking if the relationship between materialism and indebtedness holds true for a low income population, and (iii) accessing the relative importance of variables considered. The methodological contribution is in translating into Portuguese and validating the Richins (2004) materialism scale, within a context that is remarkably different from the one for which it was originally developed.

Literature review

Materialism

Because materialism offers elements that help explain relationships between man, material

objects, and happiness, it has emerged as a concept of interest in many disciplines and has been examined in more than 100 empirical studies published since 1992 (Richins, 2004). These studies were notably conducted in the United States and in European countries (for example: Belk, 1984, 1985; Richins and Dawson, 1992; Richins *et al.*, 1992; Ahuvia and Wong, 1995; Micken, 1995; Burroughs and Rindfleisch, 1997; Watson, 2003; Richins, 2004), often adopting an intercultural approach (Ger and Belk, 1990; Dawson and Bamossy, 1991; Webster and Beatty, 1997; Griffin *et al.*, 2004; Kilbourne *et al.*, 2005). Several studies were carried out with consumers from developing countries such as Turkey and China (Sirgy *et al.*, 1995); India, Romania, Thailand, and Ukraine (Ger and Belk, 1996); and Singapore (Keng *et al.*, 2000; Kasser and Ahuvia, 2002). However, in the literature review carried out for this work, only one Brazilian study that involved materialism as defined by Richins and Dawson (1992) was identified: Evrard and Boff (1998) analyzed the links between materialism and attitudes towards business marketing practices, but their version of the materialism scale proved to be unsuitable and was almost entirely discarded in their analyses.

The term materialism originally referred to the philosophic notion that nothing exists except matter and its movement. The popular use of the term, however, has assigned to it the meaning of a devotion to desires and material needs, a negation of spiritual concerns and a life-style based on material interests (Fournier and Richins, 1991; Richins and Dawson, 1992). Moschis and Churchill (1978, 607), in their paper on the socialization process of adolescents as consumers, defined materialism as “orientations emphasizing possessions and money for personal happiness and social progress”, while Rassuli and Hollander (1986, 10) defined the term as “an interest in getting and spending that results from the perception of possibilities for acquiring large sets of desirable goods and services, and the perception that others are generally also so engaged”. The two definitions most widely

adopted within the context of consumer behavior were suggested by Belk (1984, 1985) and by Richins and Dawson (1992). For Belk (1984, 291), materialism is “the importance a consumer attaches to worldly possessions. At the highest levels of materialism, such possessions assume a central place in a person’s life and are believed to provide the greatest sources of satisfaction and dissatisfaction in life”. For Richins and Dawson (1992, 304), materialism is the importance attributed to the possession and acquisition of material goods when it comes to achieving life’s objectives or desired states. According to Richins (2004), material goods are used by people to characterize and communicate their values.

Consumption indebtedness

Despite its significant growth potential, the market penetration of the Brazilian micro-financing industry is only 2% of its latent demand (Nichter *et al.*, 2002). High interest rates, high transaction costs, and high rates of default (Brusky and Fortuna, 2002) restrict the expansion of supply. In circumventing this bottleneck by offering more accessible credit in terms of duration of contract and document demands (Nichter *et al.*, 2002; Mezerra and Guimarães, 2003), retail stores both stimulate sales and make a financial profit. Their typical transaction instrument is the installment plan payment booklet—a means of payment in which consumers agree to specific transaction conditions with the seller, such as rate of interest, number of installments, and the period, all of which are combined in a set of pages referred to as a payment booklet. Even though the installment plan payment booklet incorporates high rates of interest, its existence as an instrument for granting credit allows thousands of low income families to have access to consumption (Nassif, 2005).

Materialism and the use of credit

Materialistic individuals have a higher appetite for consumption and are driven by the

pleasure associated with the next acquisition (Belk, 1985; Fournier and Richins, 1991; Richins and Dawson, 1992). For them, getting into credit agreements for consumption purposes may bring about, or even make feasible, their consumption goals. According to Watson (1998), behavioral and socio-economic variables are commonly tested in models on indebtedness, but few studies try and understand the relationship between materialism and indebtedness. From this discussion, and in line with Richins and Rudmin (1994), for whom the materialist's heightened appetite for consumption results in a favorable vision of indebtedness, in this study we postulate that a positive association between materialism levels and indebtedness for consumption is present among low income consumers, despite the important budgetary restrictions to which they are subject and despite their limited access to the supply of finance.

Consumer vulnerability

According to the definition of consumer vulnerability proposed by Baker *et al.* (2005, 134), it is possible for all individuals to suffer vulnerability in consumer contexts. It is important to note that consumer vulnerability is a state, not a status. True or actual vulnerability occurs when it is experienced and it can only be understood by listening to and observing the experiences of consumers. Perceived vulnerability occurs when others believe that an individual is vulnerable, but only he or she can agree on its existence. Although some groups of people are more susceptible to experiencing consumer vulnerability (such as ethnic minorities, low income, and illiterate consumers), this does not mean that people within these groups are always vulnerable. It is with true or actual vulnerability that researchers, marketers, or public policy makers should be concerned (Alwitt, 1995; Hill, 2001; Baker *et al.*, 2005). Among low income consumers, external factors such as education, ethnicity and lack of access to goods and services create, or accentuate,

vulnerability (Hill, 2001; Adkins and Ozanne, 2005).

As a contribution to this discussion, in the present study we should like to characterize the level of utilization of installment plan payment booklets in potentially more vulnerable sub-groups of our target population. "To the extent that we can identify classes of people who are likely to experience vulnerability, marketers, and public policy makers are more likely to help level the playing field for whole groups of consumers" (Baker *et al.*, 2005, 137).

Method

Data collection, sample size and composition

To gain time, reduce costs, and still make use of a reliable and complete reference system (Kish, 1965; Bolfarine and Bussab, 2005) a sample plan developed by the SEADE Foundation served as the reference system for this research. The SEADE sample plan was originally designed for a survey called Research into Life Conditions (SEADE, 2005a), carried out between October 2004 and February 2005 in the districts involved in the Culture Factories program, a public initiative for setting up art and culture facilities in poor regions in the city of Sao Paulo. Of the 2641 initially available households, 759 matched our definition of low income. Of these, 450 were chosen to make up the main household group and the other 309 were allocated to a group of substitute households, which would be visited if it proved impossible to survey the main households.

The set of households to be visited and their respective addresses were passed on to a research institute that is familiar with the workings of household research in the city of Sao Paulo. This research institute was hired to organize the procedures for: (i) training field interviewers; (ii) preparing the visit itineraries; (iii) supervising data collection; and (iv) tabulating the completed questionnaires into an electronic database.

In all, 10 field interviewers took part in the data collection process, which was completed in approximately 3 weeks in the month of August, 2005. Surveyors had to visit households and ask for the head of the family; in his or her absence, they could return up to twice more, and if it proved impossible to interview him or her, the spouse could reply to the questionnaire.

The average time taken to fill in the questionnaires was 23 minutes; 244 (54.2%) of respondents presented themselves as the head of the household and 196 (43.6%) as the spouse, with the other 10 questionnaires (2.2%) being filled in with both present. The large number of spouses is justified by interviews being made on weekdays during normal working hours.

Of the 450 households originally listed as "main", only 257 (57.1%) appear in the final sample; 160 substitute households and 33 additionally enrolled households were surveyed. Of the 342 discarded households (193 from the main and 149 from the substitute groups), 114 were not accessible to the interviewer because of safety issues, 96 were discarded because the head and/or spouse only were at home at night, 25 were discarded for other reasons (such as: individuals traveling, aged, sick, or unable to respond), 56 households refused to take part in the research and 51 houses were empty or were not located. Finally, of the 450 interviews completed, 10 questionnaires were improperly filled in and 4 presented incoherent replies. The final sample of this study is, therefore, made up of 436 individuals, representing information relating to approximately 160 000 families and 500 000 inhabitants from the districts studied.

Operationalization of materialism

Currently the two materialism scales most widely used and cited in consumer behavior literature are those of Belk and of Richins. As a good version in Portuguese of neither of them could be identified, to carry out this work they were both used in a pre-test.

Initially, Belk's (1985) materialism scale items, as adapted and reported in the study of Ger and Belk (1996), and the full scale items suggested by Richins (2004) were independently translated by two researchers. Discussions about divergent terms were carried out in order to arrive at the final wording.

Two pre-tests were carried out in the city of Sao Paulo with individuals whose monthly income was not greater than four minimum salaries. In both cases, a 5 point Likert scale was used (ranging from 1 = "I totally disagree" to 5 = "I totally agree") to measure the items, which, when added together, corresponded to the respondents' level of materialism, as proposed by Belk (1985) and by Richins (2004).

In the first pre-test, two researchers collected data using a convenience sample of 30 low income individuals from Sao Paulo, in order to check their understanding of the scale items. In general, the scale items of Richins (2004), worded in a simpler way, were better understood. The items from the scale of Ger and Belk (1996) were worded in a more complicated manner and did not fit the context of the study well. For example, the item "I don't mind giving rides to those who don't have a car" (Ger and Belk, 1996, 65) caused doubt, as few respondents had automobiles.

Items identified as problematic were eliminated from the questionnaire; they were mostly from Ger and Belk's scale; others were reworded. A second pre-test, with 55 low income respondents, was carried out. Considering only the 9 items of Richins' (2004) reduced scale, Cronbach's alpha coefficient totaled 0.75. The other items, when considered, did not improve this set.

Given these results, we adopted Richins (2004) recommendation of the 9 item reduced scale for contexts in which materialism sub-scales of centrality; happiness, and success are not needed. Four adaptations (compare **Appendix 1** and **Table 1**) of the original scale were prepared: (i) item 2 was reworded for better understanding and was placed in the direct order, following considerations by Wong *et al.* (2003), who investigated problems

Table 1. Selected statistics for the materialism scale

Item	Description ^{a,b}	Count	Min.	Max.	Mean	Std. Dev.	Alpha if item deleted ^c
1	I admire people who own expensive homes, cars, and clothes. (S)	436	1	5	2.59	1.53	0.7259
2	I like spending money on many different things. (C)	436	1	5	1.71	1.23	0.7101
3	My life would be better if I owned many of the things I don't have. (H)	436	1	5	3.76	1.47	0.7127
4	Buying things gives me a lot of pleasure. (C)	436	1	5	3.26	1.55	0.7095
5	I'd be much happier if I could afford to buy more things. (H)	436	1	5	4.11	1.26	0.7128
6	I like to own things that impress people. (S)	436	1	5	1.67	1.28	0.7107
7	I like a lot of luxury in my life. (C)	436	1	5	1.79	1.24	0.6949
8	It bothers me that I can't afford to buy all the things I like. (H)	436	1	5	3.18	1.54	0.7052
9	Some of the most important achievements in life include acquiring material possessions. (S)	436	1	5	1.75	1.30	0.7017
	Materialism Score	436	9	45	23.81	7.03	

Dimensions: C, Centrality; H, Happiness; S, Success.

^aThe original items from the Richins (2004) scale can be found in Appendix 1.

^bIn Portuguese, items read: (1) Eu admiro pessoas que possuem casas, carros e roupas caras; (2) Eu gosto de gastar dinheiro com coisas caras; (3) Minha vida seria melhor se eu tivesse muitas coisas que não tenho; (4) Comprar coisas me dá muito prazer; (5) Eu ficaria muito mais feliz se pudesse comprar mais coisas; (6) Eu gosto de possuir coisas que impressionam as pessoas; (7) Eu gosto de muito luxo em minha vida; (8) Me incomoda quando não posso comprar tudo que quero; and (9) Gastar muito dinheiro está entre as coisas mais importantes da vida.

^cCronbach's alpha for the scale as a whole was 0.7330.

in employing the Richins and Dawson (1992) materialism scale in cross-cultural applications, because of its "mixed-worded items"; (ii) items 3 and 5 were reworded for emphasis to generate increased variance; (iii) item 8 was simplified for better understanding; and (iv) also because it was not well understood by those taking part in the pre-test, item 9 was substituted by another item from the same sub-scale of Richins (2004) full scale. Final back translations returned the Portuguese items to English with the adaptations mentioned.

Operationalization of indebtedness and of control variables

The possession of installment plan payment booklets was chosen as a measure of consumption indebtedness. At the time this study

was conducted, the average interest rate on bank overdraft products was 148.3% per year; the average interest rate on personal credit was 69.4% per year; and the average interest rate to finance consumption goods, excluding new automobiles, was 56.1% per year, with a total inflation rate of only 5.7% during 2005 (BACEN—Brazilian Central Bank, 2006; IBGE, 2006). The considerable gap between inflation and interest rates is due to a combination of factors, such as a federal budget deficit, large public debt, low aggregate savings, banking inefficiencies, and a high risk of default by credit takers, added to expensive and lengthy litigation processes (Costa, 2003; Garcia, 2003). The installment plan payment booklets offered by retail stores are relatively cheaper financing alternatives and are the form of credit mostly used by the population with a low income (Brusky and Fortuna, 2002).

Field interviewers questioned respondents directly about their consumption debt. For each installment plan payment booklet identified we asked for the number of installments outstanding, the amount of each one, which goods had been acquired and, most importantly, if the decision to take the credit had been made by the respondent himself or herself. Only installment plans for which the decision to take the credit had been made by the respondent were considered in this study.

The variables, age, gender, education, and income were also collected and included in the analyses, with the following definitions:

- *Age*: the number of completed years of life of the respondent.
- *Gender*: the respondent is either male or female.
- *Education*: amount of education received by the respondent, according to the categories *never studied*, *adult literacy course*, *pre-primary school*, *basic education* (adult education or normal), *high school* (adult education or normal), *college education* (or above).
- *Income*: the sum of gross income (before taxation) coming from work, a pension, government and public social security programs (such as minimum income, school grants, unemployment benefit, etc.) and rent of any type. Measured in R\$.

Analyses and results

Following completion of data collection, the first analytical step was to test the reliability of the materialism scale. Table 1 summarizes its statistics.

Because the materialism scale is of the reflexive type, in other words, one in which the indicators observed are manifestations of the construct (Jarvis *et al.*, 2003), it is to be hoped that its items are correlated among themselves; to test the reliability of the scale we calculated Cronbach's alpha and arrived at a coefficient of 0.7330, which is satisfactory, mainly because it is a scale adapted to a context

that is different from the one for which it was developed (Nunnally, 1978; Churchill, 1979). Examination of the variation caused by the exclusion of each item from the scale revealed that the scale that was complete was the one that provided the largest Cronbach alpha.

Of the 436 respondents, 256 (58.7%) had no installment plan payment booklet whatsoever at the time of the interview; 133 (30.5%) had one installment payment booklet; 39 (8.9%) had two installment payment booklets; 5 (1.2%) had three installment payment booklets and only 3 respondents (0.7%) had four installment payment booklets. The average number of installments outstanding was 6.7 per installment payment booklet, while the average amount of each installment was R\$ 72.51 (approximately US\$ 30.73 at the time). The collected data were in line with the conclusions of Brusky and Fortuna (2002), for whom furniture, electrical household goods, clothes, and footwear are the goods most consumed by the population with a low income by means of installment plans.

With the aim of explaining how materialism and the other variables considered in this study (age, gender, level of education, and income) help to explain buying behavior by means of installment plans, **Table 2** shows the results of the dependency tests of each variable, measured with the characteristic of having or not having an installment plan payment booklet. At the significance levels highlighted in Table 2, there is evidence of a dependency relationship between the variables, age, gender, and materialism, on one side, and the act of having, or not, an installment plan payment booklet.

With the idea of making generalizations and forecasting behavior in the population, the data summarized in Table 2 (disaggregated) were adjusted to a binary logistic regression model, whose qualitative response variable has two possibilities of occurrence: the respondent has or does not have an installment plan payment booklet. These cases were coded with 1 and 0, respectively. **Table 3** summarizes the main information of the final model.

Table 2. Descriptive statistics of the sample and dependency tests with possession of an installment payment booklet

Variable	Total in sample (%)	Installment plan payment booklets		χ^2	Sig.	DF
		Has (%)	Does not have (%)			
Age				14.24	0.003*	3
Between 17 and 25	45 (10.3)	23 (51.1)	22 (48.9)			
Between 26 and 36	121 (27.8)	44 (36.4)	77 (63.6)			
Between 37 and 54	185 (42.4)	90 (48.7)	95 (51.3)			
Over 54	85 (19.5)	23 (27.1)	62 (72.9)			
Gender				6.82	0.009*	1
Male	108 (24.8)	33 (30.6)	75 (69.4)			
Female	328 (75.2)	147 (44.8)	181 (55.2)			
Level of education				7.60	0.269 (ns)	6
Never studied	37 (8.5)	8 (21.6)	29 (78.4)			
Adult literacy/pre-primary	32 (7.3)	14 (43.8)	18 (56.2)			
Basic education—adult educ.	27 (6.2)	13 (48.2)	14 (51.8)			
Basic education—normal	192 (44.0)	78 (40.6)	114 (59.4)			
High school—adult educ.	88 (20.2)	39 (44.3)	49 (55.7)			
High school—normal	58 (13.3)	27 (46.6)	31 (53.4)			
College education and above	2 (0.5)	1 (50.0)	1 (50.0)			
Income ^a				3.10	0.685 (ns)	5
No income	143 (32.9)	54 (37.8)	89 (62.2)			
From R\$ 0.01 to R\$ 150.00	42 (9.7)	15 (35.7)	27 (64.3)			
From R\$ 150.01 to R\$ 300.00	89 (20.5)	37 (41.6)	52 (58.4)			
From R\$ 300.01 to R\$ 450.00	53 (12.2)	22 (41.5)	31 (58.5)			
From R\$ 450.01 to R\$ 600.00	60 (13.9)	29 (48.3)	31 (51.7)			
Over R\$ 600.01	47 (10.8)	22 (46.8)	25 (53.2)			
Materialism ^b				5.06	0.025**	1
25% least materialistic (9-19)	109 (25.0)	32 (29.4)	77 (70.6)			
25% most materialistic (28-45)	109 (25.0)	48 (44.0)	61 (56.0)			

χ^2 , value of the chi-square statistic; Sig., significance; DF, degrees of freedom.

*Significant at the 0.01 level.

**Significant at the 0.05 level; (ns) not significant.

^aIn the income variable we found and discarded 2 missing values.

^bThe materialism variable was divided into quartiles, and only the two extremes were considered for the above mentioned test; this procedure is identical to the one used by Watson (2003).

The regression equation found was the following:

$$\text{logit}(p_i) = -0.6024 - 0.0151 \cdot \text{age}_i - 0.9566 \cdot \text{gender}_i + 0.0011 \cdot \text{income}_i + 0.0330 \cdot \text{materialism}_i$$

Or, expressed in another way,

$$p_i = \frac{1}{1 + e^{-(0.6024 + 0.0151 \cdot \text{age}_i + 0.9566 \cdot \text{gender}_i + 0.0011 \cdot \text{income}_i + 0.0330 \cdot \text{materialism}_i)}}$$

where p_i is the probability of individual i entering into installment plan agreements using installment payment booklets. age_i ,

gender_i , income_i , and materialism_i are values of these variables measured for individual i .

The G statistic that tests if all the coefficients of the regression model are equal to zero was 23.98, significant at the 0.001 level. So there is sufficient evidence that at least one of the regression model coefficients is different from zero. Observing the p -values of the coefficients of the variables, age, gender, income, and

materialism, we can see that there is sufficient evidence that each of them, individually, is different from zero at the 5% level. The

Table 3. Binary logistic regression: possession of installment plan vs. age, gender, income and materialism

Response information	Value	Count*			
Do you have an installment payment booklet	1	179	(Event)		
	0	255			
	Total	434			
Predictor	Coefficient	<i>p</i>	Odds ratio	95% CI lower	95% CI upper
Constant	-0.6024				
Age ^a	-0.0151	0.034	0.9850	0.9714	0.9988
Gender ^b	-0.9566	0.001	0.3800	0.2200	0.6700
Income ^a	0.0011	0.003	1.0011	1.0004	1.0018
Materialism ^a	0.0330	0.023	1.0335	1.0046	1.0634

*Two missing values.

^aAge, income, and materialism came into the model as co-variables.

^bGender came into the model as a factor (2 levels, 0—female; 1—male).

goodness-of-fit tests of Pearson and Hosmer-Lemeshow had *p*-values of 0.432 and 0.975, respectively, indicating that there is no evidence to state that the model does not adjust to the data in an appropriate way. In other words, the tests do not reject the null hypothesis that the model provides a suitable adjustment. Finally, stability of the model was verified among groups which could have been a source of bias due to sample disproportionate composition: when analyzed separately, heads and spouses did not produce diverging results; nor did male and female heads of households.

When standardized coefficients are considered, it can be seen that, relatively speaking, income has a greater impact on the possession of installment plan payment booklets (standardized regression coefficient of 0.35), followed by materialism (standardized regression coefficient of 0.23) and age (standardized regression coefficient of -0.22). According to Moura (2005), among individuals who live on low incomes, those who have a higher income have more access to credit and thus have more opportunities to enter into installment plan agreements than those with a lower income.

Regarding the relationships between materialism and the socio-demographic variables, the correlation between materialism and age was

-0.09 (with significance of 0.051); although this correlation is weak, it is in the same direction as was found by Belk (1985), Richins and Dawson (1992), Micken (1995), Burroughs and Rindfleisch (2002) and Watson (2003). As expected, and in line with past studies (Belk, 1985; Richins and Dawson, 1992; Banerjee and Mckeage, 1994; Burroughs and Rindfleisch, 2002; Watson, 1998, 2003), no association was detected between materialism and gender, or between materialism and education. Neither was any association found between materialism and income in the low income bracket. While this last result may have been caused by reduced income variance, it is in line with previous studies (Richins and Dawson, 1992; Micken, 1995; Burroughs and Rindfleisch, 2002; Watson, 2003).

Concluding remarks

This study was carried out on 450 households, characterized as being home to families on a low income and located in poor districts in Sao Paulo. It allowed us to test the influence of socio-demographic and psychological variables on purchasing and consumption habits, in particular on the possession, or not, of installment plan agreement payment booklets.

The findings confirm that it is not only adverse economic factors that lead people to get into debt (Katona, 1975; Belk, 1999; Brusky and Fortuna, 2002); they give support to the claim that studies on the demand for credit for consumption must, of necessity, consider variables of a psychological nature (Watson, 2003) such as the materialism level of consumers. Even in a population that is subject to strong budget restrictions and difficulty in accessing financial sources, the materialism effect is such that it nearly doubles the probability of possession of a payment booklet.

While this is not an intercultural study, in as far as was possible we chose to adopt translations that faithfully reproduced the original items. However, when confronted with the necessity to opt between maximum comparability and maximum local reliability, we have chosen local reliability: discoveries in the exploratory stage encouraged us to make small adjustments to the original wording of the Richins' (2004) scale (4 items) and to item choice (1 item). Caution, therefore, should be exercised when making a direct comparison between our results and the results obtained by applying the original scale in English. The Portuguese version has proved to have adequate statistical properties and offers evidence of the criterion validity of Richins' scale.

Assuming that the use of installment plan payment booklets is an alternative for coping with the low levels of income that restrict consumption, market or policy responses that have the potential of increasing access to consumption financing alternatives, thus reducing the threat of vulnerability, should be encouraged. For example, some sort of tax compensation could allow retailers to offer low income consumers cheaper and more accessible financing alternatives. Not only would low income consumers benefit from such policies, by reducing their lack of control over consumption contexts, but also the marketplace as a whole would benefit, with a considerable number of marginalized consumers able to join the consumer society. A very successful initiative to generate economic and social development from below granted

the Grameen Bank and its founder Muhammad Yunus the 2006 Nobel Peace Prize; according to the Norwegian Nobel Committee (2006), "lasting peace cannot be achieved unless large population groups find ways in which to break out of poverty," with micro-credit being one such way.

Limitations

Among the limitations of this work, we would highlight that: (i) because the household research was carried out predominantly during working hours, 75.2% of this sample comprised female respondents, who do not work (55.7%); the proportion of women in the sample is considerably higher than in the target population being studied, which was 51.6% (SEADE, 2005b)—it is important to note, however, that we found no significant differences between male and female heads of households, or between heads and spouses, in terms of the proposed regression model; (ii) information about debt with installment plan agreement payment booklets, because it was self-declared, may have been underestimated (Moura, 2005); (iii) because the research used terms that may not form part of their day-to-day vocabulary the difficulty of communicating with the target public is a potential source of response bias; and (iv) the non-use of a scale to control socially desirable responses—SDR, which, according to Mick (1996), may distort the correlations between the study variables.

Future studies

When studying materialism and indebtedness, other variables such as attitude to debt (Davies and Lea, 1995; Watson, 2003), previous experience with credit, the visibility of the types of goods purchased and the influence of reference groups and family members on the decision to contract consumption debt, could help further improve understanding on the relationship between them. A deeper understanding of the mechanisms adopted by low income consumers for coping with the use of financing alternatives would help assess their

actual vulnerability and also better support public policy decisions and retail marketing strategies.

To conclude, we also suggest the following lines of investigation: (i) a test and description of the psychometric properties of the Richins scale in English incorporating our modification suggestions, so that we can have a consolidated basis for intercultural studies in English and Portuguese; (ii) a study of materialism manifestations in different segments of Brazilian society and in various Brazilian geographical regions, in order to allow for a comparison of patterns; (iii) discrimination and characterization of indebtedness as a consequence of excessive consumption and as a strategy for coping with vulnerability; and (iv) a check on how materialism influences default levels in the financial services area.

Acknowledgements

This paper is one of a series of field research analyses carried out within the "Integrated Research Program: Microcredit for Low Income Families in the city of Sao Paulo," supported by financing from GVPesquisa (Getulio Vargas Research) of FGV-EAESP (Getulio Vargas Foundation Sao Paulo School of Business). The authors would like to thank GVPesquisa for funding this research. The authors would also like to thank the Department of Marketing at the University of Otago and Professor Sarah Todd for academic support during the development of this work. Special thanks go to the reviewers of this paper, for their generous contributions. Finally, the authors thank the CAPES Foundation—a Brazilian government agency for scholarship grants—, for the PDEE scholarship granted to Mateus Ponchio.

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Appendix 1

Items in Richins (2004) materialism scale

1	I admire people who own expensive homes, cars, and clothes. (S)
2	I try to keep my life simple, as far as possessions are concerned. (C) (R) ⁺
3	My life would be better if I owned certain things I don't have. (H) ⁺⁺
4	Buying things gives me a lot of pleasure. (C)
5	I'd be happier if I could afford to buy more things. (H) ⁺⁺
6	I like to own things that impress people. (S)
7	I like a lot of luxury in my life. (C)
8	It sometimes bothers me quite a bit that I can't afford to buy all the things I'd like. (H) ⁺⁺⁺
9	The things I own, say a lot about how well I'm doing in life. (S) ⁺⁺⁺⁺

Dimensions: C, Centrality; H, Happiness; S, Success; and R, Reverse scaled item.

Based on the conclusions obtained from the pre-test of the scale, the following adjustments were made:

⁺Item 2 was placed in the direct order and the wording was changed.

⁺⁺Items 3 and 5 were reworded to "My life would be better if I owned *many* of the things I don't have" and "I'd be *much* happier if I could afford to buy more things," respectively, to increase variance.

⁺⁺⁺Item 8 was reworded to "It bothers me that I can't afford to buy all the things I like" for simplicity and clarity in Portuguese formulation.

⁺⁺⁺⁺Item 9 was exchanged for the following item from Richins (2004) complete (15-item) scale:

9. Some of the most important achievements in life include acquiring material possessions. (S).