

Conspicuous Consumption, Status-Seeking, Inequality, and Credit Constraint

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Abstract

We address the effect of inequality on household conspicuous consumption by emphasizing how access to credit operates in this relationship. We document that inequality has a negative effect on conspicuous consumption only for credit-constrained households. Our findings support the hypothesis of competitive status-seeking behavior and stand in line with the evidence that relative comparisons deepen household indebtedness.

Key-Words: Conspicuous Consumption; Inequality; Credit Constraint.

JEL Classification: E21.

Resumo

Neste artigo, avaliamos o efeito da desigualdade no consumo conspícuo das famílias, enfatizando como o acesso ao crédito opera nessa relação. Documentamos que a desigualdade tem um efeito negativo no consumo conspícuo apenas para famílias com restrições de crédito. Estes resultados sustentam a hipótese do comportamento competitivo de busca por status e estão em linha com as evidências de que comparações relativas aprofundam o endividamento das famílias.

Palavras-Chaves: Consumo Conspícuo; Desigualdade; Restrição de Crédito.

Classificação JEL: E21.

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1 Introduction

The economic literature has long recognized that the *visibility* of consumption has a meaningful role in consumers' behavior. Veblen (1899) first introduced the term *conspicuous consumption* to describe the hypothesis that the expenditure on certain goods is motivated by individuals' desire to be distinguishable in society. The underlying idea is that once essential needs have been satisfied, other aspects become relevant in individual's decision-making, such as its relative condition in social interactions (Weiss and Fershtman, 1998; Rauscher, 1997; Corneo and Jeanne, 1997). More specifically, conspicuous consumption (i.e., the expenditure on positional and visible goods)¹ corresponds to the primary way to exhibit wealth and achieve social status (Bagwell and Bernheim, 1996), given that it intends to reflect relative attainment toward well-being.

Therefore, assuming that individuals may derive utility from conspicuous consumption, it can be argued that their incentive to consume visible goods depends on the dispersion of income within a reference group (Roychowdhury, 2016). The literature has supported both a positive and a negative relationship between inequality and conspicuous consumption. On the one hand, a greater inequality might increase overall conspicuous consumption, given that both the poor and the rich may spend more on visible goods in a *keeping up with richer* behavior (Frank, 2007; Christen and Morgan, 2005). On the other hand, a fall in inequality leads to increased competitive pressures, creating incentives for conspicuous consumption as it becomes easier to surpass the respective peers (Hopkins and Kornienko, 2009).

There is scarce evidence, however, on the role of credit constraint on this relationship. Although households may sustain conspicuous consumption by allocating a larger share of their income (Duesenberry, 1949), they might also achieve it by financing (Berlemann and Salland, 2016; Georgarakos et al., 2014), and thereby, credit conditions matter for this discussion. Notice that, as inequality increases, it reduces competitive pressure but, at the same time, it increases the marginal utility of visible goods on a status-seeking behavior. If credit constraint is not an issue, households have incentives to support conspicuous consumption through indebtedness. Otherwise stated, the effect of inequality on conspicuous consumption depends on the household's credit conditions.

In this paper, we assume that the expenditure on visible goods is driven by households' relative status considerations (de Giorgi et al., 2020; Kaus, 2013; Bowles and Park, 2005), such that conspicuous consumption is regarded as a status-seeking contest. This allows for strategic competition between distinct income groups (Akerlof, 1997), in which concerns about status are described by the ordinal rank determined through social interactions (Frank, 1985; Robson, 1992).

Our interest lies in the effect of inequality on household conspicuous consumption. However, we address this question by emphasizing the role that credit plays on visible expenditure and in their response to both income and visible inequality.² Based on a theoretical benchmark proposed by Hwang and Lee (2017), we proceed empirically by considering a large Brazilian household-level dataset on expenditures and find that inequality has a negative effect on conspicuous consumption only for credit-constrained households.³ These findings support the

¹Positional goods are those for which social pressure influences their choice. Visible goods are those that are easily observable in social interactions (Hirsch, 1978).

²Following Roychowdhury (2016), we define visible inequality as the level of economic inequality that is socially observable.

³In particular, this is a relevant discussion for Brazil, given the high degree of household indebtedness. According to the Brazil's Central Bank, in 2018, the average household indebtedness was around 44% of the accumulate income over the last twelve months.

hypothesis of competitive status-seeking behavior.

The paper contributes to the literature to the extent that credit constraint matters to visible expenditure decisions. As stated, although the effect of inequality on conspicuous consumption has been examined in several contexts (Moav and Neeman, 2012; Hopkins and Kornienko, 2009), less attention has been paid to how the access to credit operates in this relationship. We provide empirical evidence in line with Berlemann and Salland (2016) and Georgarakos et al. (2014) who reported that relative income perceptions deepen household indebtedness, and with Christen and Morgan (2005) who found that household indebtedness responds to income inequality more than to interest rates.

The remainder of this paper is organized as follows. Section 2 describes the model proposed by Hwang and Lee (2017), which allows for a straightforward testable implication. Section 3 presents the household-level data and details our measure of conspicuous consumption. Section 4 provides the empirical results and the Section 5 discusses the economic implications. Finally, Section 6 presents some concluding remarks.

2 Theoretical Model

As a theoretical framework, we consider the model proposed by Hwang and Lee (2017). The model states that, if status-seeking behavior drives conspicuous consumption, the effect of inequality on visible expenditure depends on the marginal utility of conspicuous consumption, which consists of the utility achieved from social status and on the marginal probability of acquiring it.

2.1 Consumption, Status Seeking, and Social Interactions

Consider a society consisting of n consumer units (or households), indexed by i . They consume a visible good (A) and a composite good (B), such that the latter is substitutable by the former. Suppose that each household has a different level of income, and therefore, a different budget is available for expenditure on the visible good. Denote by m_i the maximum budget for visible good, and arrange the indexing of households so that $m_1 > m_2 > \dots > m_n$. The maximum budget m_i is exogenously given.

An important feature of the model is that conspicuous consumption is motivated by social interactions (Hwang and Lee, 2017). Suppose that each household belongs to a reference group, which they compare their consumption levels. Let G_i be the reference group for household i , and define the set of all reference groups as

$$\mathcal{G} := \{G_1, G_2, \dots, G_n\}.$$

Social interaction motivates conspicuous consumption since households compete for social status by spending on visible goods. Specifically, household i acquires social status according to probability π_i , which depends on the level of relative consumption of the visible good within the reference group G_i .

Hwang and Lee (2017) introduced the variable γ to parameterize the intensity of the utility derived from obtaining social status.

For household i , let x_i^A and x_i^B be the consumption of A and B , respectively. Let p be the price of good A , and set the price of good B normalized at 1. The household decision problem

is given by

$$\max_{x_i^A, x_i^B} \phi(x_i^A) + x_i^B + \gamma\pi_i \quad (1)$$

subject to

$$px_i^A + x_i^B = m_i$$

where

$$\pi_i := \frac{f(x_i^A)}{\sum_{j \in G_i} f(x_j^A)}. \quad (2)$$

Suppose that ϕ is positive, increasing, and concave ($\phi > 0$, $\phi' > 0$, and $\phi'' \leq 0$), and f is a positive and increasing function ($f > 0$ and $f' > 0$). The functional form f measures the elasticity of the status obtaining probability in response to changes in the relative conspicuous consumption level.

2.2 Conspicuous Consumption and Inequality

For simplicity, consider a basic model representation with two income classes. Suppose that households 1 and 2 are representative of the rich and the poor, respectively, and both belong to a single reference group, $G = \{1, 2\}$. The household 1 maximizes

$$\max_{x_1^A \in [0, \frac{m_1}{p}]} \phi(x_1^A) + \gamma \frac{f(x_1^A)}{f(x_1^A) + f(x_2^A)} - px_1^A + m_1. \quad (3)$$

The equilibrium level of the visible good is found by considering the best response of each household, given the other household's behavior. The Kuhn-Tucker first-order condition for household 1 is given by

$$\phi'(x_1^A) + \gamma\pi_1(x_1^A, x_2^A) \left(1 - \pi_1(x_1^A, x_2^A)\right) \frac{f'(x_1^A)}{f(x_1^A)} - p \begin{cases} \leq 0 & \text{for } x_1^A < \frac{m_1}{p} \\ \geq 0 & \text{for } x_1^A > 0 \end{cases}. \quad (4)$$

We assume that f is concave ($f'' \leq 0$), and hence, the second order condition is satisfied, which ensure the existence of a pure strategy Nash equilibrium (Hwang and Lee, 2017).

Notice that two terms in (4) correspond to the marginal utility of the visible good. The first is the marginal utility of consuming it ordinarily, $\phi'(x_1^A)$, and the second term is the marginal utility of consuming it conspicuously. For convenience, define

$$\beta(x_1^A, x_2^A) := \pi_1(x_1^A, x_2^A) \left(1 - \pi_1(x_1^A, x_2^A)\right) \frac{f'(x_1^A)}{f(x_1^A)}.$$

Therefore, the marginal utility of conspicuous consumption is the utility achieved from social status (γ) times the marginal probability of acquiring it (β), and the net marginal cost of consuming the visible good is $p - \phi'(x_1^A)$.

Assume initially that household 2 does not spend their entire income on the visible good, that is, $p - \phi'(m_2/p) > 0$. Let for a symmetric interior equilibrium, in which both households choose identical consumption levels. In what follows, for simplicity, let $x_i := x_i^A$ for $i = 1, 2$.

From (4), at $x^* = x_1^* = x_2^*$,

$$\gamma\beta(x^*, x^*) = \gamma \frac{1}{4} \frac{f'(x^*)}{f(x^*)} = p - \phi'(x^*) \quad (5)$$

holds.

Suppose that the utility from social status, γ , increases. Then, the marginal utility of conspicuous consumption, $\gamma\beta$, also increases. At a given higher value of γ , household 2 allocate all their budget on the visible good, while household 1 increases their expenditure on it. Moreover, if the γ is sufficiently high, both households may end up allocating their entire budgets on the visible good. This allows for the characterization of conspicuous consumption.

Proposition 1 (Conspicuous Consumption). *There exist $\underline{\gamma}$ and $\bar{\gamma}$ such that:*

$$\begin{aligned} x^* = x_1^* = x_2^* &< \frac{m_2}{p} && \text{for } \gamma < \underline{\gamma} && (i) \\ 0 < x_1^* < \frac{m_1}{p}, \quad x_2^* &= \frac{m_2}{p} && \text{for } \underline{\gamma} < \gamma < \bar{\gamma} && (ii) \\ x_1 &= \frac{m_1}{p}, \quad x_2 = \frac{m_2}{p} && \text{for } \bar{\gamma} < \gamma && (iii) \end{aligned}$$

Proof. See [Hwang and Lee \(2017\)](#). □

This proposition stands for the existence of conspicuous consumption. A competitive status-seeking behavior implies that the utility attained from social status motivates the expenditure on visible good up to the maximum budget.

Now, we address the effect of inequality on conspicuous consumption. Note that, as inequality increases, rich households might spend more on the visible good, while the poor households might spend less. The change in the overall level of conspicuous consumption depends on the relative adjustments of both classes. However, if status-seeking is the only reason for expenditure on the visible good, then the rich households do not need to increase their expenditure on the visible good after the poor have already allocated their entire income to it.

Let τ be the degree of inequality, and suppose that

$$\frac{dm_1}{d\tau} > 0 \quad \text{and} \quad \frac{dm_2}{d\tau} < 0$$

Proposition 2 (Inequality). *For some $\underline{\tau}$ and $\bar{\tau}$, we have the following effect of inequality*

$$\begin{aligned} \frac{d}{d\tau} x_1^*(\tau) &\leq 0 && \text{and} && \frac{d}{d\tau} x_2^*(\tau) < 0 && (i) \\ \frac{d}{d\tau} x_1^*(\tau) &> \frac{d}{d\tau} x_2^*(\tau) && \text{for } \tau \in [\underline{\tau}, \bar{\tau}] && (ii) \end{aligned}$$

Proof. See [Hwang and Lee \(2017\)](#). □

Proposition 2 demonstrates that as inequality increases, the expenditure on the visible good of both households decreases, which implies that the overall level of conspicuous consumption

decreases accordingly.⁴ This occurs because, as inequality rises, the poor reduce their expenditure on the visible good, and the marginal acquiring probability of social status for the rich also decreases (since $\partial\beta/\partial x_2 > 0$). Therefore, the required expenditure for sustaining social status is lower, and they may reduce their conspicuous consumption as well.

3 Data Description

The empirical analysis relies on data from the Consumer Expenditure Survey (POF), conducted by the Brazilian Institute of Geography and Statistics (IBGE). The POF is a nationwide cross-sectional sampling survey that provides a comprehensive household-level dataset on income, expenditure, and demographics. Household disposable income is given by the after-tax monetary income of all its members (i.e., labor earnings, transfers, capital income), plus non-monetary income, and does not include capital gains. Household consumption expenditure comprises the current spending on goods, services, and housing.⁵ Following Meyer and Sullivan (2012), we do not consider expenditures that correspond to investments in assets or to decreases in liabilities.

3.1 Conspicuous Consumption

Conspicuous consumption is understood as the allocation of monetary or non-monetary resources in acquisitions of goods to exhibit a relatively higher social status (Veblen, 1899). Goods that are particularly suited to this objective should *i*) be readily observable, *ii*) give the impression that individuals who consume more of them are, on average, better off than those who consume less, and *iii*) be portable across a variety of interactions (Roychowdhury, 2016; Friehe and Mechtel, 2014; Kaus, 2013).

Identifying what correspond to the household spending on visible consumption is itself an empirical task (Hicks and Hicks, 2014). For the United States, Charles et al. (2009) and Heffetz (2011) conducted specific surveys for this purpose, and classified the expenditures on clothing, jewelry, personal care, and vehicles as highly conspicuous relative to other goods.⁶ This classification has been largely used as a benchmark in the empirical literature (Hwang and Lee, 2017; Roychowdhury, 2016; Friehe and Mechtel, 2014).

In particular, Heffetz (2011) constructed a survey-based empirical measure of visibility, and arranged thirty-one expenditure categories from CEX survey according to it. Hence, we consider his ranking as a guideline to identify the expenditure categories from POF into visible and non-visible consumption. Specifically, we set as visible consumption the spending on clothing, jewelry, personal care, cellphone, hobby and leisure, and vehicles.

Clothing and jewelry expenditures are distinctly conspicuous and occupy the third and fifth positions in the referred visibility index, respectively. Vehicles are also strongly visible goods and stand in the second position. Hobby and leisure includes expenditures on toys, games, sports equipment, camping, and musical instruments, and Heffetz (2011) define a similar category which occupies the sixth position in the ranking. Expenditures on personal care are also clearly conspicuous (i.e., cosmetics and beauty products, hairdressers, and barbershops), standing in the ranking's ninth position. Cellphone is the only category above the tenth position

⁴It also shows that the spending of poor households decreases faster in response to an increase in inequality.

⁵Housing services include the rent paid for tenants and the imputed rent for homeowners.

⁶To the best of our knowledge, there is no similar survey for Brazil.

in that visibility index which we consider as visible consumption since it includes modern smartphones, apps, and accessories.

Among the other expenditure categories that [Heffetz \(2011\)](#) identifies as highly visible (i.e., below the tenth position in their ranking) are cigarretes (1^o), furniture (4^o), food away from home (7^o), alcoholic beverages for home use (8^o) and alcohol at restaurants and bars (10^o). However, we do not consider these expenditures in our baseline measure of visible consumption.

Although the survey has data regarding spending on cigarretes, cigars, tobacco, and narcotics, as well as on alcoholic beverages, we argue that such expenditures might not coincide with an increasing in household well being, and therefore, a higher consumption of such goods may not indicate a higher social status. On the other hand, the expenditure on furniture and appliances indeed improve life standard, but it does not correspond to a readily observable consumption to indicate a higher social status. Finally, consumption of food away from home is rather ambiguous, since it includes restaurants, fast foods, bakeries, and cafes. Nevertheless, frequenting restaurants might indicate social status, but it is a common practice in Brazil for employers to offer food vouchers as part of employees' compensation. Hence, it is not observable whether such an expenditure on food away from home is due to conspicuous consumption or daily routine.

3.2 Financeable Goods

We are particularly interested in consumption conspicuous that can be achieved through financing services. The access to credit is important for explaining consumer behavior in low-income countries, and the expenditure on visible goods is more likely to be impacted by liquidity constraints. Therefore, we seek to employ in our baseline measure of visible consumption those goods that have also the characteristic of being usually financed. More specifically, we consider the most visible goods that can be paid in installments, through credit cards, loans, or financing. There is an increasing number of firms providing their own financing services, for instance, and the *buying on credit* has become an important mechanism for the acquisition of consumption goods ([Christen and Morgan, 2005](#)).

3.3 Reference Group

We assume that conspicuous consumption is motivated by social interactions within a reference group, in which households compare their consumption levels with each other. [Akerlof \(1997\)](#) argued that such social interactions usually occur among households living nearby (e.g., in the same city), where relative comparisons directly affect decision-making. However, the survey's geographical stratification is according to the State and does not identify the city or municipality where the household resides, except when it is the State's capital. Therefore, we assume that the reference group for household i (G_i) comprises all the other households in their State of residence.

3.4 Sample Selection

The survey's dataset comprises a sample of 58,030 observations at the household level. For the empirical analysis, however, we impose a set of restrictions. First, we do not consider observations from multiple consumption units (e.g., more than one family living at the same house). Second, we limit the sample to households with the head aged between 20 and 65

years old. Third, we exclude households without information on the head’s schooling and also those with non-positive expenditure on food. Fourth, we trim the top and bottom 0.25% of observations for disposable income distribution. Finally, we exclude households with non-positive visible consumption. The selected sample comprises 39,831 observations.

Table 1: Descriptive Statistics

	Mean	Median	Std. Dev.	Min	Max
Consumption	3,215.74	2,318.33	3,048.08	139.30	45,560.00
Visible Expenditure	702.71	357.60	1,177.05	0.85	23,697.07
Non-Visible Expenditure	2,513.03	1,863.54	2,309.14	56.18	38,338.14
Disposable Income	4,182.49	2,930.34	4,224.79	198.45	41,274.28
State-Level Income Inequality					
Variance of Log	0.5955	0.5987	0.0847	0.4428	0.8982
Gini Coefficient	0.4245	0.4327	0.0282	0.3606	0.4734
State-Level Visible Inequality					
Variance of Log	1.4765	1.4356	0.1511	1.1593	2.1429
Gini Coefficient	0.5891	0.5881	0.0244	0.5284	0.6723

Note: All statistics are computed using sample weights. The monetary values are expressed in Brazilian Real (BRL), at the prices of January 15, 2018.

4 Empirical Results

In this section, we empirically examine the hypothesis that inequality reduces household conspicuous consumption. At first, we address the effect of income inequality and then turn to the effect of visible inequality, defined as the inequality on visible consumption. Nevertheless, we are interested in how access to credit operates in this relationship.

4.1 Income Inequality and Conspicuous Consumption

We begin by examining how income inequality affects conspicuous consumption. In order to proceed empirically, we consider the following baseline specification

$$\ln c'_{is} = \alpha_0 + \alpha_1 \lambda_s + \alpha_2 \ln \bar{y}_{is} + \mathbf{x}'_{is} \theta + \delta_1 d_i^c + \delta_2 \lambda_s d_i^c + \varepsilon_{is} \quad (6)$$

where $\ln c'_{is}$ is the household spending on visible consumption, λ_s denotes the reference group income inequality faced by the household, $\ln \bar{y}_{is}$ stands for household’s permanent income, and \mathbf{x}_{is} is a vector of observable demographic characteristics, including household size, the age of the head (and a quadratic term), the gender and the schooling of the head, the number of children, and a dummy variable that is equal to 1 if the household resides in an urban area. The index i refers to households, and the index s to the reference group. The error term reflects other unobservable household’s characteristics, and is given by

$$\varepsilon_{is} = \mu_s + \varsigma_{is} \quad (7)$$

where μ_s and ς_{is} are group- and household-specific components of the error, respectively.

The term d_i^c corresponds to a dummy variable that indicates whether the household has access to credit. More specifically, we consider information regarding loan payments and set a dummy that equals one if the household had had any expenses of this sort (i.e., installments, insurances, and interest). We argue that households with such expenditures are not credit constrained, and therefore, are more likely to acquire visible goods through financing. It is worth mentioning that 23 percent of the households in our sample are not credit constrained.

Since permanent income is not observed, we use household consumption expenditure as a proxy for it. However, an identification issue arise from estimating (6) given that consumption expenditure is endogenous. Notice that conspicuous consumption integrates consumption expenditure, and therefore, any unobserved idiosyncratic shock that impacts the former will also impact the latter (Roychowdhury, 2016). To handle this problem, we use a vector of instruments that includes the household current disposable income and a dummy variable that is equal to 1 if the household has any source of capital income.

Table 2 reports the estimates of empirical model (6). Our preferred specification is reported in column (1), where the primary explanatory variable is income inequality λ_s , as measured by the variance of logarithm of disposable income. For robustness, though, we also estimate it by measuring income inequality with the Gini coefficient, g_s , and further, consider instead the share of visible consumption as the dependent variable. All the models are estimated by the two-step GMM procedure, clustering standard errors at the state level. According to the overidentification tests, all the specification performs appropriately, such that we do not reject the joint null hypothesis that instruments are uncorrelated with the error.

Notice that the results are robust to using distinct dependent variables. The evidence suggests that greater income inequality decreases the average conspicuous consumption, particularly in those credit-constrained households. However, access to credit is statistical significant and indicates a positive effect on conspicuous consumption, not only on the level of visible consumption, but also on its response to income inequality. Therefore, the effect of inequality on conspicuous consumption differs according the the household's credit conditions.

For instance, the estimates in column (1) indicate that one log-point increase in income inequality, as measured by the variance of logarithm, reduces the conspicuous expenditure of credit-constrained households by about 0.50%. However, for households with access to credit, the effect of income inequality is rather attenuated, turning to positive though close to 0.03% in response to the same shock. A similar result arises when income inequality is measured by the Gini coefficient: one-standard-deviation increase in income inequality decreases conspicuous consumption of credit-constrained households by about 3.45%, while non-credit-constrained households increases around 1.11% their conspicuous expenditures in response to the same one-standard-deviation increase in Gini coefficient.

Regarding access to credit, notice that its effect is positive on conspicuous consumption. Given the range of the state-level income inequality measured by the variance of logarithm, we compute that non-credit-constrained households expend between 2.9 and 26.8 percent more on visible goods: on average, the access to credit increases conspicuous consumption by about 10.9%. Similarly, according to the state-level income inequality as measured by the Gini coefficient, the effect of access to credit ranges from 0.6 to 18.8 percent on conspicuous consumption.

These findings corroborate with Proposition 2, which states that as income inequality increases, conspicuous consumption decreases since the poor reduce their expenditure on visible goods, and the rich are not required to have a higher expenditure to sustain their social status. Nevertheless, the positive effect of access to credit is meaningful. We argue that while inequal-

Table 2: Impact of Income Inequality on Conspicuous Consumption

	Log of Visible		Share of Visible	
	(1)	(2)	(3)	(4)
Constant	-2.7103*** (.1022)	-2.4849*** (.1303)	0.0544*** (.0165)	0.0755*** (.0213)
λ_s	-0.4958*** (.0645)		-0.0448*** (.0096)	
g_s		-1.2240*** (.1888)		-0.1126*** (.0297)
$\ln \bar{y}_{is}$	1.1958*** (.0106)	1.1960*** (.0108)	0.0340*** (.0017)	0.0341*** (.0017)
d_i^c	-0.2035*** (.0617)	-0.5775*** (.1359)	-0.0174 (.0106)	-0.0618*** (.0237)
$\lambda_s \times d_i^c$	0.5248*** (.1037)		0.0471*** (.0107)	
$g_s \times d_i^c$		1.6184*** (.3212)		0.1710*** (.0558)
J-Test	0.4956 [.4814]	0.5635 [.4528]	0.1965 [.6575]	0.2227 [.6369]
λ_s^{ols}	-0.3918*** (.0551)		-0.0162* (.0090)	
g_s^{ols}		-0.6715*** (.1624)		0.0206 (.0266)

Note: Two-step generalized method of moments estimation procedure. The vector of instruments include the household current disposable income and a dummy variable that is equal to 1 if the household has any source of capital income. All estimations include the following control variables: household size, age of the head (and a quadratic term), gender and schooling of the head, number of children, a dummy for urban residence. ***, **, and * correspond to level of significance of 1%, 5%, and 10%, respectively.

ity reduces competitive pressure for conspicuous consumption, it may create opportunities to reach higher relative social status. In this case, the access to credit allows the household to sustain the expenditure on visible consumption in a status-seeking behavior.⁷ In summary, access to credit works as a mechanism to compensates the overall impact of income inequality on conspicuous consumption.

Moreover, at the bottom of Table 2, we report the respective estimates from ordinary least squares of the effect of income inequality on conspicuous consumption for each specification. Notice that the results, are distinct from the GMM estimates, which suggests that the endogeneity problem is somewhat severe.

Following [Hwang and Lee \(2017\)](#), we check the previous findings by estimating the model (6) for consumption categories other than visible goods. Specifically, we consider the logarithm of non-visible consumption (i.e., consumption expenditure minus visible goods) as the dependent variable. Table 3 summarizes these results, which are likewise robust to using the share of visible consumption as the dependent variable, as well as to setting inequality as measured by

⁷For instance, [Christen and Morgan \(2005\)](#) found evidences that when income inequality increases, low-income households increase debt to keep up their relative consumption.

the Gini coefficient. Moreover, the overidentification test does not reject the null hypothesis for either specification, implying that the instruments are valid.

The effect of income inequality on non-conspicuous consumption is positive but modest, though statistically significant: it indicates that credit-constrained households increase the expenditures on non-visible goods by about 0.05% in response to one log-point increase in income inequality, as measured by the variance of logarithm. However, the coefficient associated with the interaction term between inequality and access to credit is negative, and offsets most of the effect of income inequality for non-credit-constrained households. The access to credit, though, has a not statistically significant effect on non-conspicuous consumption, at least in our baseline specification.

Table 3: Impact of Income Inequality on Non-Conspicuous Consumption

	Log of Non-Visible		Share of Non-Visible	
	(1)	(2)	(3)	(4)
Constant	-0.0093 (.0250)	-0.0398 (.0320)	0.9455*** (.0165)	0.9245*** (.0210)
λ_s	0.0555*** (.0144)		0.0448*** (.0096)	
g_s		0.1480*** (.0447)		0.1126*** (.0292)
$\ln \bar{y}_{is}$	0.9490*** (.0026)	0.9491*** (.0027)	-0.0340*** (.0017)	-0.0340*** (.0017)
d_i^c	0.0192 (.0159)	0.0767** (.0360)	0.0174 (.0106)	0.0618*** (.0237)
$\lambda_s \times d_i^c$	-0.0502* (.0263)		-0.0471*** (.0177)	
$g_s \times d_i^c$		-0.2062** (.0844)		-0.1710*** (.0558)
J-Test	0.2409 [.6235]	0.2653 [.6065]	0.1965 [.6575]	0.2227 [.6370]

Note: Two-step generalized method of moments estimation procedure. The vector of instruments include the household current disposable income and a dummy variable that is equal to 1 if the household has any source of capital income. All estimations include the following control variables: household size, age of the head (and a quadratic term), gender and schooling of the head, number of children, a dummy for urban residence. ***, **, and * correspond to level of significance of 1%, 5%, and 10%, respectively.

Therefore, holding expenditure constant, as greater inequality decreases conspicuous consumption, the households allocate more resources on aggregate non-visible expenditure. However, access to credit plays an important role on such a result. For credit-constrained households, income inequality has a negative and significant effect on average conspicuous consumption and induces a minor increase in non-visible expenditures. In contrast, income inequality has a somewhat attenuated effect on both conspicuous and non-conspicuous consumption for non-credit-constrained households.

4.2 Visible Inequality and Conspicuous Consumption

Assuming that households achieve utility from conspicuous consumption, it can be argued that a more observable inequality measure may motivate more the expenditure on visible goods (Roychowdhury, 2016). In this section, we define *visible inequality* as the inequality measured on the household visible consumption, and assess its effect on conspicuous consumption. Empirically, we consider a similar specification as in (6), but with the visible inequality measure, λ'_s , as the main independent variable. Specifically,

$$\ln c'_{is} = \phi_0 + \phi_1 \lambda'_s + \phi_2 \ln \bar{y}_{is} + \mathbf{x}'_{is} \psi + \gamma_1 d_i^c + \gamma_2 d_i^c \lambda'_s + \epsilon_{is} \quad (8)$$

where the remainder variables are defined as before. Moreover, for robustness, we set both the variance of logarithm and the Gini coefficient as measures of inequality, and consider also the share of visible consumption as the dependent variable.

However, an additional identification issue emerges in this case. Besides the endogeneity of consumption expenditure (i.e., the *proxy* for permanent income), the visible inequality may undergo the same problem. There may be unobservable features that are specific to the reference group and common to all its members. Therefore, for model identification, we use as instrument for visible inequality the measure of consumption inequality. It seems likely that consumption expenditure is a relevant instrument for conspicuous expenditure (e.g., the correlation between log consumption and log visible expenditures is .7530). Moreover, the consumption expenditure remains as a *proxy* for permanent income, and is instrumented by the household current disposable income and a dummy variable that is equal one if the household has any source of capital income. As before, the models are estimated by the two-step GMM procedure, clustering standard errors at the state level.

Table 4 reports these results. Again, according to the overidentification test, all the specification performs appropriately, such that we do not reject the joint null hypothesis that instruments are uncorrelated with the error term. The results are robust to using distinct dependent variables, and suggest that visible inequality has a statistical significant and negative impact on conspicuous consumption. By measuring inequality by the variance of logarithm, the estimated effect of visible inequality is similar to that estimated for income inequality: an increase of one log-point in visible inequality reduces by around 0.41% the conspicuous consumption for credit-constrained households.

However, the importance of access to credit is attenuated, and its statistical significance depends on the model specification. For our baseline empirical results, reported in column (1) of Table 4, access to credit appears to compensate only part of the effect of visible inequality. In contrast to the previous section findings, even for non-credit-constrained households, an increase of one log-point in visible inequality reduces the conspicuous consumption by about 0.26%, on average. When measuring inequality by Gini coefficient, the results indicate that one-standard-deviation increase in visible inequality decreases conspicuous consumption by about 8.0% for those credit-constrained households. The effect of access to credit in particular is not statistically significant.

Table 4: Impact of Visible Inequality on Conspicuous Consumption

	Log of Visible		Share of Visible	
	(1)	(2)	(3)	(4)
Constant	-2.4134*** (.2397)	-1.2101 (.7493)	0.1404*** (.0384)	0.2910** (.1159)
λ'_s	-0.4135*** (.1344)		-0.0738*** (.0215)	
g'_s		-3.2924** (1.2905)		-0.4738** (.1998)
$\ln \bar{y}_{is}$	1.1980*** (.0111)	1.2195*** (.0106)	0.0333*** (.0018)	0.0366*** (.17)
d_i^c	-0.2778 (.2110)	-0.6887 (.7814)	-0.1007*** (.0344)	-0.1822 (.1228)
$\lambda_s \times d_i^c$	0.2596* (.1433)		0.0754*** (.0233)	
$g_s \times d_i^c$		1.3388 (1.324)		0.3256 (.2082)
J-Test	0.6718 [.4124]	1.1112 [.2918]	0.2691 [.6039]	0.4735 [.4914]
λ_s^{ols}	-0.3917*** (.0296)		-0.0154*** (.0048)	
g_s^{ols}		-2.4130*** (.1717)		-0.2094*** (.0281)

Note: Two-step generalized method of moments estimation procedure. The vector of instruments include the household current disposable income and a dummy variable that is equal to 1 if the household has any source of capital income. All estimations include the following control variables: household size, age of the head (and a quadratic term), gender and schooling of the head, number of children, a dummy for urban residence. ***, **, and * correspond to level of significance of 1%, 5%, and 10%, respectively.

4.3 Robustness Checks

It can be argued that a large reference group as the State of residence may not actually motivate relative comparisons, given that social interactions are more likely to occur among households living nearby (Akerlof, 1997). Hence, as an additional robustness exercise, we restrict further the sample to households living in each State's capital cities and metropolitan areas. This reduces our sample to 14,430 observations, but the reference group for each household i (G_i) is then defined as the other households residing in the same locality. Empirically, we proceed as before by estimating the model (6), considering both measures of income inequality and using the logarithm and the share of visible consumption as the dependent variable. The results are reported in Table 5, in Appendix A. The estimates are comparable to those in Table 2, and the overall interpretation is rather equivalent.

Another issue concerns the measure of visible consumption. Although we concentrate on visible goods that can be acquired through financing services, other expenditure categories might be considered conspicuous from the household perspective. By definition, conspicuous consumption does comprise the spending on goods and services with high visibility or status effects. Therefore, we consider a large visible consumption measure, which add to the previous

definition the expenditures on entertainment, travel and tourism, and commemorative events (i.e., parties, buffet, photography, tickets, etc.). Once again, we consider the specification (6) with this new visible consumption measure as the dependent variable. The results are reported in in Table 6, in Appendix B, and do not differ substantially from previous results.

Therefore, we argue that the primary results reported in Table (2) are rather robust to changes in the inequality measure, reference group, and visible consumption definition.

5 Economic Implications

In this paper, we examine how inequality impacts household conspicuous consumption. In particular, we assume that the expenditure on visible goods is motivated by a status-seeking behavior. Therefore, as inequality increases, the average conspicuous consumption tends to decrease given that, as the poor are compelled to reduce their expenditures on visible goods, the required level of expenditure for the rich to sustain the acquired social status also decreases. The evidence confirms this hypothesis, but the access to credit works as a mechanism to compensate for this effect. Specifically, we find a significant negative impact of income inequality on conspicuous consumption only for credit-constrained households.

This result has several economic and policy implications. Conspicuous consumption is often seen as *wasteful* from a social perspective (Hopkins and Kornienko, 2009; de Giorgi et al., 2020). At first, although equality increases social competition, which provides an incentive to indulge in conspicuous consumption, any gain in status-seeking is canceled out by the higher conspicuous consumption of others (Hopkins and Kornienko, 2004). Moreover, a fall in inequality might make the low-income households better off, but there is puzzling evidence that poor households allocate a significant share of their budget on conspicuous consumption while neglecting to invest in human capital (Moav and Neeman, 2012; Charles et al., 2009; Kaus, 2013).

In fact, although it can be argued that social competition can produce positive economic outcomes (Cozzi, 2004), the household status-seeking behavior may generate negative externalities that slow down movements toward socially beneficial equilibria (Akerlof, 1997; Frank, 2008). The economic literature, for instance, has emphasized that the trade-off between conspicuous consumption and saving (or human capital investment) may generate a poverty trap (Moav and Neeman, 2012; Bagwell and Bernheim, 1996).

In addition, access to credit can intensify this outcome, given that it enables households to maintain conspicuous consumption through financing services (Christen and Morgan, 2005). As inequality increases, the non-credit-constrained households may have incentives to increase their indebtedness in order to support visible goods expenditures on a status-seeking behavior. Therefore, economic policies that promote access to credit may yield a less efficient allocation of resources.

Therefore, given the externalities that come from conspicuous consumption in a status-seeking contest, the analysis of social programs must take into account these indirect impacts (Akerlof, 1997). It is worth noting that policies attempting to reduce the degree of economic inequality by stimulating households expenditures might have adverse welfare consequences (Roychowdhury, 2016). For instance, there are evidences that conspicuous consumption is partly financed by debt (Berlemann and Salland, 2016). Naturally, the degree of inequality has effects on welfare through other channels, and its impact on conspicuous consumption should not be viewed as an argument toward efficiency gains.

6 Final Remarks

The intention of this paper is to discuss the conspicuous consumption of Brazilian households. To the best of our knowledge, it is the first study that undertakes such an analysis of consumer behavior based on a relative comparison among households in this country. Specifically, we focus on the effect of inequality on household conspicuous consumption, by emphasizing the role that credit plays on visible expenditure. Empirically, we provide evidence on the negative effect of inequality on conspicuous consumption, mainly for credit-constrained households. This findings support the hypothesis of competitive status-seeking behavior (Hwang and Lee, 2017; Hopkins and Kornienko, 2009).

It is worth mentioning some caveats. First, although we follow the literature benchmark to define visible consumption, several aspects of it might be influenced by cultural features. Therefore, this empirical issue, in particular, requires some further debate. Second, we highlight the importance of credit constraints on visible expenditures decisions. However, the available data are somewhat restrictive on the measurement of household credit conditions, and the analysis so far relies on proxies. Further work should focus on better identifying credit constraints to confirm the results.

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Appendix

A A More Close Reference Group

Table 5: Impact of Income Inequality on Conspicuous Consumption Based on More Close Reference Groups

	Log of Visible		Share of Visible	
	(1)	(2)	(3)	(4)
Constant	-2.5124*** (.1441)	-1.9290*** (.1894)	0.1183*** (.0227)	0.1924*** (.0296)
λ_s	-0.4643*** (.0804)		-0.0544*** (.0125)	
g_s		-1.9387*** (.3055)		-0.2397*** (.0472)
$\ln \bar{y}_{is}$	1.1750*** (.0166)	1.1707*** (.0166)	0.0265*** (.0025)	0.0260*** (.0025)
d_i^c	-0.2013** (.0859)	-0.7333*** (.2312)	-0.0223 (.0144)	-0.0767** (.0386)
$\lambda_s \times d_i^c$	0.4913*** (.1315)		0.0506** (.0219)	
$g_s \times d_i^c$		1.9301*** (.5258)		0.1977*** (.0875)
J-Test	0.2972 [.5856]	0.2272 [.6336]	2.2584 [.1329]	2.1297 [.1445]
λ_s^{ols}	-0.4741*** (.0766)		-0.0567*** (.0119)	
g_s^{ols}		-1.7200*** (.2722)		-0.2027 (.0424)

Note: Two-step generalized method of moments estimation procedure, based on a subsample with 14,430 observations. The vector of instruments include the household current disposable income and a dummy variable that is equal to 1 if the household has any source of capital income. All estimations include the following control variables: household size, age of the head (and a quadratic term), gender and schooling of the head, number of children. ***, **, and * correspond to level of significance of 1%, 5%, and 10%, respectively.

B A Large Visible Consumption Measure

Table 6: Impact of Income Inequality on Conspicuous Consumption - Large Visible Measure

	Log of Visible		Share of Visible	
	(1)	(2)	(3)	(4)
Constant	-3.2557*** (.0968)	-3.0666*** (.1289)	0.0552*** (.0172)	0.0371* (.0223)
λ_s	-0.4349*** (.0621)		-0.0404*** (.0100)	
g_s		-1.0578*** (.1922)		-0.0938*** (.0311)
$\ln \bar{y}_{is}$	1.2879*** (.0100)	1.2883*** (.0102)	0.0531*** (.0017)	0.0533*** (.0018)
d_i^c	-0.1954*** (.0575)	-0.5316*** (.1291)	-0.0182* (.0109)	-0.0592** (.0244)
$\lambda_s \times d_i^c$	0.5119*** (.0967)		0.0513** (.0182)	
$g_s \times d_i^c$		1.5115*** (.3057)		0.1685*** (.0574)
J-Test	0.1030 [.7483]	0.0779 [.7800]	0.2955 [.5867]	0.2697 [.6035]
λ_s^{ols}	-0.6860*** (.0604)		-0.0127 (.0094)	
g_s^{ols}		-0.6118*** (.1565)		-0.0316 (.0276)

Note: Two-step generalized method of moments estimation procedure, based on the entire sample with 39,851 observations. The vector of instruments include the household current disposable income and a dummy variable that is equal to 1 if the household has any source of capital income. All estimations include the following control variables: household size, age of the head (and a quadratic term), gender and schooling of the head, number of children, a dummy for urban residence. ***, **, and * correspond to level of significance of 1%, 5%, and 10%, respectively.