The American Pride and Aspiration

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Abstract

There has been a growing literature on empirical studies on status consciousness. Specifically, the predictions of signaling models and theory of subjective well-being are empirically tested and found to support status seeking behavior. Instead of relying on these established theoretical models on status seeking behavior, we adopt a very general approach and model how individuals' status seeking behavior influences their consumption patterns. We define both an aspiration aspect and a pride aspect of status. Individuals aspire to reach higher status which we call aspiration aspect of status. Individuals also try their best to maintain at least their current status with respect to relatively lower income group class, which we call the pride aspect of status. We model these two aspects of status for the U.S households using Panel Study of Income Dynamics (PSID) data. Some of the results obtained go against the conventional signaling models which predict that as the mean income of the reference group increases, consumption of conspicuous goods decreases. Also, we get results contrary to Duesenberry's claim that rich are not concerned about their position relative to lower income group class.

Keywords: Conspicuous consumption; Status; Household financial allocation;
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1. Introduction

Recently, there has been an upsurge in an academic interest on individual's status seeking behavior. Precursors to the present research on this topic can be traced back to the works by Smith (1776) and Veblen (1899). Veblen coined the term 'conspicuous consumption' to demonstrate how the wealthy class consumed valuable goods (which in itself did not have any intrinsic utility) to distinguish themselves from other classes of the society. Duesenberry (1949) emphasized that an individual's utility does not depend on absolute consumption, but on consumption relative to the average. The above studies reveal that whether be it 'conspicuous' or composite consumption good, consumption relative to the average matters a lot for an individual's happiness. In this paper, we undertake a comprehensive empirical study of the said aspect of individuals' preferences which is termed as "status effect". The study is comprehensive in the sense that we not only test for the presence of status consciousness among individuals, but we also look at the impact of status on financial allocations of a household. If status affects financial decisions of a household, then it is evident that this is a direct consequence of inequality and hence the policy makers should devise policies to reduce inequality.

There is a voluminous theoretical and empirical literature on subjective well-being (see survey by Kahneman and Kreuger, (2006)). Easterlin (1974) was the first to provide empirical evidence that relative income is an important factor in subjective well-being (see also (1995) and (2001)). He looks at the income distribution of individuals across countries over time and finds that within a country as income of individuals grow over time, self-reported happiness grows up to a point and remains unchanged thereafter. In other words, the increase in income is correlated to happiness only to a certain extent. The real increase in happiness comes from income relative to the average and since it is the standard of living that has improved over time and not one's relative position, self-reported happiness did not increase. Using German panel data (GSOEP), Ferrer-i-Carbonell (2005) finds that relative income is as important as absolute income in subjective well-being. Also, Luttmer (2005) using National Survey of Family and Households (NSFH), finds that individuals' utility depends partly on relative income. Using Indonesia micro level data, Powdthavee (2009) finds that it is the individuals' ranking in the community or reference group that matters for one's well-being and not the mean income of the reference group.

There has also been considerable research on status concern using the framework of Spence's (1973) signaling model. In this class of models (Bagwell and Bernheim (1996), Ireland (1994))), conspicuous consumption is used as a signal to reflect one's income or wealth.

Using a signaling framework, Glazer and Konrad (1996) demonstrate how charitable donations may be considered as a signal for one's unobserved wealth. Moav and Neeman (2012) model the case where the consumption of conspicuous goods serves as a signal of individuals' wealth. The authors argue that the more educated individuals are, the higher is their ability to earn by skills they have acquired and as a result, those with higher human capital, need to signal (their income) less by consuming less of the conspicuous goods. On the other hand, as the poor spends a large fraction of their income on conspicuous consumption, it leaves them with a lower share of expenditure for investment in education for the next generation. This in turn generates lower income for the next generation, eventually leading to a poverty trap. The exact opposite thing happens for the rich, whose income continue to rise. Based on the aforementioned signaling models of status concern, Charles, Hurst and Roussanov (2009) conducts empirical tests to check for the impact of status seeking behaviour on the consumption of certain conspicuous goods which they term as visible[1] goods. The theoretical model outlined in their paper predicts a decrease in the consumption of the visible goods as the average income of the reference group increases; i.e. the aspiration level of the individual goes down as the target to be reached increases. In their paper, the reference group is based on race and state. Data shows that Whites earn more than African Americans, and thus the average income of White reference group is higher than African American reference group. They find that African Americans spend much more on visible goods than comparable Whites. This is because within a reference group Whites need to reach a much higher visible goods consumption target to acquire higher status. Since the target to be reached is very high, their aspiration level goes down. Thus, the results support the prediction of the signaling model.

Following this approach, using South African data, Kaus (2013) finds that while this rationale works for coloured and Blacks, it does not work for Whites. Both Charles, Hurst and Roussanov (2009) and Kaus (2013) find that to accommodate high spending on visible goods, the minority group in both countries (U.S.A and South Africa) spend less on health expenditures. Khamis, Nishith and Zarah (2012) apply Charles, Hurst and Roussanov's (2009) approach to Indian data, where reference groups are based on caste and religion. Their results match the signaling model's prediction; similar to Charles, Hurst and Roussanov (2009), they also find that differences in spending on visible goods still persists (although significantly drops) after controlling for mean income of the reference groups. They conclude

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[1] Charles, Hurst and Roussanov (2009) use the term 'visible' goods which are defined by goods that are "observable" and "portable".

that this suggests that preferences might be specific to social groups that are considered. Although there have been many empirical studies on status seeking behavior some of which incorporate the signaling framework, there are a number of concerns that this present paper aims to address.

One principal concern relates to the choice of status goods. In the literature, there is no consensus as to which goods are status goods. To test the effect of status, researchers have considered variants of status goods as per their study. For example, Chao and Schor (1998) choose women's cosmetics as the status good and look at the brand buying pattern to test status consumption. Bloch, Rao and Desai (2004) consider wedding celebrations as status good. As mentioned earlier, Charles, Hurst and Roussanov (2009) consider visible goods as status goods. Heffetz (2011) considers a range of goods and test conspicuous consumption by measuring the association between visibility of the goods and their income elasticities. He finds that there is a strong correlation between visibility of the goods and their associated income elasticity only for high income groups. He considers visible goods as status goods and non-visible goods as necessary goods. However, note that in the papers by Charles, Hurst and Roussanov (2009) and Heffetz (2011), the visible goods constitute only a subset of luxury goods, as even non-visible good may also be a luxury good. Instead of tagging certain goods as status goods based on subjective (visibility, brand buying pattern and so on) choice of the researcher, we pick all the goods that are available in the data, and then select status goods based on the consumption pattern of individuals which forms the novelty of our methodology.

To illustrate this idea, let us suppose that there are only two groups of people: one group who can afford anything and everything and another group who can afford only some goods. If status conscious is present amongst the latter group then it wishes to consume all the expensive things that are bought by the relatively higher income group. However, the relatively lower income group cannot afford all of those expensive goods at one go, so they space out the consumption of such goods over time. When we look at one cross section, what we will typically observe is that such goods will have a high variance in consumption. This is because, a cross section is just a snap shot of the population at one point in time and at that point some households may have bought such expensive goods and some who have not. This will result in a high variance of consumption of the expensive goods. On the other hand, the goods that are left behind are necessarily essential goods which are required every time period and will thus have low variance. In addition to this it is also likely that the rate at which the consumption of non-status goods changes with a change in the level of income or

other exogenous factors (such as age, family composition etc.) is relatively lower than that for the status goods. This also contributes towards a relatively higher variance in consumption of the status goods relative to the non-status goods. Thus a suitable classification of the consumables into status and non-status goods based on their respective variation in consumption forms the crux of our approach.

Once we identify the status goods, we test for presence of status consciousness. It is here that we presume that status consciousness is characterized by two different aspects: an aspiration aspect and a pride aspect. Individuals aspire to reach higher status which we call aspiration aspect of status. Individuals also try their best to maintain their current level of status with respect to relatively lower status group, which we term the pride aspect of status. In this regard, Duesenberry claims that comparisons made in "downward direction" (which we refer to as pride aspect) do not matter. Ferrer-i-Carbonell's (2005) paper finds evidence in support of Duesenberry's claim. Since, we also consider the pride aspect of status; we test for Duesenberry's claim. We find that both the aspiration aspect and pride aspect of status consciousness are significant in all the versions of the model that we test for status. Thus our results contraindicate Duesenberry's claim and supports that individuals try their best to maintain their current level of status. One of the drawbacks of other studies is the assumption that the value of the status variable (given by the mean income of the reference group) of all individuals within a reference group is same. In reality, the target (status the individual is trying to reach by consuming the conspicuous goods) is expected to differ for each individual even within the same reference group (whether be it defined by a geographical region or race) based on their level of income. Our approach is more general, in the sense that we allow for the target to vary across individuals within the same reference group.

Next, compared to the existing literature, we consider a lower level of geographical area as the reference group instead of some broader definitions of the reference group (as for example race and state in Charles, Hurst and Roussanov (2009)). There are two reasons for it. First, it is our assumption that individuals are status conscious based on the economic condition in their neighbourhood rather than race or caste or any such classification. Second, this can also be considered as a test of robustness for our empirical findings. This is because if the results hold for region based distinction of the reference groups, it is expected to be more significant when race or some other demographic classification combined with region is used as the frame of reference group.

Apart from its impact on the expenditure of status goods, we also look at the impact of status on household's financial decisions, like overall consumption expenditure, debt and savings. We find that status significantly alters all these major financial allocations of the households. Thus our contribution to the empirical literature on status effect is thus fourfold. First, we identify status goods using a unique approach where we can deduce whether a good is status or not by just looking at the consumption pattern of goods. Secondly, our status variable is also very generic in the sense that it allows us to look at both aspects of status and allow each individual's realization of status (aspiration and pride) values to be different across individuals even within same reference group. Thirdly, we narrow our extent of the reference group and still obtain statistically significant results of the impact of status. Lastly, to our knowledge this is the first study which has looked at the impact of status on other major financial allocations of a household other than expenditures on select consumables: the status goods.

The rest of the paper is organized as follows. Section 2 describes the data. The method of constructing the status variable is laid down in section 3. Section 4 discusses the empirical models and empirical results. Section 5 discusses policy implications while section 6 concludes.

2. Data

For this study, we use Panel Study of Income Dynamics (PSID) data compiled by the Institute of Social Research at University of Michigan. The PSID is a nationally representative sample based on a random sample of U.S households. The PSID started in 1968 and interviews were conducted annually till 1997, and bi-annually henceforth. For our analysis, we use only the latest available PSID wave, which is 2011 since utilizing the panel structure of the data would imply sacrificing lot of observations. Consumer Expenditure Survey (CES) data is collected by U.S Department of Labor and is another commonly used data source for work related to consumption. We use PSID data for a couple of reasons. The most important reason being that PSID data consists of observations identified at much lower geographical levels (refer to Appendix I for a breakdown of urban-rural regions as classified by PSID) as compared to CES. CES data do not cover all states and has a broader classification of urban and rural regions. On the other hand, PSID has much narrower

division of urban, metropolitan and rural areas based on population.[2] The other reason for using PSID is that PSID compared to CES, provides reliable data on income (Charles, Hurst and Roussanov, (2009)). The only reason in favour of using CES would have been that CES has more consumption categories than PSID. However, we use thirty consumption categories from PSID which covers most of the aspects of consumption and is thus sufficient to conduct our analysis.

Table 1 provides some statistics related to the demographic, expenditure, income and wealth variables.[3] Education[4], age, gender, race and marital status are for the head of the household. Income of the family consists of taxable income, transfers, social security income of head, wife and other family members. Debt, wealth with and without home equity is included in the table. Total consumption expenditure data is obtained from consumption expenditure data extracts (using PSID main interview files) from PSID. As is evident from table 1, average household total expenditure is lower than average household income. Table 2 summarizes household expenditures. Expenditures are split into two broad categories, food[5] and non-food. Food's share of total expenditure is about 17 percent and non-food's share is about 83 percent. Food at home accounts for most of the expenditure share within food category. Housing expenditures is obtained by combining expenditures on mortgage, rent, home insurance and utilities[6], accounts for the highest contributor to non-food expenditures. The next highest contributor is transportation which includes vehicle loan, vehicle lease, vehicle down payment, auto insurance, vehicle repairs, vehicle maintenance, bus and train fares, taxicabs, gasoline, and parking.

3. Constructing the Status Variable

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[2] We are using a collapsed version of urban-region code. The un-collapsed version gives a further split of rural region into two categories. Since the rural region consists of only about 2 percent (243 observations) of the sample and given that there are 51 states, we thought it is best to use the collapsed version of urban-region code as it retains more observations at the state-sector level. Moreover, special permission is required from PSID to use the un-collapsed version.

[3] All expenditures and income are as of year 2010 (for 2011 PSID data file).

[4] Values in the range of 1 to 12 means years of schooling. 12 means high school graduate. Values in the range of 13 to16 means 12 plus years of college. 16 refer to college graduate and 17 refer to at least some post-graduate education.

[5] Food expenditures in PSID consumption expenditures data extracts exclude government transfers. Thus food expenditures using food stamps were added using PSID main interview files. For our analysis, in the rest of the paper, we use food expenditures using food stamps.

[6] Utilities here include electricity, gas, water, sewer and other utilities and also internet and telephone. Although internet/telephone is part of utilities, it is not included in the utilities variable in PSID as it was not originally included in the 1999 file. Unless otherwise mentioned, in our paper, we have kept internet/telephone separately from utilities.

In order to meaningfully estimate any relationship that involves individuals' response to status with their allocative decisions, we need to quantify the factor/s that promotes status seeking behaviour. Since the generally accepted norm is that an individual's status perception stems from her relative position or standing in the society, the natural question that arises is what yardstick to use to measure this very relative position of the individual. The obvious answer that comes to mind is the rank of the individual's income within the society. But the use of individuals' incomes would be justified only if individuals could observe each other's income. In reality, income is not readily observable and thus we consider individuals' total consumption expenditures within a reference[7] group to determine the societal position for any given individual. In addition to this, since we also require differentiating between an individual's perception of the aspiration and pride aspects of status, we construct two variables that indicate the extent to which an individual is placed in a social ladder from the point of view of the highest and the lowest societal positions. Finally, although it is the individual who is status conscious, but it is the household which takes the allocative decisions and therefore for our purpose, we treat households to be synonymous to individuals. Furthermore, for any given household, we consider the median of total expenditures of the relatively richer (poorer) households (recall that households are synonymous to individuals) belonging to the same reference group as the given household to reflect the aspiration (pride) aspect of status of the household.

4. Empirical Models and Results

Now that we have constructed the status variables of the households, we are in a position to discuss about the implications of status on the different allocative decisions made by a household. The first exercise that we undertake is to analyse the impact of status on the households' consumption of various goods. This follows because once an individual perceives her relative societal position, she has the option to "mend her self" by revising her consumption pattern of certain "status" goods to emulate those of the individuals who are higher up the social ladder or to differentiate from the individuals who are lower than her relative position in the society. One way to classify goods into status and non-status goods is to take one good at a time and obtain the relationship of the expenditure share of the good with status, income and other variables. But such an exercise suffers from the problem of aggregation (of the goods). If the good under consideration is very narrowly defined (for

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[7] The reference group we consider is the narrowest possible geographical area provided by the data.

example, vehicle loan as opposed to *all* vehicle expenditures), then it leads to a high variance in the demand for the good across the individuals. This renders all the variables insignificant in the regression even when we use a suitable model. Thus, we formulate an alternative procedure (discussed below) where we do not have to rely on regression results to classify status and non-status goods.

We develop an approach in which we use individuals' expenditure pattern on goods to distinguish between status and non-status goods. First, we arrange the households in order of per capita total expenditure (after adjusting for equivalence scales)[8] and then divide the sample into four groups at 25th, 50th and 75th percentiles. We call these groups, low spend, lower middle spend, upper middle spend and rich. Let x_{ijkl} denote the expenditure on good l of household k belonging to spend group i and state-sector j. Within each spend group and state-sector, we calculate the mean household expenditure of each item, $\bar{x}_{ijl}$. Then we construct the ratio of expenditure of each household k on item l to the average household expenditure of that item within the same state-sector:

$$R_{ijkl} \equiv \frac{x_{ijkl}}{\bar{x}_{ijl}}.$$

The purpose of taking the ratio is to adjust for the cost of living within the particular combination of state and sector. Next, we compute the variance of each item within each spend group:

$$V_{il} \equiv \frac{\sum_j \sum_k (R_{ijkl} - \bar{R}_{il})^2 w_{ijkl}}{\sum_j \sum_k w_{ijkl}},$$ where w_{ijkl} is household weight.

We look at the variance of expenditure of each item within each spend group, V_{il} and then rank the items from low variance to high variance. The presumption here is that items for which variance is low are considered essential for those households and items for which variance is high, can be considered as status goods.

Our proposed methodology has three principal advantages. First, we do not need to mark any good as status good based on subjective choice (discussed in detail in introduction). Next, we do not need to distinguish between the statuses audiences. To understand what we mean by this, consider the following. There are some goods which are visible to neighbours and some goods which are visible only to extended family members and friends who visit a household's house. Depending on whom the household prefers to display status, the consumption of the

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[8] Following Citro and Michaels (1995), equivalent Scale for a household with 'nad' number of adults and 'nch' number of children is given by (nad+0.7nch)[P], where P ranges from 0.65 to 0.75. Betson and Michael (1993) found estimate of P to be 0.76. However, since the recommendation for upper limit on P is 0.75, we selected a value of 0.75 for P to calculate the equivalent scales for households.

type of visible goods varies. Our approach takes care of this distinction of visible goods meant to convey status signal either to neighbours or to the household's extended family/friends and visitors. Finally, our approach also selects those status goods which are not meant to "display" status to others but purely for self-fulfilment. Apart from getting satisfaction by displaying status to others, one also derives happiness from the fact that she has been able to purchase certain goods which the household considers as a status good purely based on subjective valuation and not on its physical properties.

Based on the methodology described above, we order the goods according to their relative acceptability, as status goods. Since there are 30 consumption items in the data and no standard technique to select the rank cut-off to draw the line between status and non-status goods, we choose 15 as our cut-off rank which coincides to half of the number of the consumption items. All items whose rank is less than or equal to 15 is taken as non-status goods while the rest are considered status goods. For the sake of robustness, we also rerun the results using rank of 10 to be the dividing line with no apparent change in the results[9]. Table 3 displays the ranking of items within each spend group. As can be seen from the table, there is not much fluctuation of rankings across the spend groups except few items. For example, items such as number of trips, food delivered at home and parking fees have relatively higher rankings in the low and lower middle spend groups. There is a strong correlation between income and spend and thus low spend can be associated with low income group. This implies that the above mentioned items are expected to be luxury goods for these groups and thus have relatively high rankings. Vehicle loan and mortgage has relatively high ranking for lower spend group and this is again a luxury for this group. In order to take a loan for vehicle, one has to have good credit history or the expectation of paying the loan with current income flow and the lower spend group is less likely to have any of these. On the other hand, rent has a low ranking for the lower spend group, as this group is more likely to rent than own a house. Thus, based on the stability of rankings across spend groups and the above observations, we can safely conclude that it is appropriate to identify status goods using the expenditure pattern approach. Having identified the status goods and constructed the status variable, we proceed in analyzing the presence and impact of status consciousness.[10]

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[9] Note that increasing the cut-off steeply increases the number of zeros in our dependent variable.

[10] For all the regression exercises, we include only those state-sectors where we have at least 30 observations. We then exclude the top and bottom 10 observations (after arranging it by total expenditure in increasing order) because we want to ensure that there are at least 10 observations from which to calculate the status variable for a household. For example, if we take the household corresponding to 29th observation, we have only the 30th observation to calculate the aspiration aspect of status. Calculating status variable from just one

First, we look at the results of presence of status consciousness. The hypothesis is that if individuals' are status conscious, then we would expect that the expenditure share of status goods, after controlling for the effect of income and other covariates, be positively related to the status variable. Since this involves an Engel relationship, we use the model specification proposed by Leser (1963) with additional components to accommodate the status variables. Leser proposed this specification to estimate the Engel curve and showed that this specification performs better than other specifications. Thus we estimate the following equation:

$$\frac{status_{rj}}{texp_{rj}} = \alpha_r + \beta \ln(S_{rj}^A) + \gamma \ln(S_{rj}^D) + \theta_r \ln(texp_{rj}) + \delta_r \frac{1}{texp_{rj}} + \mu Controls + \varepsilon_{rj} \quad (1)$$

where $status_{rj}$ is sum of expenditures on all status goods and $texp_{rj}$ denotes total expenditure, r indicates region (urban-rural code combination) and j refers to household. In the above specification, $texp_{rj}$ is suspect to be an endogenous variable. This is because total expenditures and the expenditures on status are determined simultaneously by the households and it is likely that a change in the expenditure behind the status goods (and hence its ratio to the total expenditure) statistically affects the total consumption expenditure. Thus, in order to obtain meaningful estimates, we use income as an instrument for total expenditure to estimate equation 1. As mentioned earlier, there are two status variables. The aspiration aspect of status is denoted by S_{rj}^A, and pride aspect by S_{rj}^D. The status variables are constructed in the following manner. Within each region r, each household j's aspiration (pride) reference group is those households whose total expenditure is higher (lower) than household j's total expenditure. Next, we pick the median of total expenditure of the aspiration/pride reference group as the aspiration/pride aspect status variable. Note that unlike the signaling model, in our approach, the status variable for each household is likely to differ. Controls that we use for the regression are number of family members and number of adults, both in logs and at the household level. We also include dummies for race, age, age-squared, education, dummies for marital status and gender, all these variables taken for household head only.

Table 4 gives the estimation results for equation 1. We have provided the results for two different cut-offs for selection between status and non-status goods. For cut-off of 10 and 15, we find both the status variables are positive and significant. Results also indicate that $texp_{rj}$ is an endogenous variable and that income is an appropriate instrument for total expenditures.

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observation entails high variance in the status variable. Since we want more observations from which to calculate the status variable, we ensure that there are at least 10 such observations.

Now that we have established the fact that status consciousness is present among individuals, we evaluate the impact of status on other financial decisions of the households.

There are several ways by which a household may increase its expenditure on status goods. One is by reducing its share of expenditure on non-status goods. This is precisely what we just saw in the results above, that being affected by status, households increase their expenditure share on status goods. Another way that the household can increase its consumption of status goods is by borrowing. Debt imposes a burden on the consumer, but being status conscious, the household may still want to incur debt in order to purchase status goods. In order to look at the effect of status on debt[11], we estimate the following equation using:

$$\ln(debt_{rj}) = \alpha_r + \beta\ln(S_{rj}^A) + \gamma\ln(S_{rj}^D) + \theta_r\ln(income_{rj}) + \mu Controls + \varepsilon_{rj} \qquad (2)$$

Controls that we use for the regression are same as in equation 1. Table 5 gives the results for the regression.[12] Without fixed effects, the aspiration aspect of status is insignificant. With fixed effects, however, both the aspects of status are positive and significant. However, the pride aspect is stronger than the aspiration aspect. The implication of this result is that individuals are willing to take more debt burden in order to maintain their current status. When it comes to reaching higher status, the consumer is relatively less willing to add on debt. Other things to note are: income and race variables are insignificant. Except age, all the other control variables are significant.

There is yet another way to increase expenditure on status goods and that is by running down savings. Since individuals' consumption and savings decisions are taken jointly (one unit of additional consumption means one unit less of savings), looking at total expenditure net of income and other earnings, also reflects considering savings or net assets. Thus, if status effect is present, then total expenditures should be positively related to status variables after one controls for income and debts (which we collectively refer to as "brought-in-cash") as estimated from the relation:

$$\ln(texp_{rj}) = \alpha_r + \ln(\beta S_{rj}^A) + \gamma\ln(S_{rj}^D) + \theta_r\ln(bic_{rj}) + \mu Controls + \varepsilon_{rj} \qquad (3)$$

where $texp_{rj}$ denotes total expenditure and bic_{rj} is brought-in-cash.[13]

Instead of causality from brought-in-cash to total expenditure, it is possible that causality runs in both directions especially since we have argued that debts are incurred by a household to

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[11] Debt comprises of credit card debt, student loan, medical debt and family loan.
[12] There are 2,347 observations which are left censored. For this reason, we use Tobit regression.
[13] We drop property taxes from total expenditure and expenditure share because taxes are not accounted for in utility maximization problem.

purchase status goods – one of the constituents of total expenditure. This might give rise to the problem of endogeneity. We estimate equation 3 using income as instrument for brought-in-cash. The reason for using income as an instrument is that the amount of income received, is not amenable to changes in demands of status goods and to total expenditures. Also, it is expected that households' debt potential depends on income and thus are correlated. This implies that income can be used an instrument for brought-in-cash. However, the endogeneity test for brought-in-cash was rejected. Hence, we estimated the equation using OLS. Table 6 reports the results with and without fixed effects. Both the aspects of status are positive and significant implying status effect. Brought-in-cash is also very significant and is of positive sign as expected. To elaborate on the shift in status responsiveness with relative income, we also rerun the above regression interacting the status variable with an indicator for the income class. To be precise, we divide the population into ten deciles from low income to high income on per-capita[14] basis. We then interact the status variables with income deciles indicator. Table 7 shows the results with and without fixed effects. All the status coefficients across all income deciles are significant. For pride aspect of status, the status coefficients are decreasing across income deciles. The implication of this is that sensitivity of status is decreasing with income. In other words, individuals' pride aspect of status becomes weaker as income increases. The reverse happens for aspiration aspect. As an individual gets richer, the aspiration aspect of status becomes stronger.

Summing up, our results indicate that status consciousness is strongly present among individuals. Wherever we expected status to have an impact on the financial allocations of the households, such association turned out to be supported statistically. Moreover our results are also robust to the extent that any suitable change in the construction of the variables pertaining to our empirical model does not invalidate our results.

5. Policy Implications

Given our empirical findings, there are a number of potential implications of our results from the point of view of public policies. We test and confirm that households, given their income levels, respond to changes in the expenditures of other households of the reference group, by altering not only their relative consumptions of various consumables but also their debt burden and overall consumption expenditure. In addition to this, we also find that the extents

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[14] Dividing household income by number of family members in the household gives a better measure of purchasing power than household income itself. Everything else equal, only the difference in number of family members can place two households (via the purchasing power effect) in different positions in the (aspiration and pride) reference groups.

of these responses by the households depend on whether the expenditures change for the relatively poor or for the relatively rich in the reference group. This prediction accordingly necessitates the formulation of a preference structure that allows for an asymmetry not only in the way the distribution of expenditures alters the marginal utility of the various consumables (i.e. across the status and non-status goods) but also in the way in which a change in the distribution affects the overall utility of the representative individual based on her relative position in the distribution. This altercation in consumer preferences would obviously imply certain non-trivial responses for other aspects of household financial behavior beyond the consumption and saving decisions. For example, it might lead to different attitudes towards uncertainties faced by the household singularly or jointly with the reference group and potential implications on rate of default on loans, attitudes towards insurance and so on.

From a macro-economic perspective, the support that our results yield to the status-based view of conspicuous consumption typically imply an equilibrium with over-consumption of certain goods at the expense of reduction in other essential outlays and savings. As a consequence, this shift in consumption patterns may lead to both static and dynamic inefficiencies and provisions of a selective consumption tax, a progressive income tax and redistributive policies which take the form of transfers in kind rather than in monetary terms may confer certain growth benefits in terms of both level and rate. Furthermore, the presence of status consciousness has important implications for the dependence of growth on inequality. A conventional wisdom often relied upon in the literature on growth and inequality (see for example the works of Kuznets (1955), Kaldor (1960), Kalecki (1971), Bertola (1993)) is that inequality promotes growth as the richer class engage more in investment activities. Our result on the contrary, suggests that inequality in the presence of status consciousness may lead even the rich to engage in consumption activities instead and this may lead to a lowering of the overall rate of growth. Apart from this, one may also question the potential for economic growth to boost overall utility in terms of "happiness" at the cost of inequality in the presence of status consciousness. This follows because status consciousness actually diminishes the welfare of an individual where given the individual's income, the overall inequality rises.

As a bottom-line of these discussions it may be concluded that obtaining a clearer understanding of the pathways through which reference groups exert their effects is crucial for public policy formulations. Policy decisions must adequately address the correlation between neighborhood indicators and individual outcomes of interest and design pragmatic

strategies endogenizing the interdependence between the individual and the neighborhood as the reference group.

6. Conclusion

In this paper, we undertake a comprehensive empirical study on status consciousness. We do not set out to test the predictions of the signaling model or for that matter, any theoretical model. We took an open ended approach and made multiple generalizations to the basic empirical models that are used in the recent past for testing status effect (For example, Charles, Hurst, and Roussanov (2009)). We incorporated both the aspiration and pride aspects of status. We developed a new approach to classify status and non-status goods. Then we tested for the presence of status consciousness amongst individuals and also evaluated the impact of status on financial allocations of a household.

There are two main results of our paper. The first is that status effect is present among U.S households. For our best models, which are those where we include fixed effects, we find that both pride and aspiration status variables are significant. When status is interacted with income, we find that pride aspect is significant for higher income group people which is a finding contrary to Duesenberry's claim that the rich are not concerned about their relative position with respect to the relatively lower income group people. On the other hand, since the aspiration aspect of pride is significant in all regressions, this implies that our result is not supporting signaling model's prediction, that is, as average income of the reference group increases, consumption of status goods decreases.

The second main result of our paper is that status impacts the financial allocation of a household. Being status conscious, households shift consumption from essential commodities to status goods. We also showed that despite debt being a burden on the consumer, households incur debt to display status. Finally, our results indicate that households save less or run down assets/savings to buy status goods. All of these have strong policy implications which we have discussed above.

Overall, our contribution to the status literature is in supporting the evidence of status consciousness using a more robust approach and second, demonstrating that status also impacts the financial allocations of a household.

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Appendix I – Metropolitan, Urban and Rural regions classification

Region	Description (numbers in M-Million; K-thousand)	N	Percent
1	Central counties of metropolitan area with population >=1M	2,478	28
2	Fringe counties of metropolitan area with population >=1M	1,338	15
3	Counties in metropolitan areas with population between 250K and 1M	2,256	25
4	Counties in metropolitan areas with population < 250K	614	7
5	Urban population (close to a metropolitan area) >=20K	310	4
6	Urban population (not close to a metropolitan area) >=20K	285	3
7	Urban population (close to a metropolitan area) < 20K	594	7
8	Urban population (not close to a metropolitan area) < 20K	737	8
9	Rural	243	3
Total		8,855	100

Note: Region codes corresponding to 'foreign' and 'not applicable' are not included in the table.

Table 1 – Descriptive Statistics

Variable	Mean	SD	25 Percentile	Median	75 Percentile
Education	13.48	2.72	12	13	16
Age	51.27	17.95	36	51	63
Number of family members	2.22	1.36	1	2	3
Number of children	0.52	1	0	0	1
Married dummy (base – Single)	0.45				
Male dummy (base – Female)	0.68				
Black dummy (base – White)	0.15				
Other Race dummy (base – White)	0.06				
Total Expenditure $	40,444	35,955	20,550	33,400	51,451
Income $	69,760	90,841	25,000	49,000	88,000
Debt $	10,339	31,997	0	400	9,000
Wealth without home equity	220,000	980,000	700	18,000	140,000
Wealth with Home equity	310,000	1,100,000	2,500	55,000	260,000
Observations			8,661		

Note: If household is not in any U.S state or if education variable is taking missing value or if race is not known, then that observation is dropped from the sample. PSID weights are used.

Table 2 – Expenditure Summary

Expenditures $	Mean	SD	25 Percentile	Median	75 Percentile	Share of Expenditure
Food	7,216	4,698	3,900	6,240	9,360	17.1%
Food at home	5,092	3,387	2,600	4,420	6,500	12.1%
Food outside	2,016	2,373	520	1,300	2,600	4.8%
Food delivered	107	524	0	0	0	0.3%
Non-Food	34,976	35,070	16,020	27,849	44,810	82.9%
Housing	14,610	12,153	6,840	11,820	19,140	34.6%
Transportation	8,654	10,323	2,335	5,880	11,640	20.5%
Education	1,465	6,034	0	0	0	3.5%
Childcare	393	2,048	0	0	0	0.9%
Health	3,247	6,029	340	1,725	4,154	7.7%
Household Repairs	1,894	15,186	0	100	1,000	4.5%
Household Furnishing	1,020	6,388	0	200	1,000	2.4%
Clothing	1,239	4,232	250	600	1,500	2.9%
Trips	1,626	3,258	0	500	2,000	3.9%
Other Recreation	828	3,370	0	300	800	2.0%
Observations				8,661		

Note: If household is not in any U.S state or if education variable is taking missing value or if race is not known, then that observation is dropped from the sample. PSID weights are used.

Table 3 – Ranking of goods across spend groups

Items	Spend Group			
	Low	Lower Middle	Upper Middle	Rich
Telephone & Internet	2	1	1	1
Food at Home	1	2	2	2
Utilities	3	3	3	3
Auto Insurance	4	4	4	4
Gas	6	6	5	5
Food Outside	5	5	6	6
Clothing	7	7	7	7
Trips	13	13	9	8
Home Insurance	8	8	12	9
Mortgage	18	14	15	10
Health Insurance	9	10	11	11
Other Recreation	10	9	8	12
Doctor	14	12	13	13
Home Furnishing	15	15	14	14
Prescription	12	11	10	15
Home Repairs	17	17	16	16
Rent	11	16	18	17
Vehicle Repairs	16	18	17	18
Vehicle Addition	19	21	20	19
Vehicle Loan	23	19	19	20
Hospital	22	20	28	21
Education	20	22	21	22
Vehicle Down payment	21	23	25	23
Food Delivered	27	27	22	24
Parking	30	28	23	25
Other Transportation	25	25	24	26
Vehicle Lease	29	30	30	27
Cab	24	29	26	28
Bus	26	26	27	29
Childcare	28	24	29	30

Table 4: Test for presence of status consciousness
Share of Expenditure on Status Goods

Regression	I	II	III	IV
Aspiration aspect	1.1808**	1.9871***	1.6266***	2.5279***
	(0.4921)	(0.7569)	(0.5669)	(0.8412)
Pride aspect	0.4374***	0.6048***	0.5710***	0.7612***
	(0.1529)	(0.2169)	(0.1782)	(0.2406)
Log(Total Expenditures)	-2.3778***	-2.7756***	-3.2334***	-3.5457***
	(0.8611)	(0.9497)	(0.9842)	(1.0451)
Inverse of Total Expenditures	-3.74e+04***	-3.67e+04***	-5.12e+04***	-4.77e+04***
	(1.26e+04)	(1.14e+04)	(1.44e+04)	(1.27e+04)
Log(Number of Adults)	-0.0321	-0.0446**	-0.0035	-0.0178
	(0.0202)	(0.0200)	(0.0291)	(0.0270)
Log(Number of Family members)	0.0285	0.0217	-0.0091	-0.0229
	(0.0223)	(0.0187)	(0.0273)	(0.0213)
Age	-0.0022	-0.0041**	-0.0047*	-0.0077***
	(0.0024)	(0.0021)	(0.0028)	(0.0023)
Age-squared	0.0000	0.0000	0.0000	0.0001**
	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Married Dummy(base-Singles)	0.0472**	0.0390**	0.0444*	0.0307
	(0.0211)	(0.0198)	(0.0260)	(0.0237)
Education	0.0022	0.0031	0.0003	0.0017
	(0.0022)	(0.0025)	(0.0031)	(0.0029)
Black Dummy(base-White)	0.0287	0.0131	0.0475*	0.0158
	(0.0195)	(0.0154)	(0.0257)	(0.0210)
Other race Dummy(base-White)	0.0122	0.0197	-0.0092	-0.0070
	(0.0174)	(0.0203)	(0.0228)	(0.0242)
Food Stamps Dummy	-0.0259	-0.0228	-0.0252	-0.0187
	(0.0186)	(0.0180)	(0.0224)	(0.0212)
Male dummy(base-Female)	-0.0162	-0.0171	-0.0142	-0.0131
	(0.0154)	(0.0148)	(0.0231)	(0.0211)
Constant	9.3236***		12.4589***	
	(2.9138)		(3.4853)	
Fixed Effects	No	Yes	No	Yes
Observations	5,197	5,197	5,197	5,197
Weak Identification Test (Kleibergen-Paap Wald F Statistic)	51.047	40.042	51.047	40.042
Endogeneity Test – Chi-sq value	27.371	27.001	27.371	27.001
Endogeneity Test – P value	0.0000	0.0000	0.0000	0.0000

Note: *, **, *** denotes significance level at 10%, 5%, 1% respectively. 2. Standard errors in parenthesis. Regressions I & II and III & IV are with rank cut-offs 10 and 15 respectively.

Table 5: Tobit Regression Results for Effect of Status on Debt

Regression	I	II
Aspiration aspect	0.7851	1.2012*
	(0.5003)	(0.7266)
Pride aspect	1.4876***	1.3306***
	(0.3752)	(0.5140)
Log(Income)	0.1799	0.1376
	(0.1505)	(0.1495)
Log(Number of Adults)	1.3071***	1.2073***
	(0.3821)	(0.3969)
Log(Number of Family members)	-0.9359***	-0.8860***
	(0.2681)	(0.2735)
Age	-0.0154	-0.0211
	(0.0303)	(0.0320)
Age-squared	-0.0006*	-0.0005*
	(0.0003)	(0.0003)
Education	0.1821***	0.1729***
	(0.0454)	(0.0443)
Black Dummy(base-White)	-0.1653	0.0999
	(0.2746)	(0.2654)
Other race Dummy(base-White)	-0.4982	-0.2936
	(0.5491)	(0.5506)
Married Dummy(base-Singles)	0.6384***	0.6800***
	(0.2361)	(0.2339)
Food Stamps Dummy	0.6100*	0.5750*
	(0.3317)	(0.3200)
Male dummy(base-Female)	-1.0040***	-1.0825***
	(0.2583)	(0.2576)
Constant	-19.9107***	-21.6088***
	(3.2338)	(4.0260)
Fixed Effects	No	Yes
Observations	5,197	5,197

Note: *, **, *** denotes significance level at 10%, 5%, 1% respectively.

Table 6: Effect of Status on Total Expenditure

Regression	I	II
Aspiration aspect	0.5900***	0.8136***
	(0.0546)	(0.0589)
Pride aspect	0.6268***	0.6632***
	(0.0470)	(0.0462)
Log(Brought-in-cash)	0.0445***	0.0314***
	(0.0048)	(0.0051)
Log(Number of Adults)	-0.0066	-0.0102
	(0.0110)	(0.0087)
Log(Number of Family members)	0.0515***	0.0283***
	(0.0085)	(0.0059)
Age	0.0019**	-0.0001
	(0.0009)	(0.0007)
Age-squared	-0.0000**	-0.0000
	(0.0000)	(0.0000)
Education	-0.0005	0.0007
	(0.0012)	(0.0009)
Black Dummy(base-White)	0.0068	0.0001
	(0.0117)	(0.0080)
Other race Dummy(base-White)	-0.0124	0.0102
	(0.0185)	(0.0111)
Married Dummy(base-Singles)	0.0223***	0.0086
	(0.0085)	(0.0076)
Food Stamps Dummy	-0.0099	-0.0075
	(0.0124)	(0.0088)
Male dummy(base-Female)	0.0019	0.0003
	(0.0075)	(0.0053)
Constant	-2.7589***	-5.2711***
	(0.3976)	(0.3914)
Fixed Effects	No	Yes
Observations	5,201	5,201
R-squared	0.91	0.95

Note: *, **, *** denotes significance level at 10%, 5%, 1% respectively.

Table 7: Effect of Status on Total Expenditure-Income Quantiles

Regression	I	II
Aspiration aspect x Income Q1	0.4817***	0.7918***
	(0.0631)	(0.0724)
Aspiration aspect x Income Q2	0.5441***	0.7826***
	(0.0646)	(0.0685)
Aspiration aspect x Income Q3	0.5511***	0.7895***
	(0.0649)	(0.0676)
Aspiration aspect x Income Q4	0.5547***	0.7999***
	(0.0533)	(0.0598)
Aspiration aspect x Income Q5	0.5817***	0.8079***
	(0.0768)	(0.0663)
Aspiration aspect x Income Q6	0.6072***	0.8213***
	(0.0648)	(0.0649)
Aspiration aspect x Income Q7	0.6022***	0.7716***
	(0.0694)	(0.0737)
Aspiration aspect x Income Q8	0.6801***	0.8634***
	(0.0804)	(0.0665)
Aspiration aspect x Income Q9	0.6164***	0.8263***
	(0.0764)	(0.0691)
Aspiration aspect x Income Q10	0.7235***	0.8938***
	(0.0689)	(0.0675)
Pride aspect x Income Q1	0.7423***	0.6837***
	(0.0569)	(0.0566)
Pride aspect x Income Q2	0.6742***	0.6946***
	(0.0587)	(0.0556)
Pride aspect x Income Q3	0.6675***	0.6879***
	(0.0622)	(0.0617)
Pride aspect x Income Q4	0.6643***	0.6755***
	(0.0410)	(0.0483)
Pride aspect x Income Q5	0.6353***	0.6673***
	(0.0829)	(0.0610)
Pride aspect x Income Q6	0.6084***	0.6518***
	(0.0535)	(0.0537)
Pride aspect x Income Q7	0.6134***	0.7075***
	(0.0697)	(0.0655)
Pride aspect x Income Q8	0.5289***	0.6085***
	(0.0699)	(0.0614)
Pride aspect x Income Q9	0.5987***	0.6480***
	(0.0757)	(0.0657)
Pride aspect x Income Q10	0.4819***	0.5753***
	(0.0669)	(0.0662)
Log(Number of Adults)	-0.0049	-0.0097
	(0.0108)	(0.0086)
Log(Number of Family members)	0.0654***	0.0370***
	(0.0118)	(0.0094)
Log(Brought-in-cash)	0.0286***	0.0229***
	(0.0062)	(0.0061)
Age	0.0017*	-0.0003
	(0.0009)	(0.0007)
Age-squared	-0.0000**	0.0000
	(0.0000)	(0.0000)
Education	-0.0006	0.0005
	(0.0012)	(0.0008)
Black Dummy(base-White)	0.0081	0.0001
	(0.0119)	(0.0082)
Other race Dummy(base-White)	-0.0139	0.0079
	(0.0181)	(0.0106)
Married Dummy(base-Singles)	0.0219**	0.0088
	(0.0085)	(0.0076)
Food Stamps Dummy	-0.0021	-0.0060
	(0.0117)	(0.0095)
Male dummy(base-Female)	0.0012	-0.0001
	(0.0079)	(0.0054)
Constant	-2.5794***	-5.1547***
	(0.4263)	(0.4149)
Fixed Effects	No	Yes
Observations	5,201	5,201
R-squared	0.92	0.95

Note: *, **, *** denotes significance level at 10%, 5%, 1% respectively.