

MAXIMIZING AND SATISFICING CONSUMER BEHAVIOR: MODEL AND TEST

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“Freedom and autonomy are critical to our well-being, and choice is critical to freedom and autonomy. Nonetheless, though modern Americans have more choice than any group of people ever has before, and thus, presumably, more freedom and autonomy, we don’t seem to be benefiting from it psychologically.” (Schwartz et al., 2002 p. 99).

ABSTRACT

Over the last forty years, researchers have shown that for developed economies individual happiness has not changed as real per capita income grew. The seminal work by Schwartz *et al.* (2002) suggests that this phenomenon can be partially explained by maximizing behavior. This article adds to the rational choice literature by examining the underlying determinants of maximizing and satisficing consumer tendencies rather than focus on its outcomes. Using a theoretical model, survey data, and a four-equation simultaneous equations model, this article finds that (1) age, (2) gender, (3) locus of control, (4) satisfaction with life scale, and (5) peer effects are significant determinants of maximizing consumer behavior. **JEL Classifications:** D11, D12, C30.

INTRODUCTION

The blending of economic and psychological theory to help explain human behavior is manifest in the last 40 years with the spread of rational choice theory. Homans (1961) pioneered the notion of rational and exchange theory, which has its foundations in behaviorist psychology. Rational choice theory says that individuals are motivated by wants and goals that demonstrate their preferences. Essentially, rational choice theory assumes that individuals “...act within specific, given constraints and on the basis of the information that they have about the conditions under which they are acting” (Browning *et al.*, 2000, pp. 127).

Recent research has explored the extent to which individuals use “rules of thumb” to make the best decision given a limited amount of information versus investing greater effort to acquire more information. To this end, Schwartz *et al.* (2002) postulates that consumers exist along a continuum anchored by maximizers on the one hand, and satisficers on the other. Maximizers tend to seek perfect information about most or all consumer choice options, while satisficers tend to be satisfied with “good enough.” Thus, maximizers will often agonize over purchase situations, wondering if they have enough information to make a choice, and

sometimes even doubting their own analyses. Satisficers on the other hand are more likely to examine a few choice options, and then make a decision based on what information they have.

Maximizers may face more distress as product proliferation increases. New products are vehicles for firms to increase market share and sales, as well as innovate, diversify and adapt to changing market conditions, see Schoonhoven, *et al.*, (1990) Banbury and Mitchell (1995), and Chaney and Devinney (1992). That US society is one of product proliferation is reflected in the annual rate of new product and service introductions, as well as the rate of technological change. In 2003, for example, there were 33,678 new packaged goods introductions alone, up 6% from 2002, see Innovation & Business Architectures (2004). These efforts are directly related to a firm's quest for long-term survival. As competition escalates, consumers are faced with an ever-expanding array of new choices. Maximizers will put forth a great deal of effort to obtain information about the increased number of products to find an optimal choice, while satisficers will be drawn toward products and services that simply fit their minimum requirements.

While Schwartz *et al* (2002) is celebrated for explaining the maximizer/satisficer continuum, little has been done to try to predict a individual's placement on this line. This study seeks to expand on Schwartz by providing a theoretical model and an empirical test of maximizing behavior. The theoretical model is tested empirically with survey data that includes a variety of independent variables, including demographic dimensions, self-reported happiness, and a calculated locus of control (LOC) value. The results provide support for traditional parameters while giving guidance for further theoretical analysis. For example, while not theoretically modeled, the inclusion of Rotter's (1966) LOC value in the empirics is of particular importance in that it seeks to link social learning theory with happiness and consumer orientation.

This article employs both OLS and 3SLS empirical methods and finds that young males, with a more internal locus of control, who view themselves as being rather unhappy, and who view their peers as being more maximizing than satisficing, are more likely to be oriented toward the maximizing end of the scale.

This paper proceeds as follows: section II develops a simple model of maximizing behavior, section III details the data and the survey instrument applied in this paper, section IV develops a single equation model that analyzes the primary determinants of maximizing behavior, section V builds on the previous section with a simultaneous equations model that captures the bi-directional relationships between the independent variables and the maximization scale, and section VI concludes with a summary and provides suggestions for future research.

THE THEORETICAL MODEL

A simple view of maximizing behavior is used to motivate the theoretical model: those who devote more time to maximizing realize a greater benefit from their income. In other words, they spend their money in a way that increases the benefit from their limited income.

We employ a variation of the classic labor-leisure utility tradeoff to incorporate maximizing behavior. An agent's utility is a function of leisure, l , and *realized* income, z . Realized income depends, in part, on the amount of time

devoted to maximizing behavior, m . Let y be the agent's income and $\phi \in (0,1)$ be the potential gain from maximizing behavior. In order to simplify the analysis we use a specific functional form for realized income,

$$z = (1 - \phi)y + \phi y \frac{m}{T} \quad (1)$$

where T is the available amount of time the agent has to allocate between maximizing behavior, leisure, and hours of work, h . Note that the agent is subject to the time constraint $T = h + l + m$.

Equation (1) has the useful characteristic that it is increasing in the amount of time devoted to maximizing behavior. Also, it states that the agent will realize $(1 - \phi)$ portion of her income even if she devotes no time to maximizing behavior (i.e. $m = 0$). However, if the agent devotes all of her time to maximizing behavior (i.e. $m = T$) she will receive the entire benefit of her income, that is $z = y$.

An agent's income depends on the amount of hours worked, the wage rate, w , and unearned income, G , such as gifts, social security payments, or other wealth transfers. The functional form of income is straightforward, $y = wh + G$. Substituting in the time constraint for hours worked yields

$$y = w(T - l - m) + G. \quad (2)$$

For simplicity, we assume the agent's utility function is logged Cobb-Douglas:

$$U = \alpha \ln(l) + \beta \ln(z) \quad (3)$$

where α and β are the preference parameters for leisure and realized income, respectively. This functional form for utility follows the standard assumption: more of leisure and income are preferred to less and the agent experiences diminishing returns to both. By substituting (1) and (2) into (3), and simplifying, we obtain utility as a function of leisure and time allocated to maximizing behavior:

$$U = \alpha \ln(l) + \beta \ln \left(\frac{(G + w(T - l - m))(m\phi + T(1 - \phi))}{T} \right) \quad (4)$$

Maximizing (4) with respect to the choice variables, l and m , and simplifying gives the following first order conditions:

$$FOC_l : \frac{\alpha}{l} - \frac{\beta w}{G + w(T - l - m)} = 0 \quad (5a)$$

$$FOC_m : Tw(2\phi - 1) + \phi(G - w(l + 2m)) = 0. \quad (5b)$$

Equations (5a) and (5b) can be solved for l and m , however only the equilibrium solution for m is displayed for brevity and because the determinants of maximizing behavior are the focus of this paper:

$$m = \frac{Tw(\phi(\alpha + 2\beta) - (\alpha + \beta)) + \beta\phi G}{\phi(\alpha + 2\beta)w}. \quad (6)$$

Several hypotheses regarding maximizing behavior are obtained from equation (6) by using comparative statics analysis. The mathematics of the comparative statics are cumbersome and left to an appendix, however we summarize the main results from appendix equations (A1) – (A6) here. Maximizing behavior decreases with increases in wage and leisure preference; maximizing behavior increases with increases in unearned income, potential gains from maximizing, and income preference. Finally, maximizing behavior will increase with available time as long as the potential gain from maximizing is large enough.

Several hypotheses can be tested using the data set described below. We expect those with greater earned income to devote less time to maximizing; however those with greater unearned income will devote more time to maximizing. Married couples are more likely to have access to unearned income (income generated from their spouse) and therefore should be more likely to maximize. Controlling for this, increased income should have a negative effect on maximizing behavior. Also, those who have greater religious intensity (i.e. spend more time devoted to rituals) will have less available time; this should (at least weakly given the hypothesis above) negatively effect maximizing behavior. Finally, age should negatively affect maximizing behavior as those who are closer to retirement have a higher leisure preference.

DATA AND THE MAXIMIZATION QUESTIONNAIRE

This study analyzes rational choice theory by examining the factors that determine maximization tendencies. The data used in this study originated from an online survey that measured maximizing and satisficing characteristics. While we follow the maximizing questionnaire developed by Schwartz *et al.* (2002), this study also collected additional data which draws out some of the factors that impact an individual's maximization preferences. The survey was announced to students in a variety of spring 2007 courses including economics, ethics, consumer behavior, and e-commerce. Participation in the survey was not mandatory, thus rendering a volunteer sample. A population of 240 usable and complete surveys was collected. A variety of demographic, religious, and other ethno linguistic variables were obtained from the survey, including gender, income, age, locus of control (i.e. how strongly people perceive they are in control of their destiny), religious adherence, religious intensity (measured by how many times an individual participates in religious services in a given month, see Terpstra and Rozell (1993) and Barro and McCleary (2002, 2003)), and ethnicity. A more detailed breakdown of the data and

the thirteen maximization factors can be found in Table 1.

Table 1
Maximization Scale Descriptive Statistics

Factor	Mean	Standard Deviation	Maximum	Minimum
1. Whenever I'm faced with a choice, I try to imagine what all the other possibilities are, even ones that aren't present at the moment.	5.071	1.525	7	1
2. No matter how satisfied I am with my job, it's only right for me to be on the lookout for better opportunities.	5.162	1.629	7	1
3. When I am in the car listening to the radio, I often check other stations to see if something better is playing, even if I am relatively satisfied with what I'm listening to.	4.704	2.012	7	1
4. When I watch TV, I channel surf, often scanning through the available options even while attempting to watch one program.	4.754	2.145	7	1
5. I treat relationships like clothing: I expect to try a lot on before finding the perfect fit.	3.295	1.896	7	1
6. I often find it difficult to shop for a gift for a friend.	4.487	1.831	7	1
7. Renting videos is really difficult. I'm always struggling to pick the best one.	3.345	1.923	7	1
8. When shopping, I have a hard time finding clothing that I really love.	4.450	2.032	7	1
9. I'm a big fan of lists that attempt to rank things (the best movies, the best singers, the best athletes, the best novels, etc.).	3.671	1.973	7	1
10. I find that writing is very difficult, even if it's just writing a letter to a friend, because it's so hard to word things just right. I often do several drafts of even simple things.	3.350	1.949	7	1
11. No matter what I do, I have the highest standards for myself.	5.750	1.176	7	1
12. I never settle for second best.	5.066	1.487	7	1
13. I often fantasize about living in ways that are quite different from my actual life.	4.850	1.757	7	1
Sum of 1 – 13 Maximizing Questions	57.958	10.939	85	31

Source: Maximizing questions are from Schwartz *et al.* (2002). Maximum possible score is 91 (13*7=91), minimum score possible is 13 (13*1=13), and indifferent score is 52 (13*4=52). There are 240 survey respondents.

The thirteen maximization factors from Schwartz *et al.* (2002) appear in the first column of the table. Respondents respond to a seven digit Likert scale where 1 is “completely disagree,” 4 is “indifferent,” and 7 is “completely agree.” Higher factor responses indicate higher maximization preferences. The results from the thirteen factors indicate that the respondents had maximizing preferences for eight of the twelve questions. Only questions (5), (7), (9) and (10) did the average respondent indicate satisficing tendencies. The last row of the table reports the total maximization score. An indifferent sample would average a score of 52, all things equal. This study reinforces Schwartz *et al.* (2002) in that the sample is slightly more maximizing than satisficing (i.e. overall mean is 57.9).

FACTORS INFLUENCING MAXIMIZING BEHAVIOR

In the next two sections, empirical models are developed to test the direction and significance of several independent variables on maximizing behavior. The dependent variable for this article is the sum of the thirteen maximizing questions from Schwartz *et al.* (2002) and reported in Table 1. With regards to independent variable inclusion, this paper applies variables that have been used in past research on maximization (typically correlation analysis and means testing only), see for example Brenner *et al.* (1996), Lane (2000), Schwartz *et al.* (2002), Schwartz (2004).

Maximizing or satisficing behavioral traits have been linked to a variety of influences, including personality measures, gender differences, and the economic environment one grows up in, see for example Iyengar and Lepper (2000) and Schwartz (2004). This article adds to the literature by testing several other related test variables, including peer effects, religious intensity, locus of control, and a measure of happiness. Adding these additional variables yields the testable model below:

$$\text{Maximization} = a_0 + a_1(\text{Gender}) + a_2(\text{Age}) + a_3(\text{Marriage}) + a_4(\text{Income}) + a_5(\text{Religious Intensity}) + a_6(\text{Peer Effect}) + a_7(\text{LOC}) + a_8(\text{Happiness}) + e_i, \quad (7)$$

where Gender and Marriage are dummy variables taking the value of unity when an individual responds that they are female and married, respectively. Age and Income is the respondent's age and income level. Religious Intensity is the number of times an individual indicates they go to religious services in a given month, see Barro and McCleary (2002, 2003). Peer Effect captures the maximizing influence of the respondent's significant other, and is the sum of the same maximization questions from Table 1 as perceived by the survey respondent. LOC is the locus of control variable originally from Rotter (1966). It is a personality measure in that it captures the degree in which an individual believes he/she has control over the outcomes of their life. Lastly, Happiness captures the overall feeling of happiness from the survey respondent, and is the "Satisfaction with Life Scale" originally from Lawrence Erlbaum Associates as reported in Schwartz (2004). For additional details and information about the variables used in this article, see the Data Appendix.

The results from equation (7) are interesting and are reported in the second row of Table 2 below. The first significant result confirms some of the theoretical hypotheses derived above and complement the results of Schwartz *et al.* (2002) that younger males tend to be more maximizing and more prone to depression and social comparison. The OLS results also indicate a significant peer effect in the sample. Peer effects and their significance have been studied in detail by Evans *et al.* (1992), Gaviria and Raphael (2001), and recently by Duarte *et al.* (2007). In the case of this study, the respondent's significant other influences the respondent's behavior toward being maximizing. Past studies also focused on the relationship between maximization and happiness. Schwartz (2004) finds a correlation between maximizing and being unhappy, but suggests that there could be bi-directional correlation as well. This study confirms that hypothesis, and finds a significant relationship between being unhappy in life and maximization behavior. This suggests a need for simultaneous modeling as unhappiness and maximization impact each other. Variables that did not significantly impact maximization were being married, income level, religious intensity, and locus of control. In the next section, a four-equation simultaneous equations model is developed to investigate jointly determined variables.

Table 2
Single Equation Results from Equation (1)
First Equation Results of Simultaneous Model from Equation (2)

	a_0	Gender	Age	Marriage	Income	Religious Intensity	Peer Effect	LOC	Happiness	R ²
OLS	46.374 (7.32)**	-3.078 (-2.20)**	-3.104 (-3.87)**	1.944 (1.12)	0.827 (1.48)	0.021 (0.04)	0.194 (3.23)**	0.146 (0.49)	-2.690 (-3.35)**	0.181
3SLS	61.075 (4.17)**	-8.297 (-2.75)**	-3.990 (-1.83)*	1.133 (0.30)	-1.182 (-0.47)	-0.875 (-1.18)	0.160 (2.54)**	3.858 (1.86)*	-6.624 (-6.32)**	0.285

Notes: Figures in parentheses are *t*-statistics. ** indicates significant at the 95% level, and * at the 90% level.

THE SIMULTANEOUS EQUATION MODEL

As stated in the previous section, the variables in this study may be jointly determined. As a result, the estimates from single-equation model (7) may have been biased by simultaneity. Judge *et al.* (1988) points out that economic data are often generated by systems of relations, and that these relations give rise to statistical inference problems due to the feedback system. To alleviate the problem of a feedback from left-hand side variables to right-hand side variables, a simultaneous equations model (SEM) is specified and applied in this paper.

Each equation within a simultaneous system may have endogenous or exogenous (i.e. predetermined) variables. Endogenous variables values are determined by through “joint interaction” with other variables in the system, while exogenous variables values are determined outside the system. With regards to a complete simultaneous system, Judge *et al.* (1988, pp. 602) state, “The system of equations is *complete* if there are as many equations as there are endogenous variables.” Besides the dependent variable (Maximization), this paper controls for three additional endogenous variables (Income, Happiness, and LOC). Gender, Age, Marriage, Religious Intensity, and Peer Effects are considered exogenous variables. Consequently three additional equations need to be built to create the *complete* four-equation simultaneous system.

The first endogenous variable in equation (8) is income. Researchers have reported a tendency for countries with high per capita incomes to have more choice and be more maximizing, see Table 1 and Myers and Marty (2000) and Lane (2000). At the same time, maximization may enhance income levels. Schwartz (2007) found that maximizers obtained jobs that paid 20 percent more on average than the satisficer counterpart for a large cross-section. Several other variables are added to the income channel including, gender (Gender), class rank (e.g. Class is the human capital proxy for our survey), and a marriage dummy (Marriage). This study follows the work of Barro and McCleary (2003) and Kliesen and Schmid (2004) and includes a religious belief dummy (Religious Belief) in the model. Lastly, locus of control (LOC) has been added as past studies have shown that individuals with external locus of control tendencies have higher incomes, see for example Sumarwan and Hira (1993).

The second endogenous variable is the happiness index or equivalently the “Satisfaction with Life Scale.” There is little doubt that individual happiness is determined by a variety of factors, and these factors are different for each respondent. As a result, this paper tests several standard happiness factors as well as a few additional ones. It is important to note that this paper relies heavily on Blanchflower and Oswald’s (2000) study. They use survey data from the Michigan Survey for the United States and from the Eurobarometer survey for the United Kingdom over the

period 1972-1998 to explain the variations in happiness across different types of people. We apply several determinants that they find to be significant, including gender (Gender), age (Age), marital status (Marriage), and income level (Income). Several studies have shown a direct relationship between religious adherence and happiness. Essentially, this direct relationship can be explained from the close social relations religion can bring, see Blazer and Palmore (1976) as well as the natural stimulation of the brain's temporal lobes (i.e. "God spot") as reported in the seminal work of Ramachandran and Blakelee (1998). Maximization is an independent variable because as Schwartz (2004, pp. 86) states, "...being a maximizer is *correlated* with being unhappy....I believe that being a maximizer does play a causal role in people's unhappiness, and I believe that learning how to satisfice is an important step not only in coping with a world of choice but in a simply enjoying life." Locus of control is the last independent variable. It has been found that individual's who believe they are in control of the direction of their life are happier than those with an external locus, see Rotter (1966).

The last endogenous variable in the SEM is locus of control. The inclusion of locus of control is of particular importance in that it seeks to link social learning theory with happiness and consumer orientation. The bi-directional influences between locus of control, happiness, and maximizing behavior suggest that maximization be included as an independent variable in this equation. Other non-traditional variables include religious intensity and happiness in the rewards of ones effort (Effort). While religious intensity has an ambiguous expected sign, it is hypothesized that those who are most pleased with their efforts will also be those with high internal locus of controls. Other included test variables are gender, age, and income.

From the above discussion, the four-equation simultaneous equation model to be tested is:

$$\text{Maximization} = a_0 + a_1(\text{Gender}) + a_2(\text{Age}) + a_3(\text{Marriage}) + a_4(\text{Income}) + a_5(\text{Religious Intensity}) + a_6(\text{Peer Effect}) + a_7(\text{Happiness}) + a_8(s)$$

$$\text{Income} = b_0 + b_1(\text{Gender}) + b_2(\text{Class}) + b_3(\text{Marriage}) + b_4(\text{Religious Belief}) + b_5(\text{Maximization}) + b_6(\text{LOC})$$

$$\text{Happiness} = c_0 + c_1(\text{Gender}) + c_2(\text{Age}) + c_3(\text{Marriage}) + c_4(\text{Income}) + c_5(\text{Religious Belief}) + c_6(\text{Maximization}) + c_7(\text{LOC}) \quad (8)$$

$$\text{LOC} = d_0 + d_1(\text{Gender}) + d_2(\text{Age}) + d_3(\text{Marriage}) + d_4(\text{Income}) + d_5(\text{Religious Intensity}) + d_6(\text{Maximization}) + d_7(\text{Effort})$$

As Table 2 reports, the three-stage least squares (3SLS) estimates are more significant than the single-equation regression estimates. The only difference between the single-equation and the 3SLS estimates is that LOC is significant at the 90 percent level, indicating that internal locus of control individuals are more maximizing. Again, while not significant, results from Table 2 directionally support hypotheses derived in the model section. The complete 3SLS estimates of model (8) are presented in Table 3 below.

The endogenous equations also yield interesting results. Factors that are significantly and positively associated with higher income are (1) higher class rank,

(2) being married, (3) having no religious adherence, and (4) having an internal locus of control. Maximization had a negative and insignificant impact on income for the sample.

The results for the second endogenous equation indicate that (1) being female, (2) being younger, (3) and having an internal locus of control are significantly associated with higher life satisfaction. Maximization had a negative but insignificant effect on happiness.

The last endogenous variable is locus of control. The results indicate that (1) being female, (2) being younger, and (3) being happy with the fruits of their efforts are associated with external locus of control behavior. Again, maximization is not a significant variable, but it does have a negative influence on being externally controlled.

Table 3
3SLS Simultaneous-Equation Results

Dependent Variable	Independent Variable	Coefficient Value	t-statistic
	a ₀	61.075	(4.17)**
	Gender	-8.297	(-2.75)**
	Age	-3.990	(-1.83)*
	Marriage	1.133	(0.30)
	Income	-1.182	(-0.47)
	Religious Intensity	-0.875	(-1.18)
	Peer Effect	0.160	(2.54)**
	LOC	3.858	(2.54)**
	Happiness	-6.624	(-6.32)**
Income	b ₀	8.494	(4.44)**
	Gender	-0.006	(-0.03)
	Class	0.293	(3.04)**
	Marriage	1.627	(7.93)**
	Religious Belief	-0.631	(-2.00)**
	Maximization	-0.031	(-0.99)
	LOC	-0.274	(-2.36)**
Happiness	c ₀	-3.074	(-1.06)
	Gender	0.562	(2.17)**
	Age	-0.596	(-3.12)**
	Marriage	0.073	(0.13)
	Income	0.058	(0.19)
	Religious Belief	-0.012	(-0.05)
	Maximization	-0.031	(-0.80)
	LOC	-0.591	(-4.39)**
LOC	d ₀	5.572	(1.26)
	Gender	0.877	(2.46)**
	Age	-0.717	(-2.16)**
	Marriage	0.119	(0.14)
	Income	0.015	(0.03)
	Religious Intensity	-0.103	(-1.60)
	Maximization	-0.031	(-0.52)
	Effort	0.964	(5.34)**

Notes: Figures in parentheses are *t*-statistics. ** indicates significant at the 95% level, and * at the 90% level. Bold and italicized coefficients are first-differenced.

CONCLUSION AND REMAINING ISSUES

The results presented in this paper are an important first step toward focusing the discussion on what causes maximizing/satisficing behavior rather than how will maximizers and satisficers differ in their behavior. Results in Table 2 show how viewing correlations rather than considering causation can lead to bias. The OLS equation is less significant and some of the coefficients switched sign (though they were insignificant in both regressions) when compared to the simultaneous equation estimation (3SLS).

Empirical results weakly support the theoretical model, and suggest that other factors may be included in further theoretical analysis. Focusing on the 3SLS results indicate that young males, with a more internal LOC, who view themselves as being rather unhappy, and who view their peers as being more maximizing than satisficing, are more likely to be oriented toward the maximizing end of the scale. Some of the results are consistent with previous studies; however the unique specification of how LOC affects maximizing/satisficing behavior is new to the literature. This affectively links social learning theory with consumer orientation: consumers who view themselves as being in control of their destiny tend to be geared toward maximizing behavior.

A useful next step would be to include non-traditional economic parameters in the formal model of consumer's placement on the maximizing/satisficing continuum. The present study offers guidance to which variables would be most important to include. However, the insignificant results are directionally consistent with the theoretical model and should be included in further analysis. One interesting result should be reiterated: those with greater earned income will devote less time to maximizing while those with greater unearned income will devote more time to maximizing. Married couples are more likely to have access to unearned income (income generated from their spouse) and therefore are more likely to be on the maximizing end of the spectrum. Controlling for this, increased income will have a negative effect on maximizing behavior.

REFERENCES

- Banbury, C. and W. Mitchell. 1995. "The Effect of Introducing Important Incremental Innovations on Market Share and Business Survival." *Strategic Management Journal* 16 (Special Issue): 161-182.
- Barro, Robert J. and Rachel M. McCleary. 2002. "Religion and Political Economy in an International Panel." *NBER Working Paper*, No. 8931, May.
- Barro, Robert J. and Rachel M. McCleary. 2003. "Religion and Economic Growth across Countries." *American Sociological Review* 68 (5): 760-781.
- Blazer, Dan and Erdman Palmore. 1976. "Religion and Aging in a Longitudinal Panel." *Gerontologist* 16 (1): 82-85.
- Blanchflower, David G. and Andrew J. Oswald. 2000. "Well-Being Over Time in Britain and the USA." *NBER Working Paper*, No. w7487, January.
- Brenner, L., Rottenstreich, Y., and S. Sood. 1999. "Comparison, Grouping, and Preference." *Psychological Science* 10 (3): 225-229.
- Browning, G., A. Halcli, and F. Webster. 2000. *Understanding Contemporary Society: Theories of the Present*. Thousand Oaks, CA: Sage Publications.
- Chaney, P., and T. Devinney. 1992. "New Product Innovations and Stock Price Performance." *Journal of Business Finance & Accounting* 19 (5): 677-695.

- Duarte, Rosa, Jose-Julian, Escario, and Jose-Alberto Molina. 2007. "Peer Effects, Unobserved Factors and Risk Behaviours: An Analysis of Alcohol Abuse and Truancy among Adolescents." *IZA Discussion Paper* No. 2589. January.
- Evans, William N., Oates, Wallace E. and Robert M. Schwab. 1992. "Measuring Peer Group Effects: As Study of Teenage Behavior." *Journal of Political Economy* 100 (5): 966-992.
- Gaviria, Alejandro and Steven Raphael. 2001. "School-Based Peer Effects and Juvenile Behavior." *Review of Economics and Statistics* 83 (2): 257-268.
- Homans, G. 1961. *Social Behaviour: Its Elementary Forms*. London: Routledge.
- Innovation & Business Architectures. 2004. "The Class in Mass – New Packaged Goods in 2003." (http://www.biz-architect.com/consumer_products.htm), accessed on 17 July 2008.
- Iyengar, S. and M. Lepper. 2000. "When Choice is Demotivating: Can One Desire Too Much of a Good Thing?" *Journal of Personality and Social Psychology* 79 (6): 995-1006.
- Judge, George G., Hill, R. Carter, Griffiths, William E., Lutkepohl, Hermut, and Tsoung-Chao Lee. 1988. *Introduction to the Theory and Practice of Econometrics*, Second Edition, New York, New York: John Wiley & Sons.
- Kevin L. Kliesen and Frank A. Schmid. 2004. "Fear of Hell Might Fire Up Economy." *Regional Economist*, St. Louis Federal Reserve Bank, July.
- Lane, R.E. 2000. *The Loss of Happiness in Market Democracies*, New Haven, CT: Yale University Press.
- Myers, David G. and Martin E. Marty. 2000. *American Paradox: Spiritual Hunger in an Age of Plenty*, New Haven, CT: Yale University Press.
- Ramachandran, Vilayanur S. and Sandra Blakelee. 1998. *Phantoms in the Brain: Probing the Mysteries of the Human Mind*, New York: Harper Perennial.
- Rotter, Julian B. 1966. "Generalized Expectations for Internal Versus External Control of Reinforcement." *Psychological Monographs* 80 (1): 1-28.
- Schoonhoven, C., Eisenhardt, K., and K. Lyman. 1990. "Speeding Products to Market: Waiting Time to First Product Introduction in New Firms." *Administrative Science Quarterly* 35 (1): 177-207.
- Schwartz, Barry *et al.* 2002. "Maximizing Versus Satisficing: Happiness is a Matter of Choice." *Journal of Personality and Social Psychology* 83 (5): 1178-1197.
- Schwartz, Barry. 2004. *The Paradox of Choice: Why More is Less*. New York, NY: Harper Perennial.
- Schwartz, Barry. 2007. "Doing Better but Feeling Worse: Looking for the "Best" Job Undermines Satisfaction" *Psychological Science* 17 (2): 143-150.
- Sumarwan, Ujang and Tahira K. Hira. 1993. "The Effects of Perceived Locus of Control and Perceived Income Adequacy on Satisfaction with Financial Status of Rural Households" *Journal of Family and Economic Issues* 14 (4): 343-364.
- Terpstra, David E. and Elizabeth J. Rozell. 1993. "The Influence of Personality and Demographic Variables on Ethical Decisions Related to Insider Trading." *Journal of Psychology* 127 (4): 375-390.

COMPARATIVE STATICS APPENDIX

We perform simple comparative statics analysis by taking the partials of m from equation (6) with respect to the exogenous parameters. It is straightforward to sign the effect for 5 of 6 of the parameters. Those results are displayed first:

$$(A1) \quad \frac{\partial m}{\partial \alpha} = -\frac{\beta(Tw + \phi G)}{\phi(\alpha + 2\beta)^2 w} < 0,$$

$$(A2) \quad \frac{\partial m}{\partial \beta} = \frac{\alpha(Tw + \phi G)}{\phi(\alpha + 2\beta)^2 w} > 0,$$

$$(A3) \quad \frac{\partial m}{\partial \phi} = \frac{(\alpha + \beta)T}{\phi^2(\alpha + 2\beta)} > 0,$$

$$(A4) \quad \frac{\partial m}{\partial G} = \frac{G}{(\alpha + 2\beta)w} > 0,$$

$$(A5) \quad \frac{\partial m}{\partial w} = -\frac{\beta G}{(\alpha + 2\beta)w} < 0.$$

The partial with respect to available time, $\frac{\partial m}{\partial T} = \phi(\alpha + 2\beta) - \alpha - \beta$, is not signable since ϕ is bound by 0 and 1 by assumption. However, it is positive as long as

$$(A6) \quad \phi > \frac{\alpha + \beta}{\alpha + 2\beta}$$

which states that an agent will devote more effort to maximizing when more time is available as long as the potential benefit to maximizing is large enough. Implications of (A1) – (A6) are discussed further in the model section.

DATA APPENDIX

Variable	Definition
Maximization	Sum of the thirteen maximization questions from Schwartz <i>et al.</i> (2002). See Table 1 for questions and descriptive statistics.
Gender	Dummy variable taking the value of unity for female.
Age	Survey respondent's age.
Marriage	Dummy variable taking the value of unity for married.
Income	Income level of respondent.
Religious Intensity	Religious intensity is the number of times an individual participates in religious services in a given month, see Terpstra and Rozell (1993) and Barro and McCleary (2002, 2003).
Peer Effect	Sum of the thirteen maximization questions from Schwartz <i>et al.</i> (2002) for the respondent's significant other.
LOC	Locus of control comes originally from Rotter (1966) and is the average of thirteen questions regarding the degree in which an individual believes he/she has control over the outcomes of their life. Higher scores are associated with a higher external locus.
Happiness	A 1 to 5 Likert scale which describes how happy the respondent feels at present. Question taken from "Satisfaction with Life Scale" from Lawrence Erlbaum Associates. Higher values are associated with a higher degree of happiness.
Religious Belief	Dummy variable taking the value of unity for respondent indicating they have some religious preference.
Effort	A 1 to 5 Likert scale which describes how happy an individual is with the fruits of their effort. Higher values are associated with a higher degree of happiness from one's effort.

