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***HUMAN CAPITAL INVESTMENTS IN EDUCATION AND HOME STABILITY:  
Exploring Education, Homeownership and Poverty***

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In the best of times, investments in human capital in the form of spending on education are successful when students arrive at school from stable homes. Yet a recent report released by *First Focus* (Lovell and Isaacs, 2008), reveals that the home stability of an estimated two million children is being affected by the sub-prime mortgage crisis as their families face foreclosures. In addition, the report shows that these children are more likely to experience excessive mobility and, as a result, are only half as likely to be proficient in reading as their peers. Moreover, children forced from their homes experience behavioral problems such as increases in violence. They are also much more likely to be held back and eventually drop out of school.

This study offers an innovative way of capturing the benefits of homeownership on children's educational outcomes. The paper draws on the results of earlier research (Castillo, Ferraro, Jordan and Petrie) that looked at children's time preferences as an important component of educational outcomes by using economic experiments to measure how children view the future. In particular, the study investigated the relationships between time preferences and child demographics using a discount rate

experiment with middle school students in a Georgia school district. Time preferences provide a measure for child patience---the less patient the student is with respect to forgoing immediate benefits for larger benefits in the future, the more likely he or she is to refrain from investing in school.

How these time preferences are formed remains unresolved ---what are the factors that might cause impatient or irrational choices? ***Thus, this paper tests a hypothesis that students who face housing uncertainties through mortgage foreclosures and eviction learn impatient behavior and are therefore at greater risk of dropping out of school, impeding human capital formation and community development..***

To address this particular question we incorporate the results of a parent survey which covers family housing situation --whether homeowner or renter, their demographic characteristics (i.e., income, education, debt load, assets, net worth, gender, race, age, marital status, number of children, tenure at work) and behavioral characteristics (risk tolerance, confidence). The survey was administered to the parents of the eighth grade students for which experiment data exists

The setting for this project is a county in Georgia, located on the southern end of the Atlanta MSA. Although part of the vibrant metropolitan area of Atlanta, demographic data on the county resembles less the exponential growth of the Atlanta area and more the persistently poor counties of South Georgia. In 2000, per capita income was \$4,957 less than the State's average and unemployment was 6.8%, or 24% higher than the average. Thirty-two percent of persons over 25 have not completed high school in 2000 — over 50 percent higher than for all of Georgia. And, less than half (46.8%) of the class of 2001 ninth graders graduated (this rate is 71.1% in Georgia), and the rate among black males was even lower.

In terms of housing, this county is classified as on the Georgia's 'housing stressed' counties by the UGA Housing and Demographics Research Center (Tinsley, 2005). Further, city that is the county seat has chosen as a key initiative in the coming years the issue of community housing and neighborhood revitalization. The elimination of substandard housing and the reduction in the high home renter rate are city priorities. The poorer neighborhoods of the nation face the major issues of poverty and lack of homeownership, that affect their financial well being as well as the formation of their social and human capital. Even though these issues of homeownership and poverty alleviation have been well documented in the past (Gyourko & Linneman, 1997; Inc, 2003; Marcuse, 1989), little has been done to explore ways that can alleviate poverty through sustainable homeownership in a neighborhood, without the displacement of its existing inhabitants. While lack of homeownership and poverty alleviation are important issues facing the nation as well as the state of Georgia, nowhere is it more prominent than in this city. In the city and its surrounding areas a vast majority of households rent out apartments. A significant portion of these renters pay out as much as 30% or more of their monthly income for rent.

This paper will report on the results of a survey instrument that incorporates a study of the respondents' housing preferences --whether homeowner or renter, their demographic characteristics (i.e., income, education, debt load, assets, net worth, gender, race, age, marital status, number of children, tenure at work) and behavioral characteristics (risk tolerance, confidence). The survey will be administered to the parents of the eighth grade students for which experiment data exists.

## ***2. Background Information***

Much relevant recent literature has focused on conditions under which children are raised and the potential consequences of these contextual factors for a variety of outcomes in later life.<sup>1</sup> Of particular importance for this study is emerging research that examines the effects of the homeownership status of a family during child-rearing periods. Although there is a considerable literature on the private and social benefits of homeownership for such things as community participation, life satisfaction, home maintenance, and accumulation of wealth (McCarthy, Van Zandt, and Rohe 2001; Rohe, McCarthy, and Van Zandt 2000; Rossi and Weber 1996), only a few studies have attempted to link any of these effects to later outcomes for children. The work of Green and White (1997); Boehm and Schlottman (1999); Aaronson (2000); Boyle (2002); Harkness and Newman (2002, 2003); Haurin, Parcel, and Haurin (2002a, 2002b); Haurin, Dietz, and Weinberg (2003); and Kauppinen (2004) suggests that homeownership status matters for children, although it is usually not clear whether the effect is an independent one or is commingled with residential stability or neighborhood conditions, or both.

In particular, Green and White (1997) find a strong statistical correlation between homeownership and the likelihood of dropping out of school or becoming pregnant. Yet a reasonable interpretation of their result is that of omitted variable bias. Clearly, homeowners are different from renters along a variety of dimensions. As a result, those factors that are latent in their work, such as parental skills, interest in the educational process, wealth, and family stability, potentially bias upward any homeownership effect. While the authors claim that their results are robust to parametric self-selection

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<sup>1</sup>Following studies offer comprehensive reviews of such literature: Earls and Carlson 2001; Ellen and Turner 2003; Galster 2005; Leventhal and Brooks-Gunn 2000; Robert 1999; Sampson, Morenoff, and Gannon-Rowley 2002)

corrections, these techniques require assumptions about the selection equation that are difficult to defend. However, beyond pure selection, there are several mechanisms that suggest that this could be a causal relationship. Most plausibly, homeowners have a large financial stake in their community and therefore may invest more in neighborhood and school capital.

In addition, DiPasquale and Glaeser (1998) have modeled the different incentives faced by owners and renters. Their key insight is that landlord's recoup any community-specific investment that is made by renters, while homeowners are able to internalize the future returns to these investments because they accrue as increases in the value of their home. Therefore, homeowners have a much stronger incentive to participate in the growth of neighborhood capital. In fact, DiPasquale and Glaeser find that homeownership has a causal effect on community investment. As investment in a community grows, it is possible that educational outcomes will improve, perhaps providing the missing link in the neighborhood effects literature. On the other hand, time and money committed to neighborhood and housing investment might be offset by reduced input into family-specific investments that have a more direct payoff to children's outcomes. For example, Currie and Yelowitz (2000) argue that public housing has a positive effect on school retention because subsidized housing allows money to be directed to other family needs.

An alternative but related mechanism works through family residential stability. Several recent papers, including Hanushek, Kain and Rivkin (1999), Astone and McLanahan (1991), and Haveman, Wolfe, and Spaulding (1991) explore the impact of family or school mobility on student achievement. They argue that residential mobility

might be causal if it leads to a loss of social capital in the form of less information and attachment to the school system, teachers, and peers.

The most convincing evidence is presented in Hanushek, Kain, and Rivkin, who, using individual fixed effect models, find that residential or school moving has a significant negative impact on student achievement, particularly for minorities, low income families and students in schools with high turnover. Thus the homeownership effect may be the result of additional family and school stability offered to students who do not have to switch schools or peer groups. Moreover, Aaronson (2000) revisits this issue and finds that parental homeownership in low-income neighborhood has a positive impact on high school graduation. But he cautions that some of the positive effects might rise due to the greater neighborhood stability (less residential movements) and not necessarily to homeownership alone.

All of the above mentioned studies examine the direct effect of homeownership on child outcomes. We approach this issue from a different perspective. It is well known that children deal with inter-temporal problems, such as investment in education, in different ways depending on their time preferences. Thus, we propose that if time preferences or the perceived benefits of patience are formed in early childhood the home stability might be a contributing factor to the formation of those. Becker and Mulligan (1997) suggest that the evolution of time preferences can be considered endogenous. In another words, observed differences in preferences cannot be taken as evidence of innate differences. Unfortunately, little is known about the nature of children's time preferences.

### ***3. Child Time Preference and Economic Experiments***

Little economics research exists to document the magnitude of students' discount rates and the factors that affect them. Working paper by Harbaugh and Krause (1998)

explores discount rates among children. Harbaugh and Krause propose a method to study very young children in a “tooth-fairy” game in which children can receive compensation for waiting an extra day to get money from the tooth-fairy. Indeed, there is very little economic research that examines whether younger children are even capable of making rational inter-temporal choices. However, discount rates and inter-temporal choice have received a great deal of attention from economists for many years. For example, Samuelson (1937) introduced the use of a single discount rate to summarize inter-temporal choice reflecting the underlying psychological assumptions of patience (i.e., the tradeoffs of choice over time). Other economists have linked patience to important outcomes such as consumption, savings, interest rates, income, and employment (e.g., Becker and Mulligan 1997; Bowles, Gintis and Osborne, 2001a and 2001b; see Frederick, Loewenstein and O’Donoghue, 2002 for a review). As noted by Castillo, et al. (2008), in the economics literature, four methods have been used to estimate discount rates among adults; three are revealed preference methods (e.g., Ausubel, 1991; Gately, 1980; Hartman and Doane, 1986; Hausman, 1979; Ruderman et al., 1986; Warner and Pleeter, 2001; Holcomb and Nelson, 1992; Pender, 1996; Coller and Williams; 1999; Harrison et al., 2002; Eckel et al., 2003; Meier and Sprenger, 2006; Bettinger and Slonim, 2007). Stated preference methods, in which discount rates are elicited by asking individuals to make hypothetical choices in the revealed preference settings described above, are also used (Thaler, 1981; Loewenstein, 1988; Benzion et al., 1989; Shelley, 1993; Curtis 2002; Bradford et al. 2004).

Given the potential sources of bias inherent in stated preference methods, and the difficulty in observing the consumption and investment decisions of children, Castillo, et al. used a controlled experiment. Psychologists, and more recently, economists, have used



experiments to study time preferences among children. However, these studies look at the factors that affect “patience,” which is defined as a binary choice to forgo short-term benefits for larger and longer-term rewards. None of the studies explicitly define and characterize discount rates. To do this, the front-end delay method used by Harrison et al. (2002) was adopted.

In the experiment, students are asked to make twenty decisions. For each decision, students are asked if they would prefer \$49 one month from now or  $\$49 + \$X$  six months from now. The amount of money,  $\$X$ , is strictly positive and increases over the twenty decisions. The decision sheet that the subject sees is shown in Table 1 without the last column indicating the implied annual discount rate.

To administer the experiment, the subjects are divided into classrooms, so there are roughly 25 subjects in each room. In each room, subjects are assigned a unique identification code. This code is private, and subjects do not know the identification codes of other subjects. Subjects make their decisions by circling one amount, either \$49 or  $\$49 + \$X$ , on their decision sheet. After subjects make their decisions, each subject puts his decision sheet in an envelope and the envelopes are collected. All the envelopes are shuffled in front of the subjects, and four envelopes per room are chosen for payment. The identification codes of these chosen subjects are written on the blackboard. Because identification codes are kept private by each subject, no subject knows the identity of the subjects chosen to receive payment.

One decision out of the twenty decisions is randomly chosen for payment. This is done by taking 20 index cards with the numbers 1-20 written on them, shuffling them in front of the subjects, and asking a subject to choose one card. The number on the card is the decision number to be paid for each of the four subjects who are chosen to receive

payment. So, for example, if decision number 15 is chosen for payment, and a winning subject had circled \$83.03 for this decision, then the subject would receive \$83.03 six months from now. If another subject circled \$49, that subject would receive \$49 on one month from now.

Subjects who are chosen to receive payment are paid with a Wal-Mart gift card by the school principal on the specific date for the decision chosen. The school principal keeps the Wal-Mart gift cards in her office and the names of the subjects who are chosen for payment. Within a week of the experiment, the subject is asked to stop by the principal's office to verify winning the gift card. On the date of payment, the subject is invited to come privately to the principal's office on or within a week of the date to pick up the gift card. For the subjects chosen to be paid, their names and the amount of payment are kept private. Subjects knew all of these procedures before making their decisions.

Economic theories of discounting predict that an individual faced with the decision sheet in Table 1 would either choose (a) \$49 for all decisions, (b) the higher payment for all decisions, or (c) \$49 for a certain number of decisions starting with Decision 1 and then switch to the higher payment for the remaining decisions. In other words, if an individual chose to receive \$Y in seven months rather than \$49 in one month, then the individual will prefer any amount  $\$Z > \$Y$  in seven months rather than \$49 in one month. Following Harrison et al. (2002), we call these individuals "consistent" decision-makers (Bettinger and Slonim called them "rational").

However, in experiments using decision sheets like the one in Table 1, some individuals are "inconsistent" decision-makers: they choose \$Y in seven months rather than \$49 in one month, but then choose \$49 in one month rather than  $\$Z > \$Y$  in seven months. Harrison et al. (2002) and Meier and Sprenger (2006) found that 4% and 11%, respectively,

of their adult subjects were inconsistent in their choices. Bettinger and Slonim (2007), whose subjects were between 5 and 16 years old, found that 34% of their sample were inconsistent decision-makers. A method to deal with inconsistent decision-makers is described below.

The experiments were conducted with 8<sup>th</sup> graders at two middle schools. Nationally, 35 percent of students who drop-out of school do so between the ninth and tenth grades. Thus, it is in that transition from middle to high school (beginning in eighth grade) that the impatience of students may be most relevant for educational outcomes.

#### ***4. Experiment Results***

Table 2 shows descriptive statistics for the population of students in the experiment. Forty-seven percent of the subjects are male and 40.2% are Black. Almost 60% of the children receive free or reduced price lunch and 21.5% are part of a special education program. According to their 7th grade aptitude test, 21.1% of the children do not satisfy the math requirement for their grade and 13.7% do not satisfy the reading requirements.

Table 2 also shows the proportion of kids that make at least one inconsistent decision in the experiment. Sixty-seven percent of the subjects make consistent decisions and less than 10 percent make five or more inconsistent decisions. The distribution of inconsistent behavior is not distributed randomly. Black subjects are more likely to behave inconsistently. Gifted children are the least likely to make inconsistent decisions, and children with reading deficiencies are the most likely to make inconsistent decisions, followed by children with math deficiencies. Table 3 presents the distribution of discount rates for all the subjects and only for subjects that answered consistently. The discount rate of inconsistent subjects is estimated by finding the distribution of choices that is consistent and minimizes the total amount of money that would have to be spent to adjust their behavior. Let  $x_{ij}$  be the amount of money child  $i$  chooses from menu  $j$  and let  $X$  be

the set of all possible consistent patterns of behavior. Our estimates for inconsistent

children are based on the  $\hat{x}$  such that  $\hat{x} = \arg \min_{x \in X} \sum_j |x_{ij} - x_j|$ .

### **5. Family Survey**

After conducting the experiments among the eighth graders in the two middle schools, they were asked to take a family survey home to be filled out by their parent or guardian (table 4). The short (20 questions) survey was designed to explore some of the factors that may have an impact on children's time preferences. These included the relationship of adults in the household to the student, birth order, educational and employment status of the parent or guardian, expectations of higher education, existence of government assistance and child support, and proxy questions regarding financial management. Seven of the twenty questions were about the housing conditions of the family. These housing questions are used in the analysis for this paper.

Just over one-third of the students lived in a household where over four person live. Most (86%) live in a house and 70% are owned by someone in the household. Only 8% of the families had received government assistance for housing. Half of the respondents said their house has 3 bedrooms, and 41% have more. Seventy-six percent of the students had moved either once or not at all in the past five years and only 8% had ever been evicted. Overall, the housing situation of these students appears stable.

### **6. Results**

In this paper we use the probit model of probability of being impatient:

$$\text{Prob}(Y) = X'b + H'c + S'd + \varepsilon$$

Where Y is a dummy variable which is constructed by using student impatience as measured by the experimental discount rate, X is a set of family characteristics posited to affect student impatience and, H is a vector of housing characteristics also hypothesized

to affect the time preference of students,  $S$  is a set of student characteristics, and  $b$ ,  $c$ , and  $d$  are coefficients, and  $\varepsilon$  is the stochastic error component. We use a probit model with the discount rate equal to 0 if the computed discount rate is under .8 and 1 if it is over .8. We use .8 as the midpoint in calculated discount rates over the 20 decisions as shown in table 1. The  $X'$  vector of family characteristics include if both parents live in the household, if the student has an older or younger sibling, if the parent has more than a high school education, if the parent is employed, if the parent expects the student to attend college, if the family receives child support, if they receive government assistance, and if they use short-term financial tools such as check-cashing services, car title companies, pawnshops or pay-day loan services. The  $H'$  vector of housing characteristics include if there are four or less people in the house, if the family lives in a single-family house, if they own the house, if the house has 3 or more bedrooms, if they did not move in the last five years, if they received government housing assistance in the past, and if they had ever been evicted. The  $S'$  vector is a set of student characteristics including gender, race, income (whether the student is on a free or reduced lunch) instructional setting (regular education, special education, gifted, remedial), standardized test scores in math and reading, number of discipline referrals, and number of absences. Table 5 shows the expected relationships between student discount rates and the explanatory variables. A negative relationship means the variable contributes to a more patient student and a positive relationship shows those variables that may cause more impatience in a student. We expect that a student living in a household with both parents, where at least one has more than a high school education, is employed and expects the child to attend college would create a situation where the student is patient, or less impatient. We also expect the existence of an older sibling would affect patience. Although a family receiving child

support suggests a single-parent household, we expect a negative effect on impatience since child support adds to family income and at least in a minimal sense suggests both parents are involved in the life of the child. We expect families that receive government assistance or use short-term financial tools will have a positive effect on impatience.

In terms of the housing characteristics, we expect that a child living in a less crowded house that is owned by the family and has three or more bedrooms would have a negative effect on the student's discount rate, along with the fact that the family has not moved in the last five years. If the family receives government housing assistance or has been evicted from a home in the past is expected to have positive effect on child discount rates. We have no a priori assumptions on the expected relationships between discount rate and student characteristics.

Of the 208 students for which there is experiment data, 165 returned the family survey. The results of the full probit regression (Table 6) show that the explanatory variables that were significant and negative included that both parents live at home and they lived in a single-family dwelling. These variables had the effect of reducing the child's discount rate. The variables that were significant and positive included household size of five and whether the family had ever been evicted from a home, thus increasing child impatience. All of these were of the expected sign. All other variables in the full model were insignificant. None of the variables that related to the student's school performance or situation were significant. We also ran separate probit regressions for student, housing and family characteristics. Each of the four variables above remained significant and of the correct sign. For student characteristics, being a nonwhite male increased the discount rate and having 6-10 absences also increased the discount rate. For the housing characteristics, the only additional variable that became

significant (and negative) when run separately was house size of five bedrooms. For family characteristics, having either younger or older siblings as well as receiving child support was also significant and negative.

### ***7. Discussion and Conclusion***

The reality of today's housing market crises seems to confront the findings of several studies that look into the benefits of homeownership. These studies propose that the main arguments for homeownership are not primarily economic, but social. For example, homeownership benefits society because it encourages stable, more law-abiding communities; it makes people more likely to vote in local elections and join clubs; and it benefits future generations because the children of homeowners do better at school and have fewer behavioral problems than children of renters (Green and White, 1997; DiPasquale and Glaeser, 1998; Hanushek, Kain and Rivkin, 1999). In general, research supports the view that homeownership and stable housing bring substantial social benefits. Some even argue that because of these extensive social benefits government assistance and subsidies for the housing industry are well justified.

However, studies that examine social benefits of homeownership on children outcomes are required to account for a strong correlation between homeownership with parental incomes, education, age, marital status, and several other factors. Therefore, a strong correlation between homeownership and social outcome variables may merely be superfluous in that the correlation is simply capturing the impact of higher income, education, and the like. To isolate the impact solely attributable to homeownership and/or stable housing, it is important to control for factors that are generally present with homeownership (like higher income and older age). Policy makers will only then better

appreciate the challenges of encouraging and promoting people into homeownership and providing stable housing.

In this paper we began with the hypothesis that students who face housing uncertainties through mortgage foreclosures and eviction learn impatient behavior and are therefore at greater risk of dropping out of school, impeding human capital formation and community development. To test this hypothesis we incorporated the results of a parent survey which covers the family housing situation and family characteristics with experimental data on the time preferences of 8<sup>th</sup> grade students. We found that large household size and the occurrence of an eviction significantly increases the discount rates of children while living in a single-family home with both parents significantly decreases child discount rates, and thus impatience. In addition nonwhite males and those who are often absent from school also have higher discount rates than others while children who live in large houses, have older and younger siblings as have income generated from child support payments have lower discount rates as exhibited in the experiments.

The negative relationship between housing equity (5 bedroom homes) and living with both parents, and discount rate shows the beneficial effect of the family's financial stability on the time preference of children. Since income shocks may have less damaging consequences for families with greater housing equity, as parents are better able to cope with the family tensions resulting from the temporary financial troubles that the family faces and thus are able to remain together and avoid significant income losses from divorce or separation. The results of this study are consistent with the findings from Zhan and Sherraden (2003) study which find that parental asset ownership improved the educational outcomes for children.



One possible limitation of projects that support homeownership in poor neighborhoods is the danger that these same programs may also encourage some low income households to own homes even though they may not be able to sustain the necessary mortgage payments across time. Extant research shows that a high rate of mortgage default and foreclosure has a detrimental effect on the property values and the social capital of the neighborhood (Immergluck and Smith, 2004). However, pre- and post-purchase counseling of at risk homeowners can reduce foreclosure and default rates in a neighborhood significantly (Quercia, Cowan, and Moreno, 2004). Hence, for successful gentrification of a neighborhood without the displacement, it is necessary to identify the determining characteristics of at risk homeowners, who may need counseling before and after purchase in order to sustain their homeownership.

*Tables*

**Table 1: Subject Decision Sheet**  
 (The last column of implied annual discount rates was not shown to subjects)

<b>Decision</b>	<b>Paid one month from now</b>	<b>Paid seven months from now</b>	<b>Implied Annual Discount Rate</b>
1	\$49.00	\$50.83	7.35%
2	\$49.00	\$52.71	14.7%
3	\$49.00	\$54.66	22.05%
4	\$49.00	\$56.66	29.40%
5	\$49.00	\$58.72	36.75%
6	\$49.00	\$60.85	44.10%
7	\$49.00	\$63.04	51.45%
8	\$49.00	\$65.29	58.80%
9	\$49.00	\$67.61	66.15%
10	\$49.00	\$70.00	73.50%
11	\$49.00	\$72.46	80.25%
12	\$49.00	\$74.99	88.20%
13	\$49.00	\$77.59	95.55%
14	\$49.00	\$80.27	102.90%
15	\$49.00	\$83.03	110.25%
16	\$49.00	\$85.86	117.60%
17	\$49.00	\$88.78	124.95%
18	\$49.00	\$91.77	132.30%
19	\$49.00	\$94.85	139.65%
20	\$49.00	\$98.02	147.00%

**Table 2. Descriptive Statistics**

<b>Variable</b>	<b>Mean (s.e.)</b>	<b>% Inconsistent Choices (s.e.)</b>	<b>Number</b>
Age	13.8 (0.2)		563
Male	47.5%	0.31 (0.03)	274
Female	52.6%	0.35 (0.03)	303
Black	40.2%	0.45 (0.03)	232
White	54.4%	0.26 (0.03)	314
Black Males	17.0%	0.42 (0.05)	98
Black Females	23.2%	0.47 (0.04)	134
White Males	28.9%	0.25 (0.03)	167
White Females	25.5%	0.27 (0.04)	147
Free & Reduced Lunch	59.8%	0.39 (0.03)	345
Special Education	21.5%	0.04 (0.04)	124
Gifted	10.8%	0.16 (0.05)	62
Poor Math	21.1%	0.45 (0.05)	115
Poor Reading	13.7%	0.48 (0.06)	75
7 <sup>th</sup> Grade Discipline (number)	1.8 (0.1)		547

**Table 3. Distribution of Preferences**

<b>Discount Rate (d.r.)</b>	<b>Frequency (percent)</b>	
	<b>Full sample</b>	<b>Consistent</b>
d.r. $\leq$ 20	69 (11.9)	55 (14.2)
20 < d.r. $\leq$ 40	51 (8.8)	31 (8.0)
40 < d.r. $\leq$ 60	97 (16.7)	79 (20.4)
60 < d.r. $\leq$ 80	84 (14.5)	67 (17.3)
80 < d.r. $\leq$ 100	74 (12.7)	49 (12.6)
100 < d.r. $\leq$ 120	34 (5.9)	20 (5.2)
120 < d.r. $\leq$ 140	65 (11.2)	28 (7.2)
d.r. > 140	107 (18.4)	59 (15.2)
Total	581	388

**Table 4. UGA FAMILY SURVEY N=208**

1. What is your relationship to the student?
  - a. Mother 79%
  - b. Father 14%
  - c. Male non-parent guardian 0.5%
  - d. Female non-parent guardian 6%
  
2. Are the student's parents living in the household?
  - a. Mother 32%
  - b. Father 6
  - c. Both 56
  - d. Neither 6
  
3. What is your marital status?
  - a. Single 15%
  - b. Married 69
  - c. Widowed 3
  - d. Separated 4
  - e. Divorced 8
  
4. How many younger brothers or sisters does the student have (including step-siblings not living in home)?
 

Mean = 1.24 (STD = 1.7, Max = 10)
  
5. How many older brothers or sisters does the student have (including step-siblings not living in home)?
 

Mean = 1.4 (STD = 1.4, Max = 7)
  
6. What is your highest level of education?
 

a. Less than High School		10%
b. High School graduate	25	
c. Some College	26	
d. College graduate		25
e. Some graduate or professional school		6
f. Post-graduate degree	8	
  
7. Are you currently employed?
  - a. Full-time 69%
  - b. Part-time 13
  - c. Retired 1
  - d. Disability 4
  - e. Not employed 13

8. How many persons live in the household?
- |                |    |
|----------------|----|
| a. 2           | 5% |
| b. 3           | 20 |
| c. 4           | 42 |
| d. 5           | 19 |
| e. More than 6 | 15 |
9. What type of housing does your family live in now?
- |                             |     |
|-----------------------------|-----|
| a. House                    | 86% |
| b. condominium or townhouse | 0.5 |
| c. apartment                | 7   |
| d. mobile/manufactured home | 6   |
10. Is your housing
- |  |     |
|--|-----|
| a. Owned by you or someone in the household? | 70% |
| b. Rented?                                   | 28  |
| c. Rented with government assistance?        | 2   |
11. Before you moved into your current house, had you received government assistance for housing in the past?
- |        |    |
|--------|----|
| a. Yes | 8% |
| b. No  | 92 |
12. How many bedrooms are in your residence?
- |                |    |
|----------------|----|
| c. 1-2         | 7% |
| d. 3           | 51 |
| e. 4           | 31 |
| f. 5           | 4  |
| g. More than 5 | 6  |
13. How many times has the student moved in the past five years?
- |                    |     |
|--------------------|-----|
| a. 0               | 51% |
| b. 1               | 26  |
| c. 2               | 13  |
| d. 3 or more times | 10  |
14. Have you ever been evicted from a previous residence or lost a mortgage?
- |        |    |
|--------|----|
| a. Yes | 8% |
| b. No  | 92 |
15. Do you think the student will go to college?
- |              |     |
|--------------|-----|
| a. Yes       | 90% |
| b. No        | 1   |
| c. Uncertain | 9   |

16. How many years has the child lived at the current address?
- All his/her life 19%
  - Mean = 4.6 (STD = 306, Max = 14) years = 81%
17. Do you receive TANF, food stamps, or any other form of government assistance (besides housing)?
- Yes 17%
  - No 83
18. Do you receive child support for the student?
- Yes 18%
  - No 68
  - not applicable 14
19. Have you ever used the services of a check-cashing service?
- Yes 36%
  - No 64
20. If you have ever taken out a loan, from where did you take it (circle all that apply):
- Never have taken out a loan 16%
  - Friend or family 21
  - Government loan program 7
  - Bank 60
  - Credit card on which interest was paid 24
  - Car title company 14
  - Pawn Shop 4
  - Pay-day loan service 6
  - Other private lender (individual or firm) 20

**Table 5. Expected Relationships of Dependent and Independent Variables**

Family Variables	Expected relationship
Both parents in household	negative
If have older sibling	negative
If parent/guardian has more than high school education	negative
If parent/guardian is employed	negative
If parent/guardian has expectation of college for student	negative
If family receives child support	negative
If family receives government assistance	positive
If family uses short-term financial services	positive
Housing Variables	
If four or less persons live in the house	negative
If family lives in a single-family home	negative
If they own the home	negative
If house has three or more bedrooms	negative
If family did not move in last five years	negative
If family received government housing assistance	positive
If family had ever been evicted	positive

**Table 6. Probit Results**

<i>Student Characteristics</i>	<b>Coefficient</b>
Female	.14
Nonwhite	-.38
Low income	.53
Special education student	-.53
Gifted	.39
Math poor	-.18
Reading poor	-1.18
Nonwhite male	.54 (s*)
2-5 discipline referrals	-.77
6+ discipline referrals	-.28
6-10 absences	.51 (s**)
11+ absences	.04
<b><i>Housing Characteristics</i></b>	
Household size 3	.92
Household size 4	1.11
Household size 5	1.86 **
Household size 6+	1.04
Live in single-family house	-.80 *
Own home	.43
Receive housing assistance	.19
3 bedrooms	-.49
4 bedrooms	-.79
5 bedrooms	-.96 (h**)
6+ bedrooms	.11
Moved once in past 5 years	-.57
Moved twice in past 5 years	-.03
Moved 3+ in past 5 years	-.13
Been evicted	1.73 **
Years at current address	-.08
<b><i>Family Characteristics</i></b>	
Parents Married	.61
Both parents in home	-.98 *
Have younger sibling	-.45 (f*)
Have older sibling	-.51 (f**)
Parent finished high school	.48
Parent attended college	.38
Parent has college degree	-.47
Parent attended grad. school	-.51
Parent finished grad. school	-.14
Parent employed	.06
Parent expects child to attend college	-.10
Parent receives government assistance	.13
Parent received child support	-.80 (f**)



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