Work and adolescence in the United States:

Understanding the role of work among high school students and dropouts

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INTRODUCTION

Part-time work during adolescence has been part of the American way of life for decades. Many believe it teaches responsibility, provides pocket money and keeps youth out of trouble. But does work do more than that? The participation of youth in work, as well as extra-curricular activities, is a result of decisions that the child and parents make about how the child should best utilize his or her time. Human capital is composed of the abilities, skills, and knowledge acquired by individuals and plays an important role in their future occupational attainment and earnings (Becker 1975). While education as a source of human capital has been shown to play an important role in future occupational placement and success, employment during adolescence has received less attention. Since these events can occur simultaneously during adolescence, similar factors are likely determining these activities. This paper proposes a theory about the role of early employment during adolescence and tests this conceptual model using a nationally representative data of American adolescents.

I propose that along with the structure of the educational system and labor market, together with their own personal circumstances and future goals, parents and youth formulate a human capital investment strategy that prioritizes the youth's time and activities. For some youth, early employment complements their schooling with both activities enhancing their skills and life chances (Ruhm 1997) or enables them to save for post-secondary education (Marsh 1991), while others choose not to work and save their energies for school (Steel 1991). Among youth that are either not getting good grades or do not aspire for post-secondary training, work may provide them with an option outside of school (Tienda and Stier 1996). For high school dropouts, work may represent an alternative means for acquiring skills and training that they can translate into future jobs (Tienda and Ahituv 1996) or it could be their last link to a formal institution before they completely disengage from society. Other youth choose not work or attend school, having lost faith that either environment can provide them with opportunities and skills (Ogbu 1986).

Partly, as a consequence of the variation in family and school life, work patterns may vary by ethnicity, immigrant status[1], and school standing[2]. It is important to study the early stages of human capital accumulation because investments in children affect how they are positioned in

[1] Generational status is defined as whether the adolescent is a first, second or third generation immigrant to the United States.
[2] School standing implies whether the adolescent is attending high school or has dropped out.

the adult labor market, which has important implications for their health and well being (Newman 2000; Tienda and Stier 1996; Wilson 1987). For instance, as youth enter adulthood, employment during high school may provide some of them with skills and work experience that may be the difference between obtaining (and keeping) a job or remaining unemployed.

The research on youth and work is published in two separate literatures. One addresses students while the other focuses on high school dropouts. The following section reviews both literatures and proposes that the two populations can be examined together under one framework.

Evolution of the student worker

Greenberger and Steinberg (1986) contend that the massive entry of high school students into the workforce after World War II is a phenomenon that stems from historical, economic, and political changes in the post-industrial U.S. For much of the country's history, youth employment and education were mutually exclusive activities (Committee on the Health and Safety Implications of Child Labor 1998). In the late 1700s, children as young as 7 or 8 worked outside the home to supplement the family's earnings. "Adolescence" was a privilege only of the rich (Greenberger and Steinberg 1986). Children and adolescents worked in agriculture or apprenticed and only attended school during non-work hours (Kett 1977). In the late 19th century, most working class urban families depended on older children for financial support and younger ones for household assistance (Zelizer 1985).

By the early 20th century, children began being regarded as objects that had sentimental or religious meaning and "regardless of social class, belonged in a domesticated, non-productive world of lessons, games and token money" (Zelizer 1985: 11). The differentiation between acceptable and "good" forms of child labor is the result of this societal shift. It was evident in how parents began assigning their children household chores as an educational "character building" experience rather than as a real contribution to the household economy.

Two movements: one for child labor protection and another for universal and free education emerged. Federal legislation was enacted in 1938, The Fair Labor Standards Act, that continues to regulate child labor now. The Act places limits on the types and hours of non-agricultural work permitted for children under 18. In 1900 the minimum age to leave school was 14 years and 5 months. By the 1930s, it had increased to 16 (Wrigley 1986). An effect of the

laws was a decrease in full time youth employment with a simultaneous increase in school enrollment (Rumberger 1983). In 1900, less than 10 percent of 18-year olds completed high school whereas 70 percent of males and 35 percent of females between ages 14 and 19 worked full time (Greenberger and Steinberg 1986). By 1950, however, the youth employment figures decreased to 40 percent and 25 percent respectively while the percentage of adolescents who stayed to complete high school rose from less than 10 percent to over 50 percent between 1900 and 1940 (Greenberger and Steinberg 1986).

The *simultaneous* roles of student and part-time worker became more evident after World War II. In 1947, 27 percent of enrolled boys between the ages of 16 and 17 also worked. By 1980, the proportion was 44 percent (Greenberger and Steinberg 1986). Recently, more than half (57 percent) of 14 year olds and nearly two-thirds (64 percent) of 15 year olds participated in some work activity in 1996 (NSLY 1997).[3] Twenty-eight percent of 14- through 16-year olds worked both during the school and summer months (NSLY 1997).

The relatively high prevalence of student workers can be partly attributed to how the labor market and the educational system in the country are structured. The integration of youth in the market economy was possible because the United States has a highly developed service sector that can use a part-time labor force (Greenberger and Steinberg 1986). The rapid growth of the retail and service sectors resulted in new jobs that specifically attract youth: short-term commitments, minimum skills and experience requirements, and flexible hours.

A more flexible and less demanding educational system also encourages the simultaneous roles of student and part-time worker. American students put in less time for homework compared to youth in other industrialized countries and, hence, have more free time to use for other activities (Greenberger and Steinberg 1986). Although a number of youth proceed directly to college, many decide to postpone further education or to pursue opportunities in the labor market (Smith et al. 1997). For those who do not do well in high school but are interested in post-secondary education, open enrollment is available in some universities, which do not penalize poor high school performance (Greenberger and Steinberg 1986). Thus, there does not seem to be one specific path to follow in the U.S. (Brinton 1988; Breen and Goldthorpe 1997). Brinton (1988) argues that Americans are not typically trained or channeled into a

[3] Note, however, that employment levels vary across demographic characteristics. For instance, historically, a larger percentage of European American youth worked relative to Latinos and African Americans (Ahituv, Tienda and Hotz 1997; Cain and Finnie 1990; Steel 1991).

specific career early in life. Instead, there is a diversity of opportunity structures and pathways available. Other industrialized countries place more emphasis on educational preparation for future occupations (Shavit and Muller 1998). Students have longer school days, more homework and a demanding curriculum (Committee on the Health and Safety Implications of Child Labor 1998; Greenberger and Steinberg 1986). The link between educational achievement and economic attainment is more clearly evident in Japan and Korea, for instance (Lee and Brinton 1996; Modell 1994; Rosenbaum and Kariya 1991). Brinton (1990, 1993) documented the rigid educational structure in Japan that consists of schedules and performance expectations at every age that translate directly into clearly defined career paths. Lee and Brinton (1996) found a similar system in Korea. Among industrialized European countries that encourage vocational work as a substitute to post-secondary education such as Germany, Austria, Denmark and Switzerland, there is a more coordinated process that transitions a student to a worker through an apprenticeship system (Committee on the Health and Safety Implications of Child Labor 1998).

The American educational and economic institutions that create an environment conducive to part-time work are also supported by social norms that encourage work. The Protestant work ethic has been transformed into a contemporary secular form that emphasizes hard work, getting ahead and financial success, which is strongly promoted by the state (Greenberger and Steinberg 1986; Phillips and Sandstrom 1990; Yamoor and Mortimer 1990). The rhetoric contained in the 1996 Welfare Reform Bill makes this explicit (Astone 1998; Blank 1997). Greenberger and Steinberg (1986) emphasize the pervasive norm that regards early employment as fostering personal and social responsibility that helps prepare youth for adulthood. These social sentiments resulted in government commissioned task forces that called for the early integration of youth in the labor force while still in school (Greenberger and Steinberg 1986; Mortimer, Shanahan and Ryu 1994; Ruhm 1997; Steel 1991). These programs assumed that working during high school would improve socialization to work roles, advance educational performance, cultivate skill retention and enhance post-secondary educational and occupational attainment (Steel 1991; Ruhm 1997; Tienda and Ahituv 1996).

Departure from high school before graduation

An important reason for the government's focus on youth employment is the interest in youth that are at-risk for dropping out of high school (Steel 1991; Tienda and Ahituv 1996). The political sentiment is that it was crucial for disadvantaged urban youth to acquire valuable work

experience since their employability and work prospects have declined (Mare 1995; Steel 1991; Tienda and Ahituv 1996; Wetzel 1995). In the 1970s, the incidence of youth unemployment, particularly among disadvantaged minority youth increased (Tienda and Ahituv 1996). This resulted in the creation of several commissions and taskforces (discussed above) that advocated for work experience to help smooth the transition from youth to adulthood (Steel 1991). Furthermore, the industrial restructuring of the American economy that began in the 1980s has led to changes in labor market demand for workers (Blank 1997; Mare 1995; Wetzel 1995). Since the 1980s poorly educated workers have had a harder time and take a longer time finding stable jobs than those who are better educated (Mare 1995). The overall economic expansion continues to favor the more educated worker, with at least a high school diploma – or better (Mare 1995).

Although the high school dropout rate is declining, ethnic disparities remain (Ensminger and Slusarcick 1992; Mare 1995, Tienda and Ahituv 1996). Graduation rates for African-, Asian-, and European-Americans are either increasing or continuing at stable (and high) rates while the trends for Latino and Native American youth remain low (Kominski 1990; Mare 1995; Steinberg 1993; Tienda and Ahituv 1995; Tienda and Stier 1996). The decision to drop out of high school seems to reflect the culmination of a long-term process of disengagement from school and academic failure, with family context and school experiences playing important roles (Astone and McLanahan 1994; Rumberger 1983; Steinberg 1993; Alexander, Entwisle and Horsey 1997).

Youth employment has been linked to drop out status. One set of evidence suggests that it is not merely the presence of a job but rather the type and intensity of the job that actually interferes with schooling (Steinberg and Cauffman 1995; Tienda and Ahituv 1996). Other findings suggest differently: early employment does not cause students to dropout, rather, school disengagement precedes labor force participation (Entwisle, Alexander, Olson and Ross 1999; Entwisle, Alexander and Olson 2000; Mortimer, Shanahan, and Ryu 1994). The direction of the relationship has not been definitively confirmed in the literature (D'Amico 1984; Marsh 1991; McNeal 1997; Ruhm 1997).

Studies about work among teenage high school dropouts explore the role of similar determinants as studies of in-school youth, namely, the school environment, family background and structure, peer influence, neighborhood conditions, and the youth's characteristics

(Alexander, Entwisle and Horsey 1997; Astone and McClanahan 1994; Ensminger and Slusarcick 1992; McNeal 1995; Rumberger 1983; Rumberger, et al. 1990). This suggests that the employment behavior of both in- and out-of school youth can be examined under one conceptual framework. Both groups of adolescents are exposed to similar environments but it is how these conditions and experiences differentially affect them that result in the variation in behavior and outcomes. I argue that in response to economic and educational conditions as well as their life experiences, youth and parents consider different strategies and combinations of work and school that will meet their overall goals for investment in young people's human capital.

Early employment and human capital

Youth employment is seldom perceived in the literature as a source of human capital but rather as a factor that affects current and future schooling and work. Rarely is it examined as a means of human capital investment *in and of itself*. Research has primarily focused on investments in education because it is expected to contribute the most to future earnings (Sweetland 1996). Yet, investment in human capital can take different forms including "schooling, on-the-job training, medical care, migration, and searching for information about prices and incomes" (Becker 1975:9). Employers rely on credentials and work experience when selecting future workers to determine their level of productivity and trainability (Newman 2000; Tienda and Stier 1996). Thus, apart from the amount or type of schooling obtained, early work experience also provides employers with information about the individual's skills and abilities that may be useful in the selection process (Steel 1991).

Research about early employment often focuses on its negative consequences, particularly the "possible breakdown of human capital investment mainly because of the negative association between hours worked and grades" (Mortimer and Johnson 1998: 433; Marsh 1991; Mortimer and Finch 1986). Studies continue to find a negative association between work and youth well being (Resnick et al. 1997; Mortimer, Shanahan and Ryu 1994; Mortimer et al. 1990; Shanahan, Finch, Mortimer and Ryu 1991). The negative consequences of work extend to family relationships (Manning 1990), future enrollment and economic attainment (Marsh 1991; Mihalic and Eliot 1997).

The reasons for why youth work are perceived to be mainly for personal consumption and (some) savings (Greenberger and Steinberg 1986; Johnston, Bachman and O'Malley 1982;

U.S. Department of Education 1996). One reason for youth employment is “kid-flation”. A basket of 15 goods purchased by children cost 38 percent more in 1980 than it did in 1970 (Greenberger and Steinberg 1986). Second, allowances have stayed flat over the years with parents giving the same amount of money to all their children, without adjusting for time (Miller and Yung 1990; Rothbart 1981). Third, casual jobs like baby-sitting and newspaper delivery have not kept pace with inflation. Finally, youth have developed a taste for luxury goods (similar to their parents) and need supplementary income to consume them (Coleman 1994; Greenberger and Steinberg 1986). Eighty percent of high school seniors reported that none or very little of their earnings went towards family or household expenses (U.S. Department of Education 1996). More were spent on car payments, clothing, stereo, records, movies, recreation, hobbies, and some for college savings (Johnston, Bachman and O’Malley 1982; Greenberger and Steinberg 1986; Ruscoe, Morgan and Peebles 1996; Marsh 1991). Manning (1990) found that only eight percent of working teens contributed to family expenditures but this portion significantly increased with the number of hours worked.

There is growing evidence, however, that suggests part-time work results in the accumulation of resources and skills that facilitate future attainment (Mortimer and Johnson 1998) without detracting from educational human capital investment (Ruhm 1997). Moreover, the juggling of the student-worker role develops many skills that are useful in the short and long run (Mortimer and Johnson 1998). In particular, work experience acquired during high school has a positive effect on later employment in terms of labor force participation and income (Carr, Wright and Brody 1996; Meyer and Wise 1982; Ruhm 1997; Steel 1991).

In addition, early work experience can be perceived as building alternative sources of human capital. For students who choose to postpone or not to pursue post-secondary schooling, the human capital they acquire from working at earlier ages may help compensate for their lack of educational training (Entwisle et al. 1999; Steel 1991;Tienda and Stier 1996). Examining longitudinal data of Baltimore adolescents ages 13 to 18, Entwisle, Alexander and Olson (2000) found that economically disadvantaged youth with poor academic performance are more likely to have semi-skilled jobs (e.g., clerical, sales and craft) at ages 13 and 14. This suggests that adolescents who are not doing well in school may be looking for other avenues outside of

school to acquire skills and training. Similarly, youth with semi-skilled jobs at age 13 are more likely to hold a similar job at ages 15 to 17.[4]

Studying a nationally representative sample of youth in the NLSY, Steel (1991) found that early employment seems to be compatible with continued enrollment among European American adolescents who work moderate hours. On the other hand, Steel documented that among youth that worked close to full-time, the importance of school diminished, suggesting that the values and attitudes placed on early work experience might not necessarily be congruent with continued enrollment. Similarly, McNeal (1997) concluded that working does not necessarily foster dropping out but the characteristics of the job and the intensity of the work (measured in hours) might be influencing the decision to drop out (Marsh 1991; Tienda and Ahituv 1996). Conversely, Tienda and Ahituv (1996) also found that work helps the school retention rates of at-risk youth.

These data suggest that work may mean something different or serve a different purpose, depending on the needs of the adolescents and their families. Early work experience seems to serve as additional source of human capital investment that operates differently across individuals. For those who have good prospects of attending college immediately after high school, it may be quite unimportant. For those who do not have good prospects of acquiring higher education, however, it may be perceived as a central form of human capital investment.

DETERMINANTS

I propose that the work-school status of an adolescent is primarily determined through a human capital investment strategy that involves the expectations[5] of both the adolescent and his or her parent(s). These expectations are themselves determined by the characteristics of the youth and their family. The conceptual model (Figure 1) is adapted from the human capital development system developed by Brinton (1990, 1993). One of the innovations of the model is its inclusiveness. It will allow for the examination of the outcome for all youth of high school age. This includes the spectrum from students who do not work to part-time student workers, high school dropouts who work and high school dropouts who are not working. I decided to include high school dropouts in the analysis because the four categories of work-school combinations

[4] Note, however, that by age 17, students with better academic records are more likely to hold the semi-skilled jobs.

[5] Expectation is often interchanged with aspiration although there is a distinction between the two, as documented by Sugland (1992). In deference to the author, I will cite the term they used.

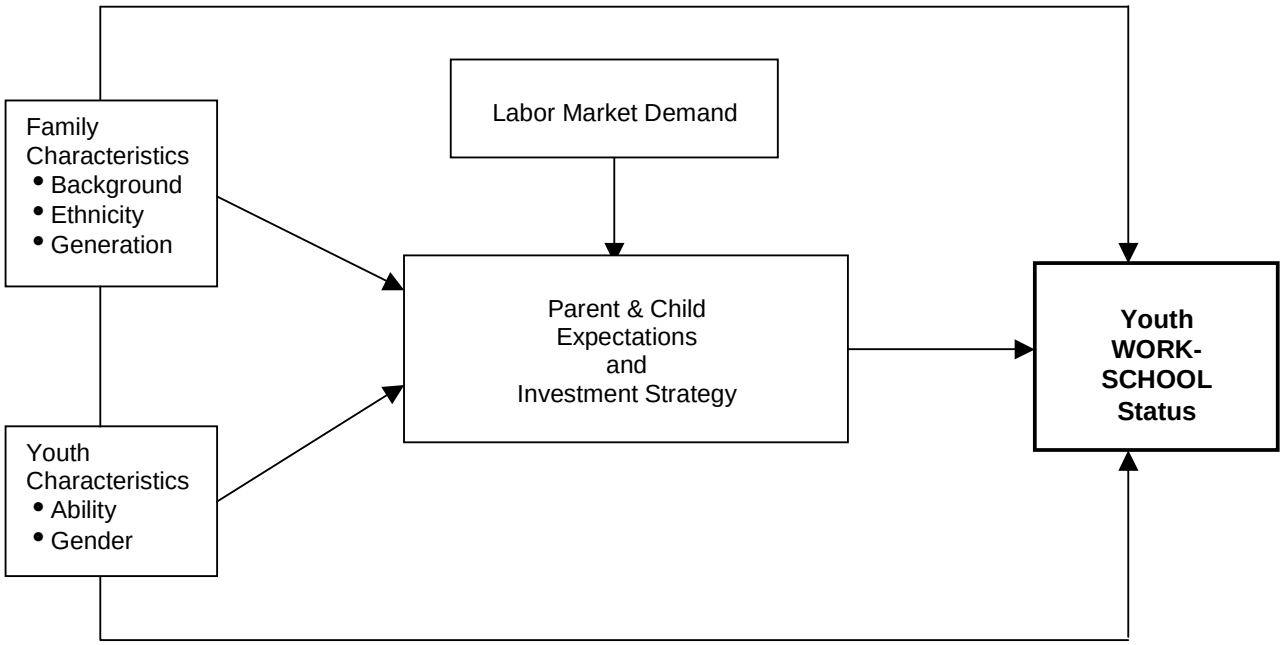
reflect the range of possible conditions. Other studies on youth employment separate in-school youth from out-of-school but in this situation, analyzing them together is useful for identifying the patterns of investment and how that affects work-school outcomes.

A second innovation of this model is the inclusion of immigration status and ethnicity to the framework. Brinton originally applied her framework to homogenous populations, such as Japan and Korea. The inclusion of the immigrant and ethnic components is useful because they add another dimension to the framework. For instance, examining the sample by these components may help shed some light on the variation in employment patterns across these groups and how expectations and investment strategies play out in these communities. For instance, the high dropout rate in Latino communities, particularly among Mexican youth, suggests that these youth are not doing something productive with their time but this may not be the case. Examining these youth by employment status may provide some insights about how these youth and their families perceive employment, in addition to education.

The framework is also innovative because the investment strategy is an outcome of individual rational choice within a larger socio-economic context. Brinton's human capital development system is composed of two dimensions: (1) the relationship of the educational system to the labor market, and (2) the structure of the family's intergenerational exchange (1990: 310). Brinton argues that these two dimensions interact, and social actors are assumed to make rational choices about the investments they are making in time, emotion, education and training resources based on the expected payoffs anticipated (Brinton 1990, 1993). Brinton suggests that the actions of parents and youth are not only based on the understanding of their own circumstances but also how they perceive their lives fit in and are affected by the environment outside the home. The value that parents place on education is dependent on their own experience in the labor market and how they think their children will fare (Brinton 1990; 1993). For instance, working class families view higher education more guardedly, "in their case, other, less ambitious – and less costly -- educational options would be adequate to the goal of maintaining class stability, while also providing quite good chances of some eventual degree of upward movement" (Breen and Goldthorpe 1997: 495). On the other hand, higher income families foster education because it serves to maintain the competitive edge they have in the labor market (Breen and Goldthorpe 1997). Hence, the investment strategy that families formulate for children are determined by both the expectations of adolescent and parent(s) that

are in turn affected by multiple determinants and socio-demographic variables – as well as the larger socio-economic context under which they live.

Figure 1: Conceptual model



Outcome: Work-School Status

The work-school outcome variable covers the range of decisions possible in the framework for both in-school and out-of-school youth. It is a polytomous variable with the following categories: (1) student worker; (2) working dropout; (3) non-working student; (4) non-working dropout.

Parent-child investment strategy

The investment strategy has two theoretical dimensions: work and school. The combination that emerges is reflected in the resources invested by the parents and the child. *Parental investment in work* is evident in both what they say and do. Many parents believe in the work ethic that they strongly foster in their children by discussing the value of work and their experiences in the labor market (Greenberger and Steinberg 1986; Phillips and Sandstrom 1990; Rees and Gray 1982). In addition, parents back-up their words with action by assisting their children in the job search by providing contacts through their own professional network or through relatives and friends (Rees and Gray 1982; Rosenbaum, DeLuca, Miller and Roy 1999). Their support is also reflected in their willingness to re-distribute household chores and arrange transportation based on their child's work schedule (Phillips and Sandstrom 1990). The

adolescent's investment in work is reflected in their willingness to forgo other activities (or manage their time more efficiently) in exchange for work such as time with friends and family, attention to school, and participation in extra-curricular activities. The investment that youth place on work also includes time they put in searching for a job, discussing work plans with different people, and taking vocational courses. Once they find a job, investment in work includes securing good evaluations from their supervisors, attending training to enhance their skills, and applying for positions with more responsibility. Similarly, *parental investments in education* are reflected in both words and deeds: the time they put in helping with schoolwork, discussing academic plans with their children, and saving for post-secondary education. The *youth's level of investment (in education)* can include the time they allocate for homework, maintaining a particular grade point average and taking particular courses for advance placement.

Parental expectations

The investment strategy of parents is related to the educational and occupational expectations they have for their children. The preference for a particular path that a child should take is due to the "tendency for families to reproduce in their offspring not only a consciousness tailored to the objective nature of the work world, but to prepare them for economic positions roughly comparable to their own. Although these tendencies can be countered by other social forces (schooling, media, shifts in aggregate occupational structure), they continue to account for a significant part of the observed intergenerational status-transmission process" (Bowles and Gintis 1976: 143; Willis 1977). Thus, parental expectations for the child are shaped by the parent's perception of their own opportunity structure and the abilities and skills they need to pursue them.

Furthermore, parental aspirations are tempered by how they think they children will be received by the educational and work environments (Brinton 1990, 1993). For instance, Greenhalgh (1985) documented how East Asian[6] girls were socialized into filiality and family indebtedness that resulted in their early entry into the labor force instead of continued schooling. Their earnings were used by the parents for household expenditures and for their brother(s)' further education. This investment strategy was based on the parents' perception of discrimination against girls in the labor market. Similarly, Brinton (1993, 1990) found a gender-gap in human capital investment as a result of Japanese parents' perception that the labor market and

[6] Korean, Japanese, Chinese – including Hong Kong and Taiwan

educational system discriminates against girls. It was more prudent to invest in sons who could provide them with old age support.

Youth expectations

Also involved in the investment strategy are the expectations of youth. Although adolescents continue to rely on their family for financial, social and emotional support, older youth are beginning to develop their own decision-making skills (Steinberg 1993). They are learning to weigh the gains and losses associated with the options available to them and make choices based on the constraints and limitations they perceive (Haveman and Wolfe 1995). Although, youth aspirations can be shaped by multiple intersecting factors such as parents, peers, schools and neighborhoods (Bronfebrenner 1979), the strongest influence remains the family (Brewster 1994; Kerckhoff 1984). In particular, youth aspirations are influenced by family characteristics as well as parental aspirations (Davies and Kandel 1981; Hao and Bonstead-Bruns 1998; Miller and Brown 1992; Modell 1994) in addition to their own individual attributes.

Labor Market Demand

An important component of the conceptual framework of this paper is the labor market demand for youth workers. I argue that knowledge about the local labor market drives how families strategize about the adolescent's employment chances – not only if she or he can work in the area, but also where they can work, what they will do (and learn), and the potential wage. Changes in the minimum wage, for instance, have been shown to affect both youth employment and enrollment (Neumark and Washer 1995; Wellington 1991).

Family background

Family background shapes the expectations and investments of the child and the parent(s). In addition to the strong and significant influence of parental expectations on youth expectations, research documents the relationship between family background and youth expectations (Fejgin 1995; Kao 1995; Kao and Tienda 1998; Mare 1995; Miller and Brown 1992). Family background includes the socio-economic status of the family, family structure, and the level of schooling completed by the parents and their occupational attainment.

In addition, the effect of family background on work-school status operates in two more ways: indirectly through parental expectations and directly on the outcome. Parental aspirations for their children are motivated by their class position (Sewell, Haller and Portes 1969; Kerchoff

1984). Breen and Goldthorpe (1997: 283) argue that "families in both classes [working class and salaried/professional class] seek to ensure, as far as they can, that their children acquire a class position at least as advantageous as that from which they originate or, in other words, they seek to avoid downward social mobility". Why parents differ in their aspirations stem from not only their socio-economic status but also from the kind of job they have (Bowles and Gintis 1976; Breen and Goldthorpe 1997; Willis 1977). Work conditions of the parents affect their work values that they in turn transfer to their children (Kohn and Schooler 1983; Ryu and Mortimer 1996).

The outcome (work-school status) is also *directly* affected by the family's socio-economic status. A large majority of parents encourage their children to work for "character building" reasons. Parental support stems from the desire to instill independence in their children. Phillips and Sandstrom (1990) found that relatively wealthy, native born European American parents were more likely to instill the work ethic in their children that encouraged them to work at earlier ages. Parents perceived that work led to "welcome changes in their children's behaviors and personalities", in family interactions and school attitudes (Phillips and Sandstrom1990: 181).

Low-income families may have other reasons for encouraging work. Entwisle, Alexander and Olson (2000) determined that economically disadvantaged youth work to help support the household or pay for their educational expenses. Among 17 year olds, 58 percent from lower income families contributed some portion of their earnings to family support compared to only 15 percent of youth from higher income households.[7] Entwisle, Alexander and Olson (2000) also found that adolescents from poorer families worked significantly more hours than those from better-off families – at every age from 13 to 17. Mortimer and Johnson (1998) reported that youth employed at low intensity jobs have higher parental education and family income than those in high intensity jobs. Moreover, according to the U.S. General Accounting Office (1991), youth from low-income families work in more hazardous jobs: 20 percent of 15 to 17 year olds from low-income families worked in agriculture, mining, manufacturing, construction and wholesale trade, compared to 14 percent from high-income families.

Ethnicity

In addition to family background, another factor that affects expectations and investments is the family's ethnicity which is thought to represent a cultural perspective that includes a value on

[7] This is a localized sample of youth from Baltimore schools.

education (Fejgin 1995; Kao and Tienda 1998). Specifically, certain cultures are perceived as valuing education more than others for various reasons. For instance, Fejgin (1995: 20) suggests that the "Jewish tradition is heavily concentrated in learning that Torah and other religious scholarly scripts …this supplementary education should not be seen not only as a factor that contributes to Jewish identity, but as an enrichment program that probably supports other types of learning and socializes youth to the value of study." Similarly, Kao and Tienda (1998: 356) discuss that "unlike Asians' valuation of education …Mexican American values do not promote education … [and] that Mexicans' present orientation as well as their fatalistic and family-centered values are less compatible with achievement orientations than future and individual-centered values, which are presumably more prevalent among Anglos." Compared to African-, European- and Latino American youth, Asian Americans, overall, report higher academic expectations and achievement (Goyette and Xie 1999; Kao 1995; Kao and Tienda 1998). Although Asian Americans are often perceived as the "model minority" because of their seemingly high academic achievement, growing evidence suggest that not all students of Asian-descent are doing well. Among the subgroups, Chinese students consistently report higher academic expectations and achievement (Hao and Bonstead-Bruns 1998; Kao 1995). In addition to large group analysis, sub-groups will also be analyzed since variation across specific ethnicities has been documented for health and social behaviors, in addition to academic performance (Goyette and Xie 1999; Hao and Bonstead-Bruns 1998; Kao 1995; Harris forthcoming).

Furthermore, what are often observed, in simple bivariate tabulations, to be ethnic differences in the patterns of employment during adolescence, are due at least in part, to differences in social class, generation and educational expectations. Nevertheless, it is possible that, even when these are held constant, some ethnic differences will persist (Fejgin 1995; Goyette and Xie 1999; Kao 1995; Kao and Tienda 1995; Portes and MacLeod 1996). In this regard, it is notable that existing ethnographic accounts emphasize these mediating variables.

Generational status

Another family characteristic that can affect expectations and investments is generational status, i.e., if a family is a first, second or third generation immigrant. Among some immigrant groups, working while in school may not be an investment priority because some immigrant families regard academic achievement during high school to be the best path to a stable and successful economic future (Fuligni 1997; Kao and Tienda 1995; Hao and Bonstead-Bruns

1998; Portes and MacLeod 1996). Given this goal, working during high school may be perceived by immigrant parents as a distraction, but this may vary by generation. Although first generation parents may emphasize investment in education exclusively, Census data indicate that more second-generation youth are working while in school (Jensen and Chitose 1996).

Generation may also have another effect on the outcome that is mediated by socio-economic status. Among the recent arrivals who work, the motivation could be more socio-economic because they are working longer hours than native-born and immigrants who have lived in the United States longer (Jensen and Chitose 1996). Another scenario could be that immigrant adolescents from low-income households whose parents may not have the resources to invest in education, will choose to invest in labor skills instead.

Gender

Parental and youth expectations and investments can also be influenced by the child's gender. The effect of gender may be linked to the level and types of support children are expected to provide their parents. For instance, Hernandez (1983) documented in the Puerto Rican community he studied that sons are expected to provide financial support while daughters ran the household and/or married and had children. Newman (2000) found similar beliefs in other Latino immigrant communities in New York City. The different expectations from the family may affect the labor force and academic participation of these youth and the family's level of investment. Other studies (Gibson 1991: 369; Tienda and Stier 1996) found that some girls of Mexican-descent in America were "handicapped by family and community role expectations" that prevented them from pursuing post-secondary education or their occupational goals -- as were Sikh immigrant girls (Gibson 1991).

Similar to socio-economic status, gender also has a direct effect on the outcome of work-school status. Male adolescents are more likely to work during the school year than female youth (Mortimer et al. 1990; Ruhm 1997; Entwisle et al. 1999; Yamoor and Mortimer 1990). More male teens work during the summer months (NSLY 1999). However, there seems to be a convergence in their work patterns, particularly at older ages (Mortimer et al. 1990; Ruhm 1997). Among employed youth, gender disparity in the amount of hours worked is minimal (NSLY 1999; Yamoor and Mortimer 1990). More boys work in the formal sector (in business or other formal organizational settings) and girls are employed more often in the informal sector (such as baby-sitting or yard work) -- with occupational sex segregation and wage disparities

continuing at higher ages (D'Amico 1984; Entwisle et al. 1999; McNeal 1997; Mortimer, Shanahan and Ryu 1994; NLSY 1999; Yamoor and Mortimer 1990).

Ability

The expectations and the investments of both adolescent and parent are also influenced by the child's mental ability, typically represented by scholastic history and standardized testing performance. Although the relationship between mental ability, expectations and achievement has been well-documented, it remains unclear how much of mental ability is genetic and how much is affected and changed by socialization and family background (Duncan 1968; Kerchoff 1984; Sewell, Haller and Portes 1969; Steinberg 1993). Although the effects of ability on expectations continue to be debated, I contend that measured differences in ability should affect educational expectations. For instance, children with high educational expectations are unlikely to work because of their primary focus on school.

DATA

National Educational Longitudinal Study of 1988 [8]

The data for the proposed research come from the National Educational Longitudinal Study of 1988 (NELS: 88). NELS: 88 is the third phase in a series of national longitudinal studies conducted by the National Center for Education Statistics and collected by the National Opinion Research Center (NORC) for the Department of Education. It was preceded by the National Longitudinal Study of the High School Class of 1972 and the High School and Beyond Study that began in 1980. NELS: 88 is a longitudinal study of eighth graders beginning in 1988 who were followed at two-year intervals between 1988 and 1994.[9]

The original sample was selected through a two-stage stratified probability design. The schools were selected from a universe of 40,000 public and private eighth grade schools across the United States. The first stage yielded a sample of 1,057 public and private schools. In the second stage, 24,599 students were sampled. The data from the baseline and the following three waves are publicly available.

The purpose of NELS: 88 is to provide a baseline assessment of school experience and relate this to current academic achievement and to later achievement in school and in life. To

[8] The information about NELS: 88 was taken from the following sources: Spencer 1990; Ingels et al. 1992a; Ingels 1992b; Ingels 1994; NCES 1999.
[9] The fourth follow-up is currently in the field.

document a comprehensive picture of student life, NELS: 88 has four components. First, there are data on admissions, academic policies, school climate and teacher-student composition from the school principal and teachers. Second, there is information on the focal student from two teachers. Third, students completed a self-administered questionnaire and a set of standardized cognitive exams that were administered by NORC. Fourth, a parent or guardian of each focal student was interviewed.

Sample size

For the proposed study, I needed information obtained at baseline from both students and parents. Table 1 provides information on how the sample used for the proposed study compares to the full NELS: 88 sample. There were 24,599 students interviewed at baseline. The first step in selecting a working sample was to choose youth who were: (1) interviewed at baseline; (2) had a matching parent questionnaire at baseline (22,651); and (3) had valid data on generational status (21,784). To select a working sample for the 1990 analysis, I began with these 21,784 respondents at baseline. From this sub-sample, I selected those who were interviewed both at baseline and first follow-up (students and dropouts) who had a valid employment outcome (14,887).

Table 1: Sample selection, unweighted	
A. Fundamental Selections	N
Base Year sample	24,599
BY sample with parent data	22,651
BY sample, parent data, valid generation	21,784
B. Analysis of 1990 Outcome	
BY sample, parent data, generation, F1 questionnaire completed	15,845
BY sample, parent data, generation, F1 questionnaire completed, valid outcome	14,887
BY = Base Year, F1 = First follow-up, 1990	

I followed the dropout designation made by NELS. According to NELS: 88, a respondent received a dropout questionnaire during the first follow-up if they were (a) determined by the school or the family having not attended school for four consecutive weeks in the spring of 1990 or (b) a student who was in school for less than two weeks after missing school for four or more weeks in spring of 1990 (Ingels, et al. 1994).

Dual Outcome

Employment and enrollment were reported for each wave of data collection, but for this paper, I will only examine the 1990 outcome. The questionnaire items from which I constructed my outcomes are found in Appendix A.

Table 2: Work-school status, weighted 1990

Status	In -School	Out-of-Sch	Total
Working			
N	4,943	283	5,226
Column %	35.2%	33.1%	35.1%
Not working			
N	9,090	571	9,661
Column %	64.8%	66.9%	64.9%
Total			
N	14,033	854	14,887

Data quality

The advantages of NELS: 88 are the following: (1) the youthfulness of the cohort in baseline provides information about a wide range of time; (2) the availability of over-sampled ethnic minorities and generational status provides a large enough sample to compare across some ethnic groups and generations; (3) the availability of multiple data sources on the same individual provides an opportunity to create a more comprehensive picture about the student and their academic experience and family life.

There are also some important disadvantages to the data set. First, NELS: 88 did not collect full information on the demographic characteristics and behaviors of both parent and the person/guardian who responded to the survey. For children who are of mixed race, information about the “other” parent is not available. There is incomplete information about family life

history including marital history or living arrangements. Parental/guardian information was also not collected in the first follow-up. This leaves a large gap in the information about family life between 1988 and 1992. Contextual information about the respondent's residential neighborhoods was not collected. There is also no complete financial history of the respondents. Data on employment are only observed at specific points in time. I do not know the duration of work or the respondent's employment status between the surveys, for example.

METHODS

Multivariate analysis: Multinomial logit model

My outcome variable is polytomous with the following categories: (1) student worker; (2) working dropout; (3) non-working student; and (4) non-working dropout. A multinomial logistic model is appropriate when the dependent variable has more than two unordered categories that are mutually exclusive and exhaustive (Hosmer and Lemeshow 1989; Maddala 1983). A multinomial logistic model will assess the effect of the independent variables on the probability that a member of the sample is in one of the work-school categories.

The model can be written as follows (Powers and Xie 2000):

$$P_n = \exp(Xb_n)/\{1+\sum_{j=1}^{3}\exp(Xb_j)\} \qquad n=1, 2, 3 \qquad (1)$$

where P_n represents the probability of being in the nth outcome category, X is a vector of covariates, b_n is a vector of unknown parameters associated with the nth work-school status. To identify the model, vector b will be associated with one of the work-school categories set to zero, e.g., $B_4=0$. Doing this for category 4 will allow Equation 1 to be re-written:

$$\log(P_n/P_4) = Xb_n \qquad n=1,2,3 \qquad (2)$$

Vector b_n measures the effect of the covariates in X on the log odds of being in work-school status n relative to category 1. In estimating the model, the selection of the reference work-school category is arbitrary but the variable will be constructed in such a way to allow for convenient interpretation, probably "not working this year." The estimated coefficients may be interpreted as the association between, for example, parental expectations and the probability that a respondent is in any of the following categories: (1) attending school full-time and working part-time; (2) not in school and working; (3) not in school and not working -- relative to being in

school and not working. Similar to logistic regression, the coefficients of a multinomial logistic model can be converted into odds ratios by exponentiating the coefficients.

Since the data were collected using a two-stage stratified probability design, the observations within the same school are unlikely to be independent due to clustering at the school level. Therefore, conventional estimation methods that assume no correlation between observations cannot be used. Estimates of the regression parameters would be consistent but conventional standard errors will be incorrect (Liang and Zeger 1993). STATA6© software can estimate a multinomial logistic regression with survey data that accounts for clusters. The clusters are accounted for by robust variance estimators.

Limitations of the Analysis

The analysis presented here is the beginning of an effort to understand how work is determined during adolescence in the context of school attendance. Future plans include analyzing additional data and addressing some methodological challenges. A similar analysis is planned for the 1992 outcome that may result in different findings, particularly among the dropout population. Having a larger sample of dropouts may help increase the power of the analysis. One drawback of the NELS data set is that it does not includes measures that represent investments in employment. Neither the child nor parent was asked about investment strategies related to working, specifically.

The measurement model in this paper also violates OLS assumptions. Having both the child's and the parent's expectations and investment strategies in the model makes it endogenous because these predictors are jointly determined within the framework (Hao and Bonstead-Bruns 1998). This violates the assumption of zero correlation between the predictors and the error term. Furthermore, the model is unable to control for unobserved heterogeneity, which are underlying unobserved, time-invariant individual characteristic(s) that are not accounted for in the model (Powers and Xie 2000). This violates the assumption of independent errors within individuals. One solution is the fixed effects model, but there are also drawbacks. First, in the process of differencing out the individual effect, covariates that do not change over time, such as gender and ethnicity, are eliminated. Second, cases that do not show any changes in the outcome will be dropped, reducing the power of the analysis. Third, the fixed effects model can purge the endogenous relationship between the error term and the time-invariant effects of the endogenous variables, but it cannot address the potential correlation between the error term

and the remaining effect from the endogenous variables. These issues will be explored in a later paper.

RESULTS

Descriptive

Table 3 presents the descriptive statistics for the variables used in the study by school-work status, which is represented by the following four groups: (1) Working students (2) Working dropouts; (3) Non-working students; and (4) Non-working dropouts. Case weights for the 1988-1990 panel were used to account for stratified sampling and non-response. The school-work outcome was measured in 1990 and all predictors were taken from the 1988 baseline survey.

Ethnicity and Generation In the 1988 survey, children self-identified as Asian, Latino, African or European-descent. The adult respondents reported the nativity of the child and its parents. These questions were used to create the race and generation variables. Although I intended to include a separate variable for generation (i.e., group children by first, second or third generation), preliminary analysis (not presented here) showed no variation in employment patterns between immigrant and non-immigrant children of Asian, Latino and African descent. (*First generation* is defined as both the child and parent are foreign born; *second generation* includes children who are US-born with at least one foreign-born parent; *third generation* is a US-born child with both parents US-born. *Immigrant* is defined as a child having at least one foreign-born parent, i.e. classified either as first or second generation. *Non-immigrant* is defined as both the child and the parents are US-born, or third generation. These terms will be used interchangeably in the text.) A larger proportion of immigrant children with European parents were working students relative to all other groups, including non-immigrant children of European-descent. Among the dropouts, a large percentage of workers in 1990 were Latino youth and teenagers with foreign-born European parents.

Gender The sample was divided almost equally between boys (48.77%) and girls (51.23%). Among students, more boys were working in 1990 than girls. There were an even larger proportion of boys working relative to girls among the dropouts.

Age Although the age variable was continuous in regression models, for presentation purposes, it was divided into age categories. The overall trend (combining students and

dropouts) indicates that work prevalence increased with age, although there were more students working at younger ages and more dropouts working at older ages.

Family income The parent (or guardian) was asked to report the family's income, which NELS classified into categories. There were fewer students from the lowest and highest income groups working than those from middle income families. The pattern among dropouts was different with the work prevalence decreasing as family income increased.

Educational Assets Eighth graders reported if their family had the following items: a place to study at home, a daily newspaper, a regular magazine, an encyclopedia, an atlas, a dictionary, more than 50 books, and a pocket calculator. From these items, I created an index of educational assets. As the number of educational assets increased, there was a higher proportion of student workers. This trend was reversed among dropouts.

Parent or Guardian's education (Note: A majority of the adult questionnaire was completed by mothers (78.75 percent) with the rest divided among fathers (17.89%), step-parents (1.54%), grandparents (.99 %), and other relatives (.83%).) A larger proportion of the working students had a parent or guardian who either completed high school, some vocational training, and/or some college. Among dropouts, a larger percentage of the workers were from families with lower educational attainment levels.

Parent or Guardian's occupation This variable was taken from the adult questionnaire. The highest prevalence of student workers was found among those with a parent or guardian who had a low white collar job. A larger proportion of the workers among dropouts had a parent with a blue or a low white collar job.

Urbanicity This variable represents the urbanicity of the child's school, created as a categorical variable by NELS divided into urban, suburban, and rural. More students from suburban schools worked in 1990 than from urban or rural schools. The trend was different among dropouts with a larger proportion of workers from rural schools.

Family Structure Family structure was created from the self-reports of the child. A larger proportion of student workers were from two-parent families, either with both biological parents

or with one step-parent. Among dropouts, more workers were from single-parent homes or a home with a step-parent.

Number of siblings This is a continuous variable created from the child's questionnaire. There was a larger group of student workers who had at least 1 but not more than five siblings relative to only children or those with 6 siblings. Among dropouts, the prevalence of working increased with the number of siblings.

Ability Ability is represented by a grade composite from grades 6 through 8 (self-reported by the child) as well as a composite reading and math test score in 1988. Although the grade variable is a continuous one in the regression models, for discussion purposes, it was transformed into categories for Table 3. There were more student workers in 1990 among those who had between a 2.0 and 3.999 GPA than those with a lower or a perfect GPA. Among dropouts, the prevalence of working decreased as GPA increased. The composite test score is also continuous in the regression model but categorical in Table 3. More students with higher test scores worked relative to those with lower test scores. The dropout trend was similar to GPA with test scores inversely related to working.

Child's expectations The child's expectations are measured by two variables. In 1988, respondents reported their expected educational attainment and what job they would have at age 30. There were more student workers who expected to go beyond high school compared to those who did not. A larger proportion of the working dropouts did not expect to finish or reach college. The largest proportion of student workers expected to hold a blue collar job (or something unspecified) at age 30. A similar trend was evident among the dropouts.

Parent or Guardian's expectations The parent or guardian's expectations were measured by their self-reported expectation of the child represented categorically by years of education. There was a larger percentage of student workers who had parents or guardians who expected them to go beyond high school. Among dropouts, there were more workers from families with lower educational expectations.

Child's investment strategy To represent the investment strategy of the child, I used five variables: (1) whether they spoke to their mother about planning their high school program; (2) did they seek out information from their counselor about high schools or high school programs;

(3) did they seek out information from their counselor about jobs or careers after high school; (4) did they seek out information from other adults about jobs or careers after high school; and (5) how much time did they spent on their math homework each week. A larger proportion of student workers discussed their high school program with their mothers and counselors, sought out job and career information from their counselor and other adults, and spent some time doing math homework**.** Among dropouts, a larger percentage of workers did not discuss their high school plans with their mothers or counselors, but they did discuss future jobs with their counselors and other adults. Many working dropouts did not spend much time doing homework.

Parent's or Guardian's investment strategy The investment of parents in their children is represented by three categorical variables: (1) talked with their child about post high school plans; (2) assisted their child with homework; and (3) saved for post high school education. A larger proportion of student workers had parents who occasionally discussed plans after high school, sometimes helped with homework, and were not saving in 1988 for their child's post high school education. A larger group of dropout workers had a parent or guardian who rarely discussed post high school plans, seldom helped with homework, and were not saving for post secondary education.

School type Another measure of investment was the type of school the child attended in 1988. A larger proportion of student workers attended private school while a larger percentage of working dropouts went to public schools.

Unemployment rate To represent the labor market demand, employment data from the Bureau of Labor Statistics were obtained. The labor demand is represented by the annual average unemployment rate in 1988 for the metropolitan statistical area where the school was located. If the school was not located in a metropolitan area, the county unemployment information was utilized for schools in rural or non-urban areas. A larger proportion of students worked in areas where the unemployment rate was lower. The pattern among dropouts is less clear.

The descriptive statistics suggests that there was variation in 1990 between working students and working dropouts. A larger proportion of student workers were younger, came for intact families of higher parental incomes and educational levels, more educational assets, better grades and test scores than working dropouts. The differences continued to be stark when comparing the child's and parents' expectations and investments on the child. Whereas a larger

proportion of working students aspired for some college (or higher), most working dropouts did not expect to go beyond (or even complete) high school. A similar trend was evident when parental expectations were compared between the two groups. Not surprisingly, there was a larger group of student workers who sought out and received advise about their high school programs from adults (including their parents) and homework attention than dropouts.

Even with these differences, the similarities between the two groups are also worth noting. First, the work pattern did not vary across ethnicity, except that a larger percentage of Latino youth who left high school in 1990 were working compared to the rest. Second, a greater proportion of boys worked than girls. Third, more student and dropout workers expected to have a blue collar job when they reach 30 years old. Fourth, a larger group of workers from both groups discussed jobs and careers with their counselor or other adults than those who were not working. Finally, the workers in both groups had parents who were not saving for their post high school education. These preliminary findings suggest that youth from different family backgrounds may be placing different values on work and school. The multivariate analysis provides more evidence to this effect.

Multinomial regression

Table 4 presents the *odds ratios of the exponentiated estimated coefficients* for seven multinomial regression models among *students*, identifying the factors that determine whether they will work or not. Model 1 includes the total effect of each predictor regressed on the outcome one variable at a time. Model 2 shows the multivariate effects of race, gender and age. Model 3 includes the addition of the predictors for socio-economic status, family structure, and school urbanicity. Model 4 incorporates the effects of academic ability as measured by grades and test scores. Model 5 adds the effect of parent and child expectations. Model 6 includes variables that represent the parent's and child's investments. Finally, Model 7 incorporates the effects of the labor market represented by the community's unemployment rate. To briefly summarize, the findings suggest that an investment strategy was at play on how well to best utilize the student's time given the family's background and expectations. Families who were investing in education were less likely to have children who worked part-time during the school year. There seemed to be another group of families who were transmitting lower levels of educational expectations that apparently resulted in a greater (and earlier) emphasis on work that may not require much post high school education. The analysis also found that ethnic differences persisted even after controlling for other determinants (including labor market

demand), suggesting that there might be a variation in how different cultures valued work over other activities during adolescence.

Table 5 presents the same models as in Table 4 among high school *dropouts*. Although the conceptual framework did not seem to fit the dropouts as well as the students, there were some important findings. First, the notion that Latino youth, particularly those who dropout, were more likely to be working, was not evident in this analysis. In fact, Latino youth were less likely to be working than non-immigrant children of European ancestry. Moreover, these significant effects went away after family background was added to the model suggesting that socio-economic status accounted for much of the difference between the ethnic groups. Second, boys were more than twice as likely to be working than girls. Third, older children were more likely to be working than younger ones, which was not surprising considering that dropouts were usually older than their classmates. What is most striking from Tables 4 and 5 is the lack of moderation as more predictors were added to the model, particularly the continued strong and significant effect of ethnicity on the outcome, even after controlling for other factors.

To better understand the four pathways to work and school, Figures 1 through 15 describe the effects of some of the main variables included in the multinomial logit regression. The following figures show the impact of some of the explanatory variables on the estimated probabilities for each outcome category. Most of the relationships discussed below were significant in the multivariate analysis as shown in Tables 4 and 5. Note that because it is difficult to see the variation among dropouts in the graphs that contain all four outcome categories, separate graphs were created to amplify the variation among dropouts for select determinants.

The variation across ethnicity reflected in Table 4 is again evident in Figure 1: Among students, Asians, Latinos and Africans were all less likely to work -- and more likely to study – than children of European descent. Examining the dropout population more closely in Figure 2, it is evident that Latino youth were more likely to work than Asians or Africans but still less likely that those of European descent. This is different from what was found among Latino students. This suggests a different pathway for children of the same ethnicity who vary by enrollment status.

Gender also has an impact on the allocation of time, as Figures 3 and 4 show, even after controlling for other determinants. Figure 3 shows that among students, boys were more likely to work than girls and there was slightly higher probability that girls were focusing primarily on

school. Figure 4 expands the dropout picture and shows that boys were much more likely to work than girls and that more girls were likely to stay inactive (not work) when they dropped out. This suggests that girls were probably involved in other activities such as pregnancy and motherhood that took them both out of the labor force and school. Another important determinant of schooling and working decisions is age. As expected, there was a higher proportion of workers at older ages, according to Figure 5, among students. The slope is steeper among dropouts as demonstrated in Figure 6, particularly between ages 14 and 16.

Family income also has an impact on the work-school status of youth. Among students, there seems to be U-shaped curve, as Figure 7 shows. Youth from the lowest and highest incomes had the lowest probability of working and the highest probability of studying. This is however, not evident among dropouts, as reflected in Figure 8. Children from the lowest income families had the highest probability of working among all income groups. The highest level of inactivity (not working and not studying) was also more likely among the poorest families. The relationship of grades to the outcome is similar to that of family income, as evident in Figure 9. Youth with the lowest or the highest grades were less likely to work and the most likely to study compared to those in the middle tier. Note that the probability of studying and not working was highest among those with the highest grades.

Parental education also seems to have an important effect on working and schooling decisions. The probability of working decreased -- while the probability of "only studying" rose - as the parent's level of education increased, among students (see Figure 10). In addition to the effect of family background, the expectations of the child also played a role in determining their time allocation. Figure 11 demonstrates that students who expected to have a high white collar job had a higher likelihood of studying than those who expected either a blue collar or low white collar job at age 30. The probability of working also declined among students who expected to have a high white collar job relative to those who expected jobs in other sectors.

Parental investment is also an important determinant for the choices made between work and school. The probability that the child will work decreased as parents spent more time assisting their child with homework, as demonstrated in Figure 12. This figure also shows that the probability of "only studying" increased with more parental time spent on homework. Another important determinant of parental investment is their savings behavior. The probability of

working was lower (and the probability of studying higher) among children whose parents were saving for their post high school education (see Figure 13).

In addition to individual and family-level variables, an important macro level determinant is the labor market demand, represented here in Figures 14 and 15, as the community's average unemployment rate. Not surprisingly, for both students and dropouts, the probability of work declined as the unemployment rate decreased in the community -- more sharply among dropouts. The probability of "only studying" among students increased rapidly with rising unemployment while the probability for inactivity (not in school and not working) also increased with unemployment.

CONCLUSION

Although the analysis presented here requires further improvement, the initial findings suggest that families channel children into different work-school situations based on strategies that are influenced by the parent's and child's educational expectations in response to family circumstances. There seems to be two groups of families among the students. The first group includes those who highly valued education and focused on that activity, exclusive of work. This was evident in the lower likelihood that children from families who saved for college, received parental assistance in homework, and expected to have a high white collar job at age 30, will work. It was also demonstrated among children who were doing well in school and who came from higher income families whose parents achieved a high level of education.

The second group includes families that mixed work and school: Those who had low or moderate levels of investment in education were more likely to have children who were also working. This was demonstrated in the higher likelihood of working among students who came from middle-income families and whose parents had less than a college education. For these students and their families, a high school diploma was important but so was some employment experience, particularly among those who aspired for a blue or a low white collar job at age 30.

The determinants for working among the dropouts may not be the same as those who were in school in 1990, suggesting that dropouts may not perceive work as an alternative to school. For instance, girls who dropped out of school were almost twice as likely not to be working than to be working. Among boys who dropped out, there was an almost equal chance of working or not. However, there was also some evidence to illustrate that work could be relevant among

dropouts. Take the effect of age, for example. There was a sudden increase in employment among older dropouts. Also, the probability of employment was higher among dropouts from lower income families than those from higher incomes. In the forthcoming 1992 analysis, which will include a larger sample of workers and dropouts, the effects of these predictors on school and work decisions might be stronger and more consistent.

Finally, the lack of moderation among the variables is noteworthy, particularly in the significant and persistent effect of ethnicity, even after controlling for other important determinants. Asians, Latinos and African-descent youth were all less likely to work than European-American student workers who either had US- or foreign-born parents. However, among dropouts, Latinos were much more likely to work than those of Asian and African-descent, but this effect was not significant in the full model. These pervasive ethnic effects suggest that cultural explanations for these variations may be present and calls for further exploration. In sum, these preliminary analyses suggests that education may not be the only source of human capital that some children and their parents look to when planning for the future, but how this varies across families is a story that is just beginning to unfold.

ANNEX

Table 3: 1988 Predictors on 1990 Work-School Outcome, weighted percentages

Determinants	Student		Dropout		Total
	Worker	Non-Worker	Worker	Non-Worker	N
Ethnicity/Generation					
Asian-descent	30.71	66.61	0.55	2.13	503
Latino-descent	23.95	67.58	2.36	6.11	1,344
African-descent	24.87	64.28	1.05	9.85	1,734
European-descent, at least one foreign-born parent	40.09	56.55	2.19	1.17	571
European-descent, U.S.-born parents	35.55	59.76	1.98	2.70	10,493
Total	33.23	61.13	1.87	3.77	14,645
Gender					
Female	32.09	62.54	1.22	4.15	7,539
Male	34.35	59.54	2.59	3.51	7,348
Total	33.21	61.06	1.90	3.84	14,887
Age (1)					
Age 12	12.92	86.95	0.00	0.12	74
Age 13	28.40	69.93	0.24	1.43	5,564
Age 14	37.54	57.64	1.28	3.54	7,549
Age 15	30.31	44.21	10.34	15.14	1,262
Age 16	20.16	28.83	31.05	19.96	107
Total	33.16	61.11	1.88	3.85	14,556
Family Income					
$0 - $14,999	27.11	57.78	4.36	10.75	2,776
$15 - 24,999	34.53	59.27	2.08	4.12	2,522
$25 - $34,999	36.26	60.76	1.32	1.67	2,669
$35 - $49,999	36.06	60.74	1.35	1.85	2,979
$50,000 plus	32.85	65.73	0.38	1.03	3,333
Total	33.34	61.08	1.83	3.76	14,279
Educational Assets					
0	2.75	79.54	8.61	9.10	15
1	15.87	60.23	4.32	19.57	162
2	19.38	59.79	6.17	14.65	219
3	24.58	63.46	3.10	8.85	480
4	26.12	61.22	3.08	9.58	1,066
5	30.09	61.95	3.11	4.85	2,085
6	35.50	60.06	1.58	3.05	3,596
7	36.23	61.40	1.14	1.23	4,459
8	35.13	60.23	1.25	3.39	2,652
Total	33.32	60.98	1.87	3.84	14,733
Parent's/Guardian's Education					

Less than high school	30.03	52.87	5.48	11.62	1,989
High school graduate	36.13	59.47	1.63	2.77	3,802
Vocational or Not finish college	33.64	61.64	1.82	2.89	5,622
College or Professional degrees	31.16	66.78	0.24	1.81	3,449
Total	33.22	61.11	1.56	3.78	14,863
Parent's/Guardian's Occupation					
Not work, farmer or homemaker	28.91	62.96	1.41	6.72	675
Blue collar	32.10	57.23	3.05	7.62	2,520
Low white collar	36.40	58.67	1.96	2.96	5,308
High white collar	32.69	64.49	0.99	1.83	5,327
Total	33.82	60.86	1.76	3.56	13,829
Urbanicity of child's school					
Urban	31.44	61.46	1.51	5.59	3,650
Suburban	35.83	59.64	1.75	2.78	6,541
Rural	30.92	62.73	2.41	3.94	4,696
Total	33.21	61.06	1.90	3.84	14,887
Family structure					
Two biological parents	33.96	63.05	1.26	1.73	9,559
One biological (single) parent	31.97	59.57	3.67	4.79	2,434
One biological parent and One step parent	34.52	55.58	2.64	7.26	2,146
No biological parents	25.44	54.79	0.00	19.77	183
Total	33.59	61.24	1.86	3.31	14,321
Number of siblings					
0	31.79	62.21	1.26	4.73	948
1	33.34	63.35	0.80	2.51	4,721
2	32.68	62.04	1.92	3.36	4,065
3	35.72	58.50	2.34	3.45	2,230
4	33.66	59.50	2.34	4.50	1,196
5	33.51	55.56	2.25	8.67	603
6	30.84	55.91	5.35	7.89	1,049
Total	33.27	61.03	1.87	3.82	14,812
Grades (1)					
Less than 1.0	19.99	50.29	16.74	12.98	115
Between 1.0 and 1.999	28.93	50.63	4.56	15.87	1,402
Between 2.0 and 2.999	34.32	58.08	2.75	4.85	5,075
Between 3.0 and 3.999	34.23	64.14	0.64	1.00	6,483
4.00	30.72	68.71	0.25	0.33	1,688
Total	33.24	61.19	1.82	3.75	14,762
Standardized Test Quartile (1)					
Quartile 1, low	28.25	57.49	5.58	8.69	3,088
Quartile 2	33.30	61.32	2.07	3.30	3,503
Quartile 3	35.52	61.07	0.56	2.85	3,836

Quartile 4, high	35.14	64.48	0.12	0.26	4,011
Total	33.32	61.31	1.88	3.49	14,439
Child's expectation of academic attainment					
High school or less	26.01	55.32	7.39	11.27	1,644
Vocation or some college	36.04	55.74	3.26	4.95	3,218
College	33.79	62.98	0.53	2.71	6,561
Professional	32.91	65.25	0.63	1.21	3,383
Total	33.21	61.07	1.91	3.80	14,806
Child's expectation of occupation at age 30					
Blue collar	35.45	55.15	3.26	6.13	2,103
Low white collar	31.83	56.56	1.63	9.98	1,151
High white collar	33.34	64.02	1.08	1.56	6,787
Other (other job, homemaker, farmer)	34.65	60.63	2.04	2.68	2,920
Total	33.84	61.15	1.70	3.30	12,960
Parent's/guardian's expectation of academic attainment					
High school or less	28.32	53.49	6.32	11.87	1,913
Vocation or some college	33.49	57.71	3.24	5.56	3,432
College	34.46	62.97	0.66	1.90	6,401
Professional	33.37	65.58	0.13	0.91	3,076
Total	33.22	61.07	1.88	3.83	14,821
Child talk with mom about H.S. program					
No	26.82	58.76	4.03	10.39	1,597
1 - 2 times	33.28	61.49	2.01	3.22	5,439
3 plus times	34.63	61.26	1.30	2.80	7,625
Total	33.28	61.07	1.86	3.78	14,662
Child get information from counselor about H.S. program					
Yes	35.30	58.50	1.79	4.41	5,520
No	32.00	62.79	1.87	3.34	9,224
Total	33.24	61.19	1.84	3.74	14,744
Child get information from counselor about jobs/careers					
Yes	34.27	57.15	2.30	6.28	2,882
No	33.12	62.09	1.67	3.11	11,774
Total	33.35	61.12	1.79	3.74	14,656
Child get information from adults about jobs/careers					
Yes	34.79	58.96	1.91	4.34	9,101
No	31.07	64.72	1.77	2.44	5,605
Total	33.37	61.15	1.86	3.62	14,706
Time spent in Math homework (1)					
None	32.71	54.63	5.00	7.67	1,241
Less than 1 hour	33.79	60.05	2.02	4.14	5,974
1 hour	33.16	62.68	1.72	2.45	3,296
2 hours	32.64	64.48	0.77	2.12	1,558

3 hours	31.79	62.53	0.63	5.05	1,068
4-6 hours	34.50	64.23	0.66	0.61	979
7-9 hours	39.75	60.19	0.00	0.06	146
10 or more hours	18.85	77.07	2.72	1.36	102
Total	33.28	61.26	1.86	3.60	14,363
Parent/guardian talks with child about post h.s. plans					
No or rarely	27.98	60.44	2.42	9.16	1,942
Occasionally	34.64	60.94	1.85	2.57	7,310
Regularly	33.14	61.43	1.78	3.64	5,607
Total	33.20	61.06	1.90	3.84	14,859
Parent/guardian helps child with homework					
Seldom	33.89	58.99	2.60	4.52	4,353
1 - 2 times a month	36.21	60.11	1.41	2.27	3,951
1 -2 times a week	32.24	62.34	1.56	3.86	4,837
Almost everyday	26.67	68.55	2.02	2.76	1,497
Total	33.23	61.38	1.87	3.52	14,638
Parent/guardian saves for child's post h.s. training					
Yes	32.37	64.80	0.65	2.18	6,526
No	35.15	59.14	1.64	4.07	6,477
Total	33.75	61.98	1.15	3.12	13,003
School Type					
Private	35.86	63.44	0.23	0.47	1,798
Public	32.84	60.73	2.13	4.30	13,089
Total	33.21	61.06	1.90	3.84	14,887
Unemployment rate, annual average 1988 (1)					
14-39%	39.36	55.92	1.77	2.95	3,111
40-49%	34.07	60.61	1.45	3.88	2,933
50-59%	31.45	61.61	2.09	4.86	2,848
60-75%	33.79	61.54	2.23	2.44	2,863
76-335%	26.32	66.74	1.96	4.98	2,959
Total	33.05	61.21	1.90	3.83	14,714

Notes

1 - continuous in regression models

Table 4: Odds ratios predicting work status among students

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Ethnicity/Immigrant generation							
(European-descent with US-born parents excluded)							
Asian-descent	0.717	0.737	0.772	0.796	0.801	0.797	0.776
	***	***	***	***	**	**	***
Latino-descent	0.625	0.597	0.584	0.598	0.595	0.574	0.624
	***	***	***	***	***	***	***
African-descent	0.625	0.583	0.584	0.604	0.602	0.582	0.568
	***	***	***	***	***	***	***
European-descent with at least 1 foreign-born parent	1.202	1.256	1.237	1.236	1.232	1.244	1.210
	**	**	**	**	**	**	**
Gender (Female excluded)							
Male	1.175	1.096	1.102	1.084	1.081	1.089	1.087
	***	**	***	**	**	**	**
Age (continuous)	1.632	1.677	1.692	1.692	1.706	1.705	1.727
	***	***	***	***	***	***	***
Family Income ($50,000 plus excluded)							
$0 -$14,999	0.963	--	0.961	0.964	0.956	0.896	0.974
$15,000-$24,999	1.235	--	1.184	1.191	1.180	1.114	1.153
	***		**	***	**		**
$25,000-$34,999	1.341	--	1.282	1.290	1.276	1.223	1.253
	***		***	***	***	***	***
$35,000-$49,999	1.171	--	1.134	1.141	1.133	1.094	1.111
	***		**	**	**		*
Educational Assets (continuous)	1.037	--	1.044	1.048	1.044	1.042	1.033
	***		***	***	***	***	**
Parent/Guardian Education							
(Finish college or professional degree excluded)							
Less than High School	1.130	--	1.286	1.291	1.301	1.233	1.243
	*		***	***	***	**	***
High school	1.383	--	1.346	1.352	1.345	1.290	1.298
	***		***	***	***	***	***

Vocational or Some college	1.296 ***	--	1.267 ***	1.273 ***	1.259 ***	1.220 ***	1.246 ***
Parent/Guardian Education							
(High white collar excluded)							
Other (not work, farmer, homemaker)	1.035	--	0.899	0.902	0.900	0.894	0.886
Blue collar	1.132 **	--	1.022	1.027	1.026	1.008	1.003
Low white collar	1.211 **	--	1.060	1.059	1.057	1.044	1.037
Urbanicity of child's school (Rural excluded)							
Urban	1.020	--	1.197 **	1.181 **	1.186 **	1.238 ***	1.082
Suburb	1.185 ***	--	1.291 ***	1.278 ***	1.277 ***	1.279 ***	1.115 *
Family Structure (Single parent and no parents excluded)							
Two biological parents	0.915 *	--	0.864 **	0.880 **	0.882 **	0.905 *	0.921
One biological and one step-parent	1.018	--	0.920	0.930	0.925	0.925	0.961
Sibling (continuous)	1.027 **	--	1.033 **	1.033 **	1.032 **	1.026 **	1.025 *
Grades (continuous)	0.842 ***	--	--	0.859 ***	0.858 ***	0.843 ***	0.860 ***
Scores (continuous)	0.998	--	--	1.008 ***	1.009 ***	1.010 ***	1.007 ***
Child's expectations of academic achievement							
(Professional degree excluded)							
High school or less	1.096	--	--	--	0.782 ***	0.813 **	0.799 **
Vocational or Some college	1.326 ***	--	--	--	1.046	1.052	1.040
Complete college	1.108 **	--	--	--	0.967	0.980	0.974
Child's occupational expectations at age 30							
(High white collar excluded)							
Blue collar	1.345	--	--	--	1.177	1.168	1.188

	***				***	***	***
Low white collar	1.268	--	--	--	1.210	1.220	1.211
	***				***	***	***
Other employment	1.169	--	--	--	1.102	1.103	1.095
	***				*	*	*
Parent's/Guardian's expectations of academic achievement							
(Professional degree excluded)							
High school or less	1.214	--	--	--	0.956	0.952	0.937
	***						
Vocational or Some college	1.319	--	--	--	1.039	1.022	1.007
	***						
Complete college	1.137	--	--	--	0.990	0.978	0.972
	***						
Child speak with Mom about h.s. program							
(Not discuss excluded)							
1 - 2 times	1.127	--	--	--	--	1.153	1.146
	*					**	**
3 times	1.123	--	--	--	--	1.180	1.181
	*					**	**
Child get information about h.s. program from counselor							
(No excluded)							
Yes	1.175	--	--	--	--	1.149	1.118
	***					***	**
Child get information about jobs/careers from counselor							
(No excluded)							
Yes	1.127	--	--	--	--	1.033	1.009
	**						
Child get information about jobs/careers from other adults							
(No excluded)							
Yes	1.168	--	--	--	--	1.108	1.118
	***					***	***
Time spent in homework (continuous)	0.975	--	--	--	--	0.985	0.982
	**						
Parent/guardian speak with child about post h.s. program							
(No and rarely excluded)							
Occasionally	1.104	--	--	--	--	1.088	1.102
	*						
Regularly	1.062	--	--	--	--	1.134	1.148

						*	**
Parent/guardian help child with homework							
(Seldom excluded)							
1 - 2 times a month	1.056	--	--	--	--	1.011	1.009
1 - 2 times a week	0.946	--	--	--	--	0.916	0.915
						*	*
Almost everyday	0.765	--	--	--	--	0.748	0.755
	***					***	***
Parent/guardian save for post-high school education							
(No excluded)							
Yes	0.826	--	--	--	--	0.855	0.848
	***					***	***
Public school attendance (private excluded)	1.199	--	--	--	--	1.161	1.188
	**					*	**
Unemployment rate in 1988 (continuous)	0.991	--	--	--	--	--	0.991
	***						***

Note: Models include dummy variables denoting missing values for all

except generation, gender, urbanicity, public school and unemployment rate in 1988

Models

Model 1: Bivariate multinomial

Model 2: Race/Generation, Gender, Age

Model 3: Model 2 + Income, Educ Assets, P/G Educ & Occup,

Urbanicity, Family structure & Sibs

Model 4: Model 3 + Grades and Scores

Model 5: Model 4 + Parent-Child Expectations

Model 6: Model 5 + Parent-Child Investment Strategy

Model 7: Model 6 + Unemployment rate in 1988 (msa or county)

P-value

* = <.10

** = <.05

*** = <.01

Table 5: Odds ratios predicting work status among dropouts

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Ethnicity/Immigrant generation							
(European-descent with US-born parents excluded)							
Asian-descent	0.475	0.478	0.555	0.532	0.551	0.515	0.507
Latino-descent	0.494 ***	0.459 ***	0.652	0.642	0.650	0.639	0.762
African-descent	0.319 ***	0.243 ***	0.312 ***	0.321 ***	0.333 ***	0.336 ***	0.336 ***
European-descent with at least 1 foreign-born parent	0.792	0.840	0.878	0.852	0.965	1.099	1.092
Gender (Female excluded)							
Male	2.861 ***	2.580 ***	2.537 ***	2.583 ***	2.288 ***	2.282 ***	2.290 ***
Age (continuous)	1.626 ***	1.769 ***	1.880 ***	1.826 ***	1.815 ***	1.814 ***	1.913 ***
Family Income ($50,000 plus excluded)							
$0 -$14,999	0.403 **	--	0.438 *	0.452 *	0.413 *	0.422 *	0.470 *
$15,000-$24,999	0.547	--	0.527	0.546	0.497	0.526	0.553
$25,000-$34,999	0.559	--	0.555	0.554	0.527	0.539	0.546
$35,000-$49,999	0.763	--	0.721	0.730	0.692	0.722	0.719
Educational Assets (continuous)	1.070	--	1.012	1.009	1.015	1.006	0.996
Parent/Guardian Education							
(Finish college or professional degree excluded)							
Less than High School	0.784	--	1.092	1.152	1.032	1.006	1.002
High school	1.243	--	1.479	1.549	1.442	1.438	1.431

Vocational or Some college	1.203	--	1.553	1.579	1.434	1.357	1.375
Parent/Guardian Education							
(High white collar excluded)							
Other (not work, farmer, homemaker)	0.563	--	0.604	0.600	0.589	0.599	0.593
Blue collar	0.614 *	--	0.666	0.672	0.653	0.673	0.652
Low white collar	0.692	--	0.728	0.733	0.741	0.729	0.720
Urbanicity of child's school (Rural excluded)							
Urban	0.584 **	--	0.707	0.714	0.729	0.764	0.629 *
Suburb	0.932	--	0.899	0.900	0.908	0.913	0.802
Family Structure (Single parent and no parents excluded)							
Two biological parents	0.920	--	0.756	0.736	0.711	0.712	0.726
One biological and one step-parent	0.868	--	0.702	0.701	0.648	0.642	0.665
Sibling (continuous)	0.984	--	1.045	1.046	1.054	1.067	1.076
Grades (continuous)	0.925	--	--	1.139	1.197	1.181	1.206
Scores (continuous)	1.002	--	--	0.999	1.005	1.005	1.003
Child's expectations of academic achievement							
(Professional degree excluded)							
High school or less	1.143	--	--	--	0.786	0.821	0.765
Vocational or Some college	1.044	--	--	--	0.786	0.792	0.757
Complete college	0.535 *	--	--	--	0.409 **	0.404 **	0.391 **
Child's occupational expectations at age 30							
(High white collar excluded)							
Blue collar	1.692	--	--	--	1.072	1.067	1.094

	**						
Low white collar	0.576	--	--	--	0.635	0.594	0.604
	*						
Other employment	0.962	--	--	--	0.796	0.809	0.793
Parent's/Guardian's expectations of academic achievement							
(Professional degree excluded)							
High school or less	2.567	--	--	--	1.891	1.985	1.919
	*						
Vocational or Some college	2.898	--	--	--	2.317	2.310	2.309
	**						
Complete college	1.880	--	--	--	1.700	1.682	1.707
Child speak with Mom about h.s. program							
(Not discuss excluded)							
1 - 2 times	1.040	--	--	--	--	1.225	1.240
3 times	0.912	--	--	--	--	1.233	1.245
Child get information about h.s. program from counselor							
(No excluded)							
Yes	0.752	--	--	--	--	0.721	0.687
							*
Child get information about jobs/careers from counselor							
(No excluded)							
Yes	0.826	--	--	--	--	0.911	0.869
Child get information about jobs/careers from other adults							
(No excluded)							
Yes	0.989	--	--	--	--	1.027	1.027
Time spent in homework (continuous)	0.971	--	--	--	--	0.962	0.968
Parent/guardian speak with child about post h.s. program							
(No and rarely excluded)							
Occasionally	1.565	--	--	--	--	1.377	1.417
	**						
Regularly	1.473	--	--	--	--	1.487	1.545

						*	*
Parent/guardian help child with homework							
(Seldom excluded)							
1 - 2 times a month	1.098	--	--	--	--	0.922	0.921
1 - 2 times a week	1.311	--	--	--	--	1.067	1.054
Almost everyday	1.245	--	--	--	--	0.946	0.953
Parent/guardian save for post-high school education							
(No excluded)							
Yes	1.357	--	--	--	--	1.194	1.177
Public school attendance (private excluded)	1.052	--	--	--	--	1.311	1.411
Unemployment rate in 1988 (continuous)	0.993	--	--	--	--	--	0.988
	**						***

Note: Models include dummy variables denoting missing values for all

except generation, gender, urbanicity, public school and unemployment rate in 1988

Models

Model 1: Bivariate multinomial

Model 2: Race/Generation, Gender, Age

Model 3: Model 2 + Income, Educ Assets, P/G Educ & Occup,

Urbanicity, Family structure & Sibs

Model 4: Model 3 + Grades and Scores

Model 5: Model 4 + Parent-Child Expectations

Model 6: Model 5 + Parent-Child Investment Strategy

Model 7: Model 6 + Unemployment rate in 1988 (msa or county)

P-value

* = <.10

** = <.05

*** = <.01

Figure 1

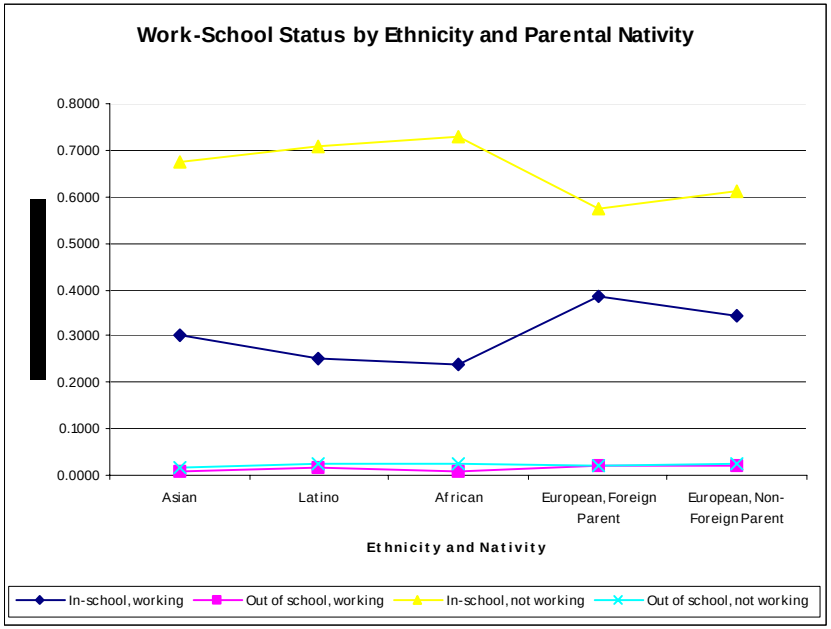


Figure 2

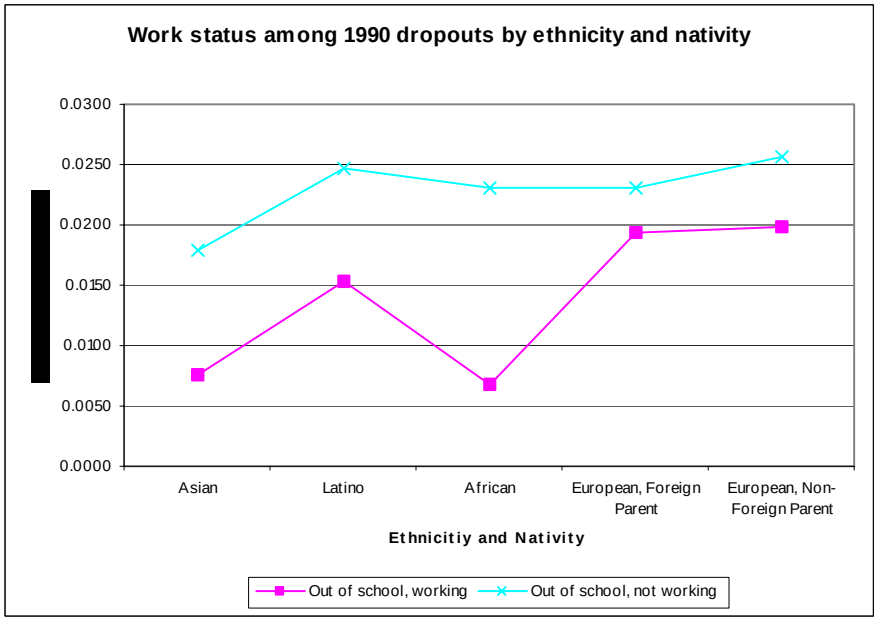


Figure 3

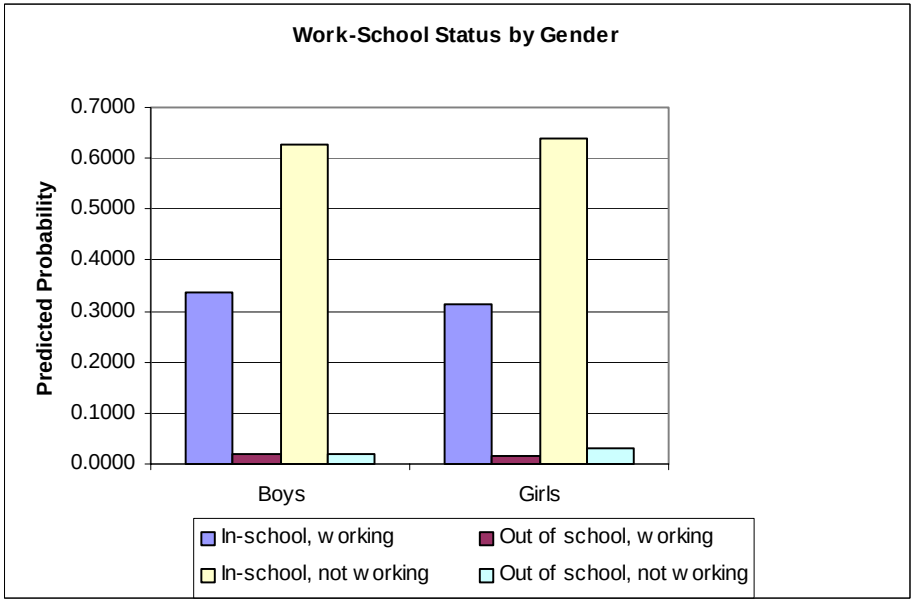


Figure 4

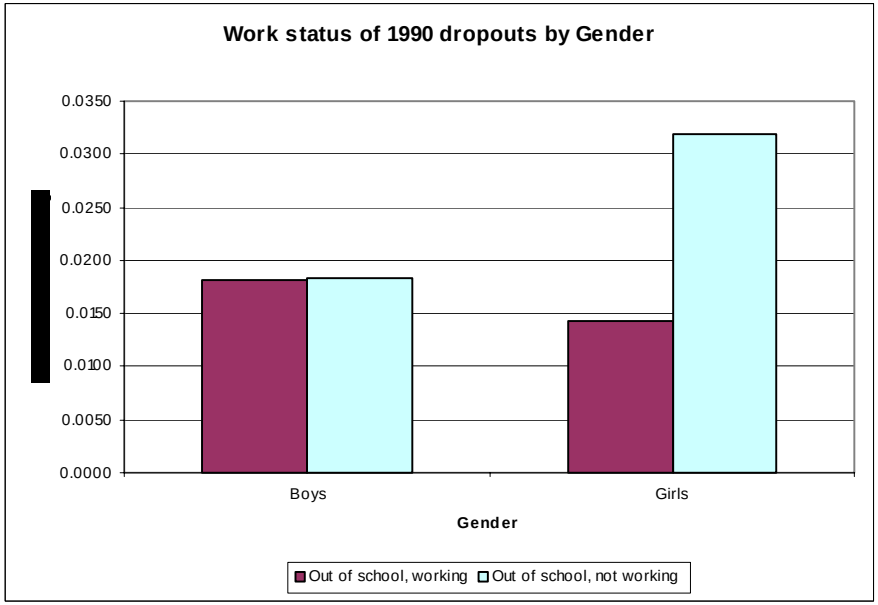
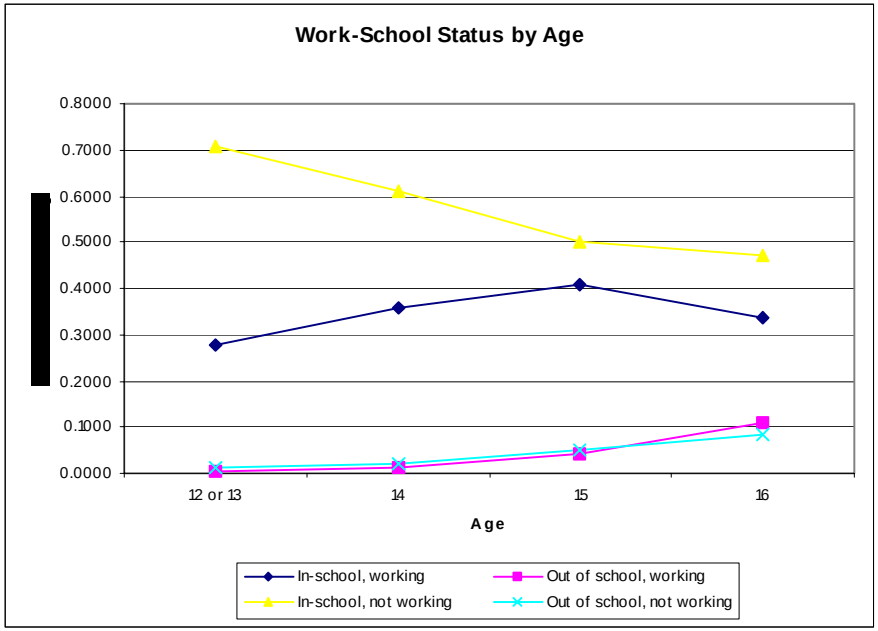


Figure 5



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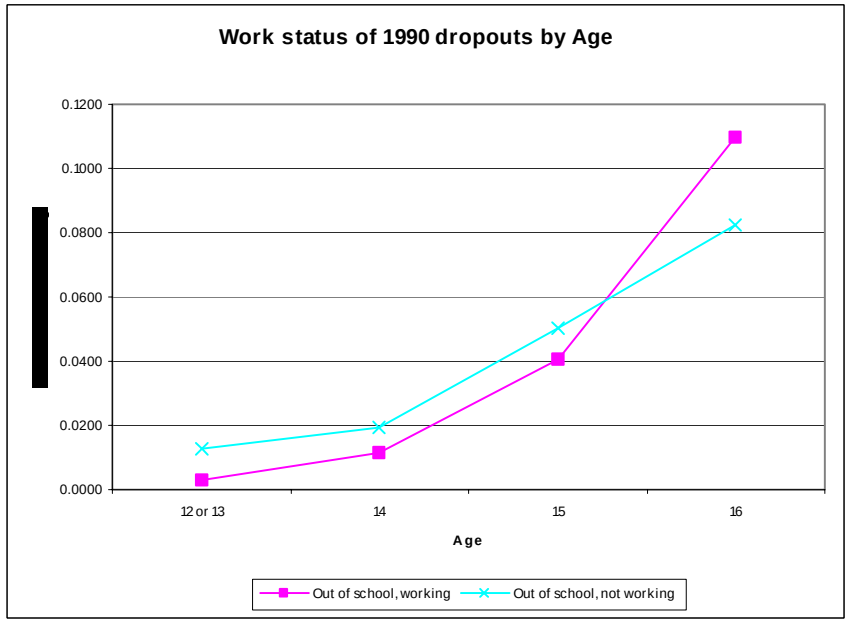


Figure 7

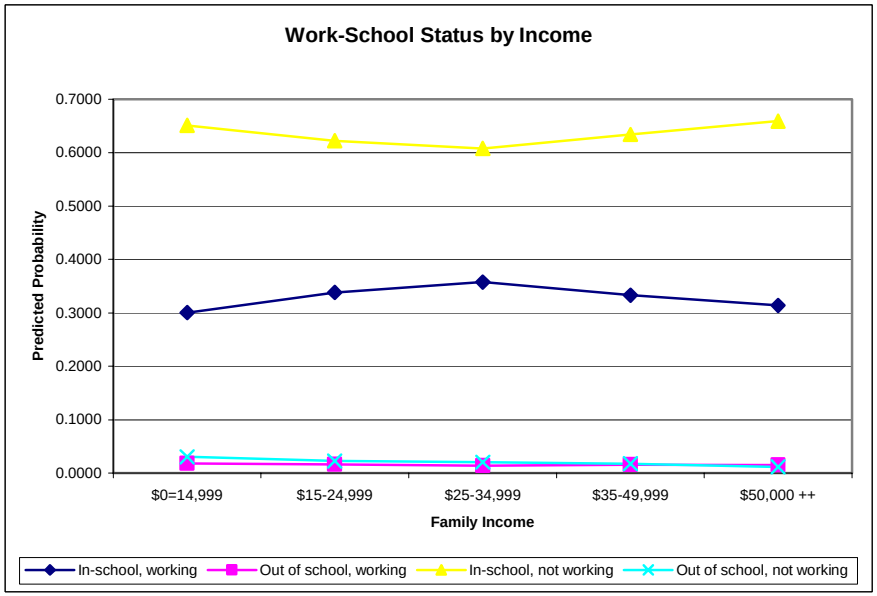


Figure 8

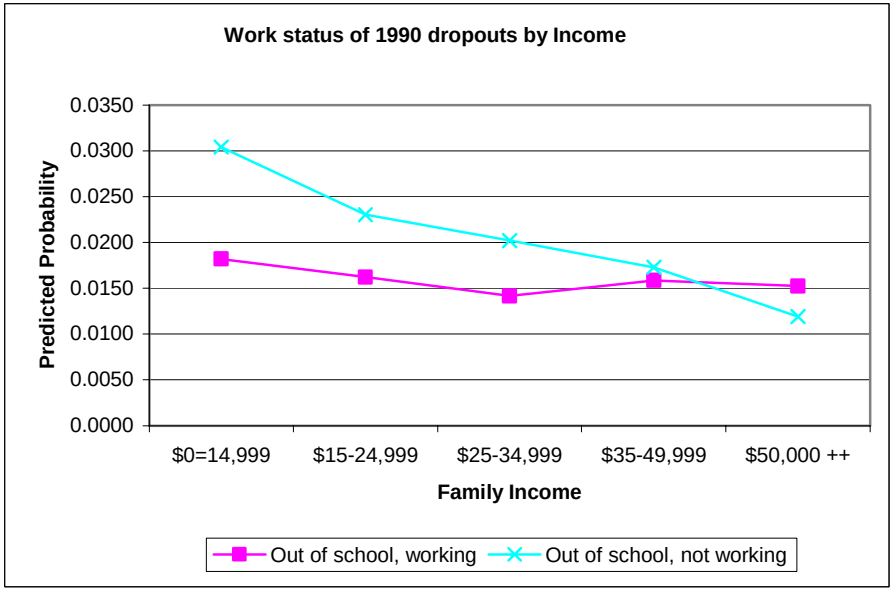


Figure 9

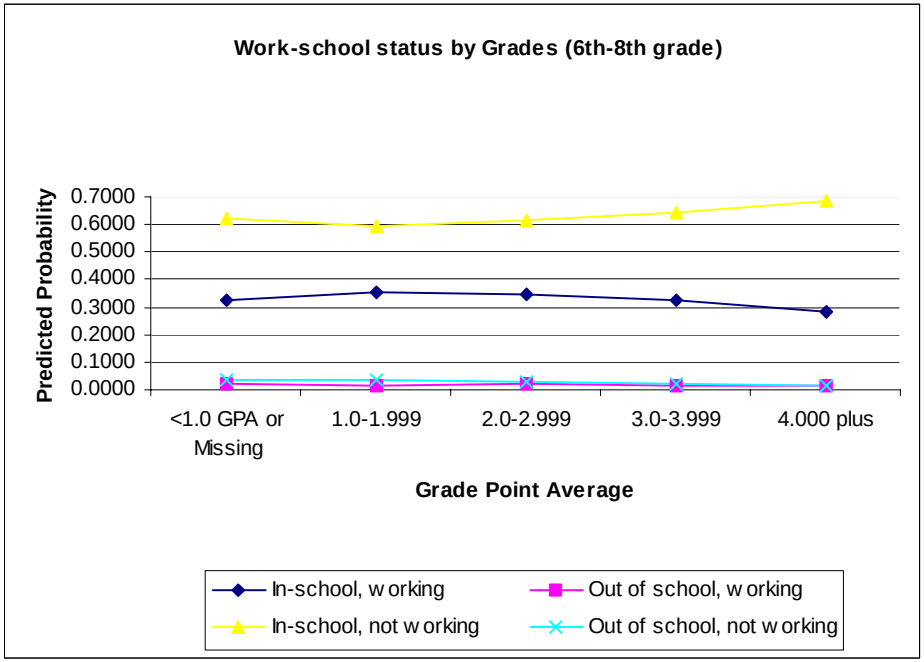


Figure 10

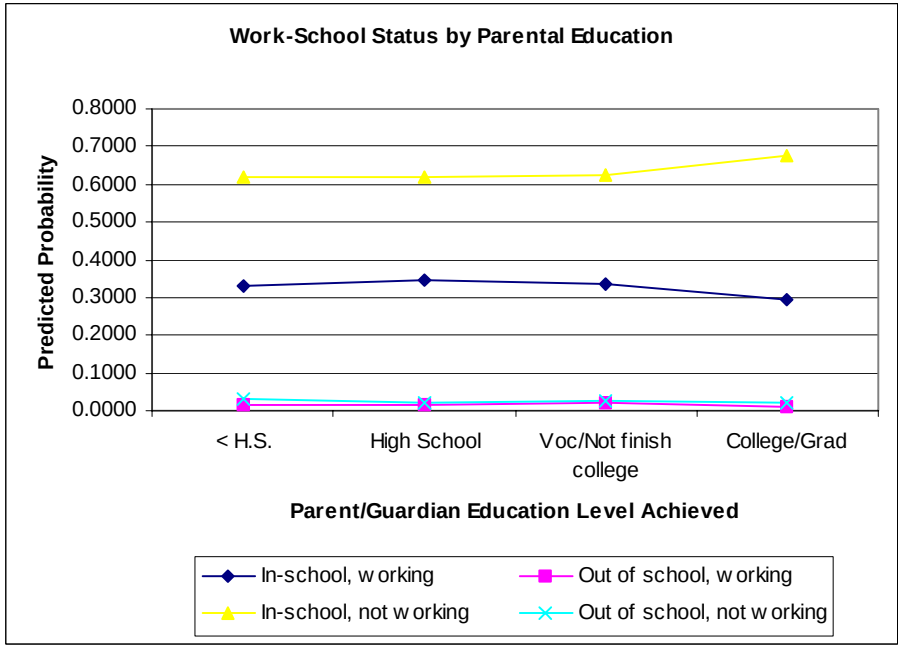


Figure 11

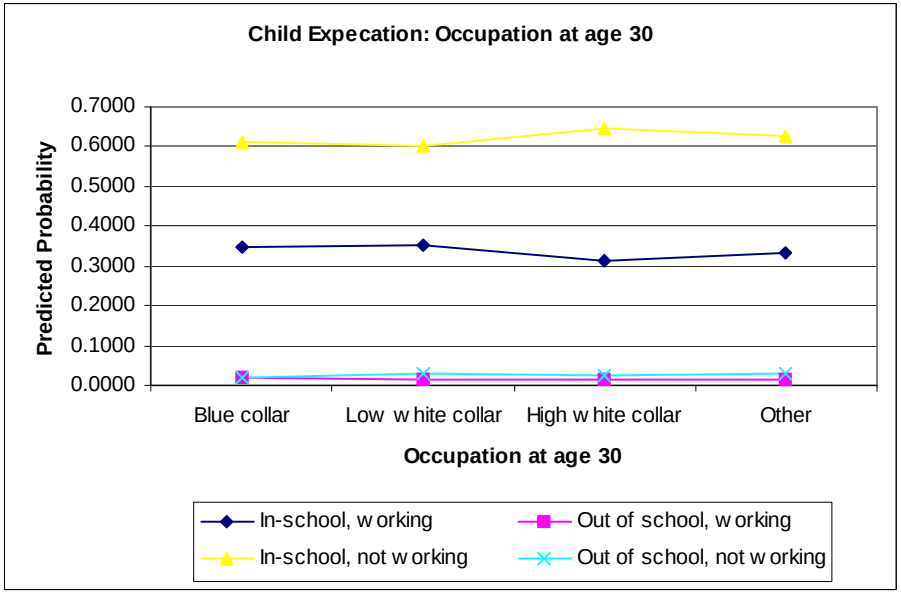


Figure 12

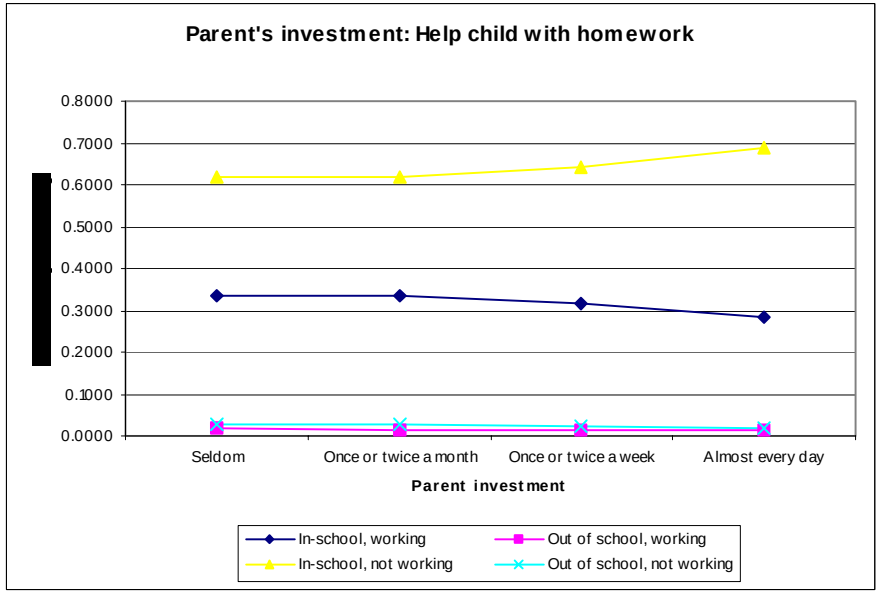


Figure 13

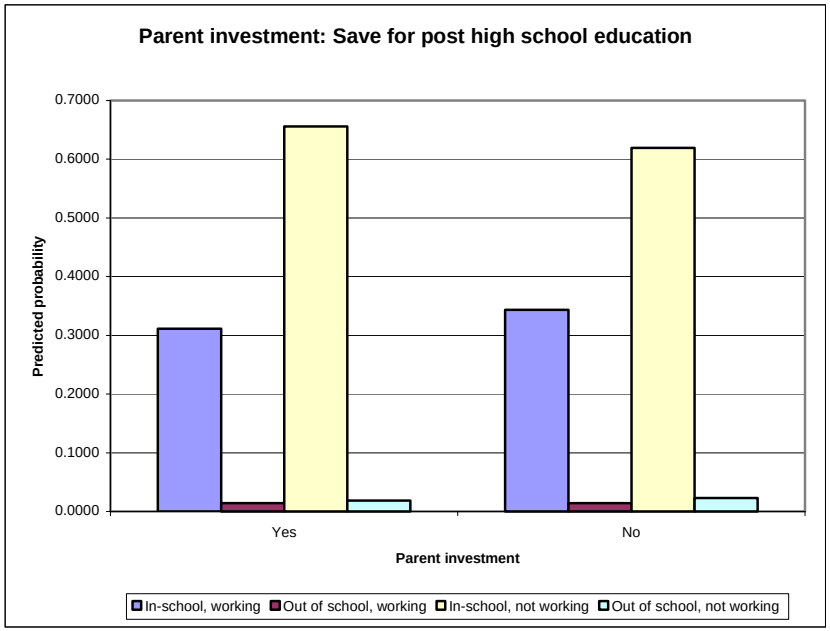


Figure 14

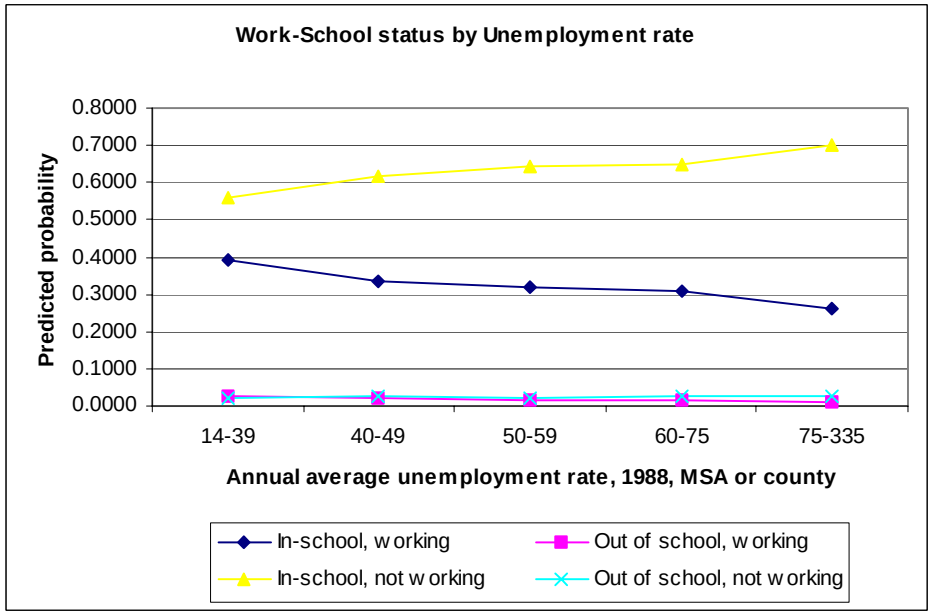
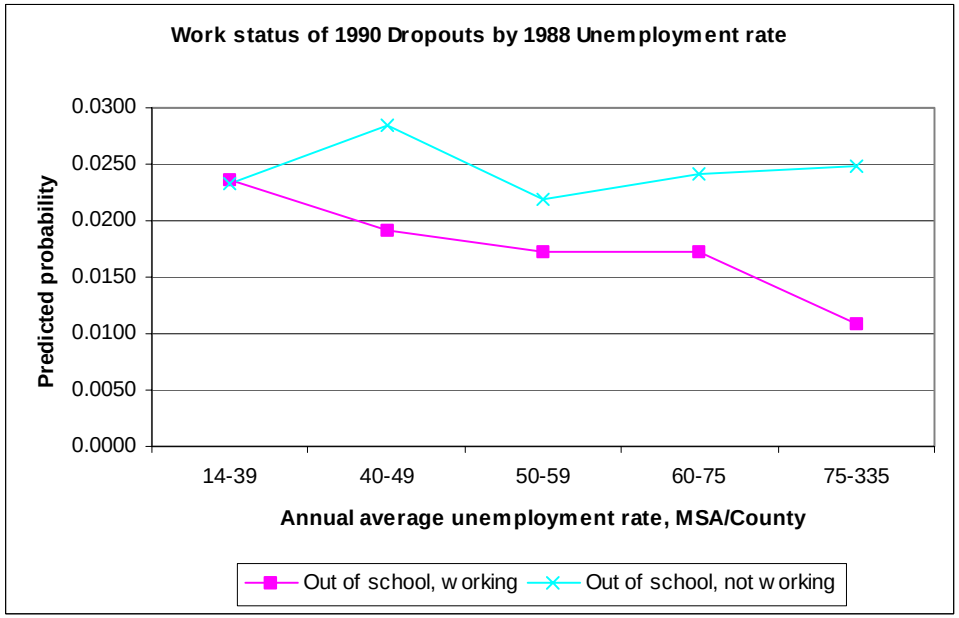


Figure 15



Questions used to construct employment variables in 1990

First follow-up, student questionnaire

"Are you currently employed or have ever been employed?"

Never
Not employed now but was employed during this school year
Not employed this school year but was employed last summer
Was employed prior to last summer
Currently employed

First follow-up, dropout questionnaire

"Are you currently working or have you ever had a job?"

Never worked
Not working now but worked before
Currently working

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