# Advanced Data Analysis I

University of New Mexico Statistics Fall 2015

# Great Expectations: Adolescent Working Hours, College Expectations, and the Role of Parental College Concern



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#### Introduction

- ▶ I would like to know if working hours during high school is associated with college expectations. Second, does parental college concern moderate this hypothesized association? [3].
- ▶ During preliminary fieldwork, I interviewed two University Undergraduate Advisors from two programs—the first served Latino undergraduates and the other served First-Generation and/or Low-Income undergraduates. I learned about a parental phenomenon that may affect the student's academic confidence, and hence motivation. The advisors described that some Latino students' parents, if in low-income bracket, did not fully support college-going in favor of working. Also, the sons would be expected to work, while daughters were expected to go to college. [1, 3]
- ▶ I designed this study into categorical terms first: I hypothesize that working hours during adolescence is negatively associated with level of college expectation; and, this relation is conditioned by parental college concern. I further hypothesize that Latino males' college expectations decrease is accentuated by low-parental college concern, above and beyond a lower, base-line accentuation on the entire sample population. [2, 1, 4].

### Research Questions and Objectives

- ► Are working hours in high school negatively associated with college expectations?
- ► Secondly, does high parental college concern moderate the relationship between working hours and college expectations? If so, Do Latino groups have differing expectations?
- ► Third, do later Wave 4 college graduation outcomes correspond to expections in the hypothesized negative association with hours worked?

#### Methods

#### Data sources

1. National Longitudinal Adolescent Health Study, Stratified, cohort 1994-1995 Wave I and 2004/2005 Wave IV; N=3,694 Adolescent students

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- 1. linear regression of college expectation on working hours, b = -.004p < .05. Parental college concern, b = .31, p < .001. No statististically significant interaction of two DVs; and Welch two-sample t-test below.
- 2. Logistic regression model of hours Worked and probability of later College graduation: -1.07, i.e., 7 percent less likely ...

#### Results

- 1. H1: Initial Hypotheses Confirmed, except for Latinos: Working hours during high school have negative association with college expectations. \* Latinos and Native Americans exact opposite—they increase in college expectation when hours increase.
- 2. H2: Fail to reject null: Multiple regression of DV Coll. Expectation regressed on interaction between Parenting college concern and working-in-high-school in the association with expectation-to-go-to-college.
- 3. H3 (Wave 4): Null rejected: Hypothesis that Wave 4 college graduation outcome variable (probability of BA) is negatively associated with working hours in high school is confirmed by logistic regression.

#### New and Exciting Directions

► The results indicate statistically significant relationships between college expectations of working adolescents and parental college concern. The new frontier will be to compare peer network associations with parental associations.

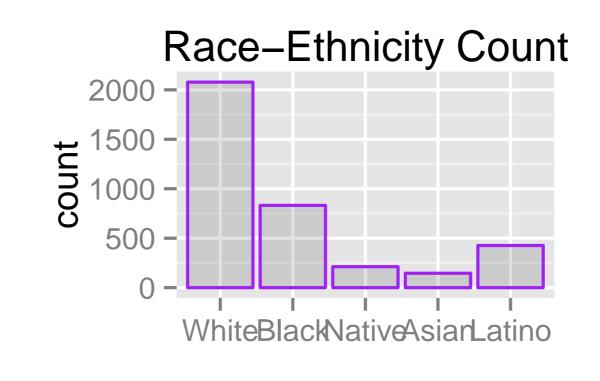
#### References

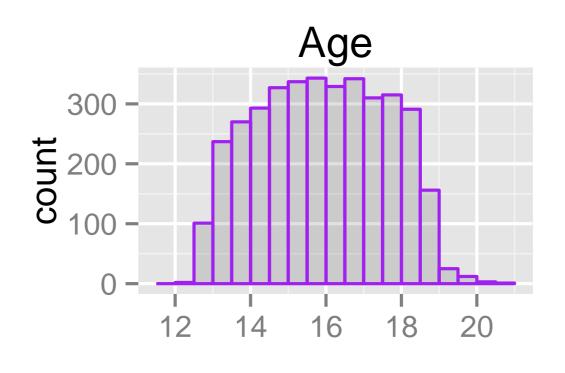
- [1] Stephanie A. Bohon, Monica Kirkpatrick Johnson, and Bridget K. Gorman. College Aspirations and Expectations among Latino Adolescents in the United States. Social Problems, 53(2):207–225, 2006.
- [2] Pamela E. Davis-Kean. The Influence of Parent Education and Family Income on Child Achievement: The Indirect Role of Parental Expectations and the Home Environment. Journal of Family Psychology, 19(2):294–304, 2005.

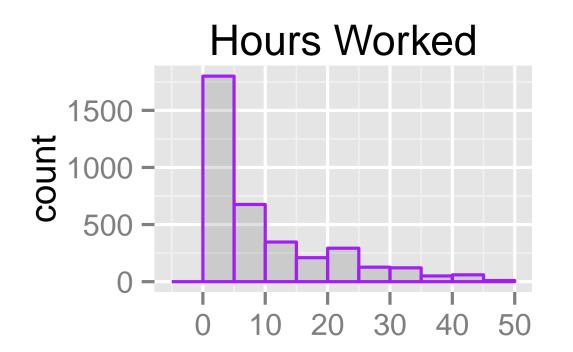
# [3] Frank F Furstenberg. The Sociology of Adolescence and Youth in the 1990s: A Critical Commentary. Journal of Marriage and Family,

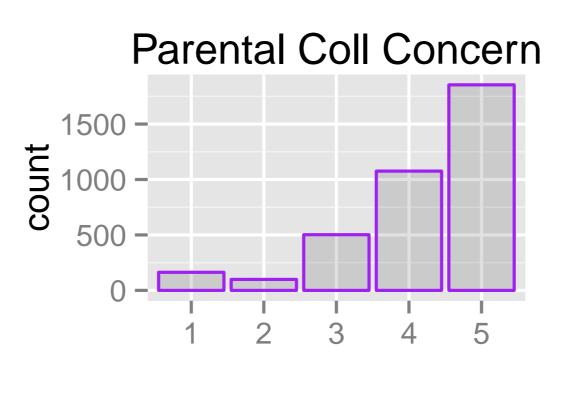
# College Expectations by Hours Worked, Conditioned by Parental College Concern

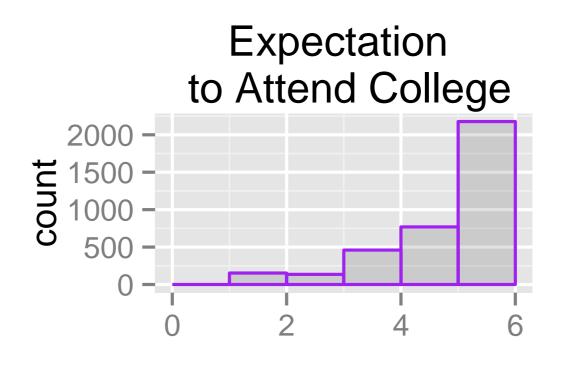
"Results indicate an s.s. positive relation between college expectations and parental college concern, b= .31, p< .001. There is negative relation with working hours, b= -.003, p=.036; Parenting does not condition the association of college expectation and working hours. "  $H_0: \mu_{HPCC} = \mu_{LPCC}$ versus  $H_A: \mu_{HPCC} \neq \mu_{LPCC}$ 

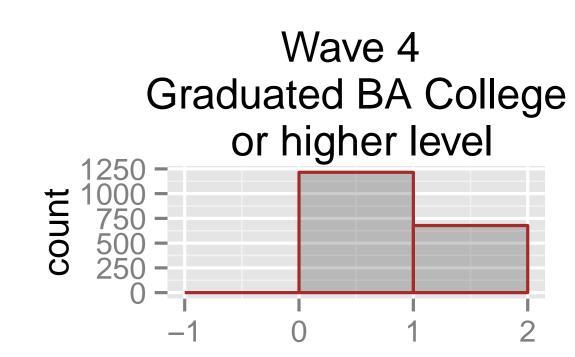


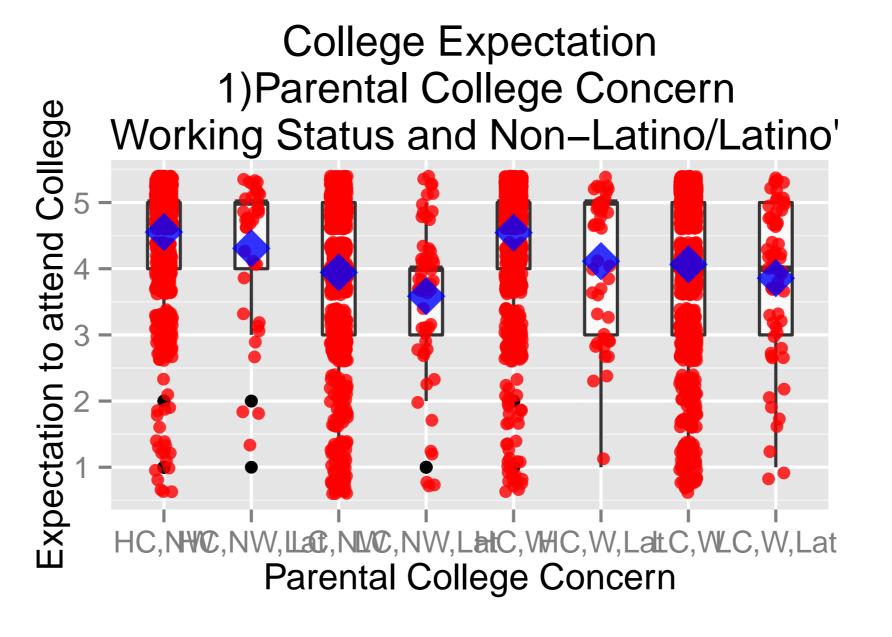


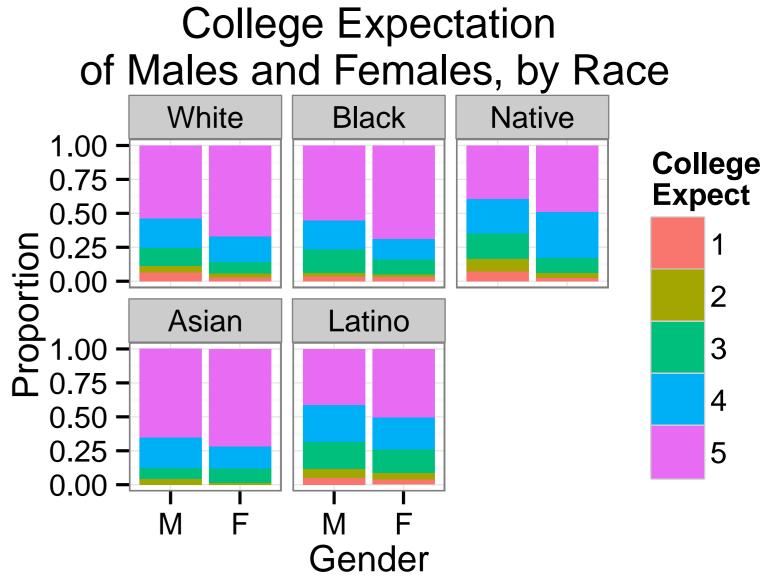


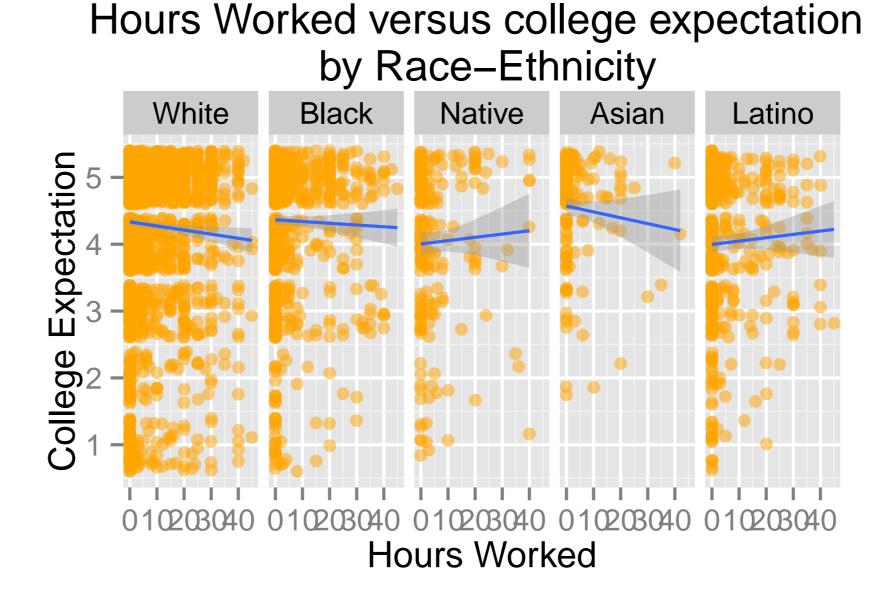


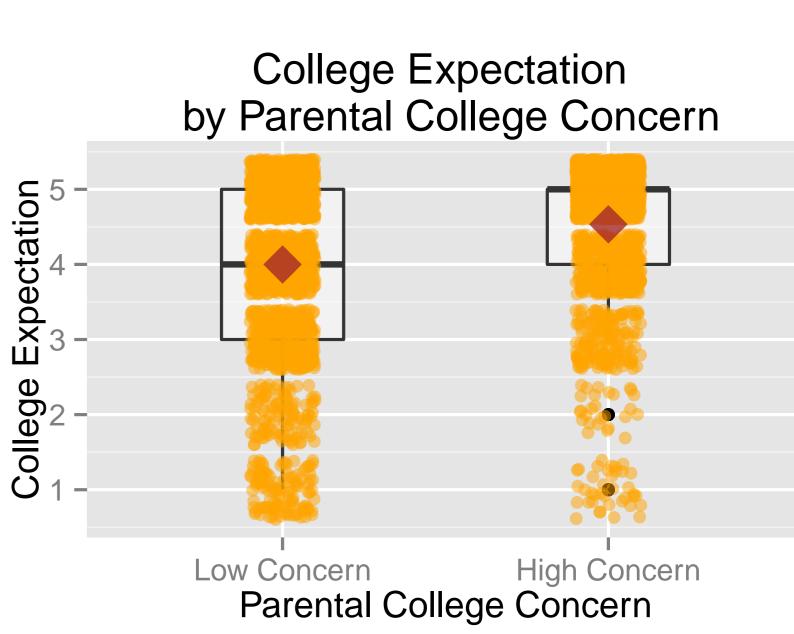








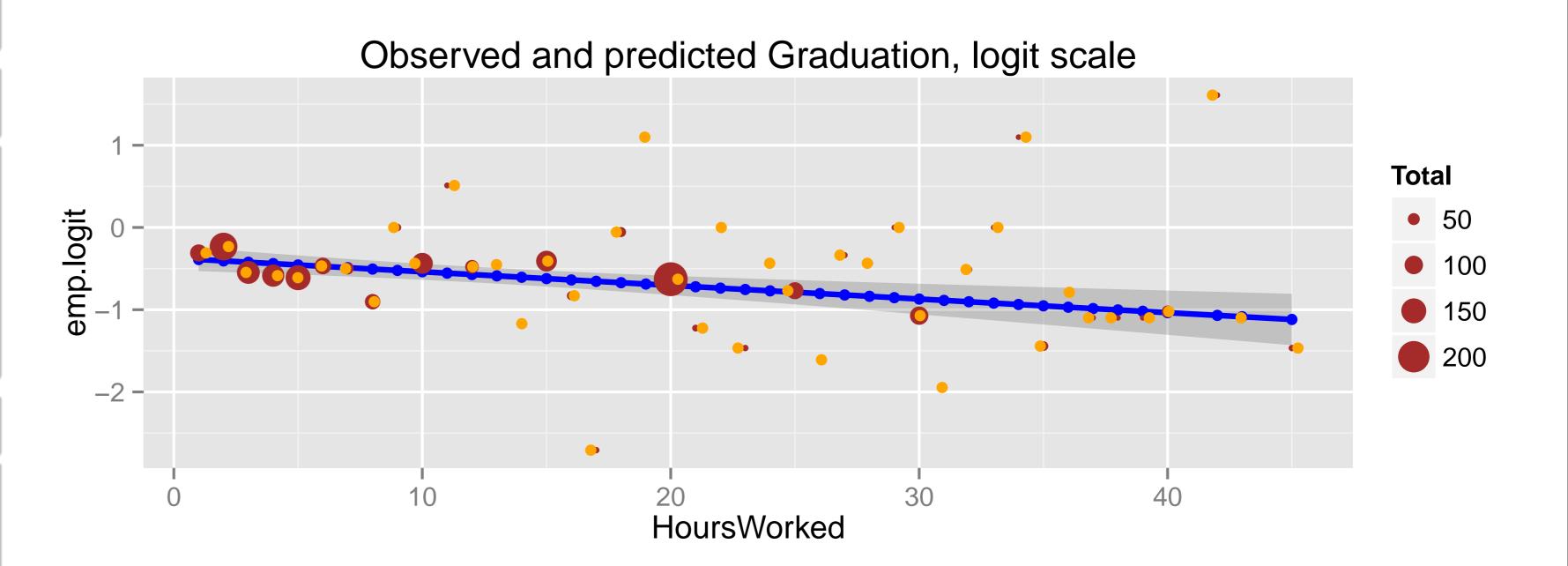




'Is the population mean college expectation different for those with Parents of High College Concern(HPC) versus those with low College Concern(LPC)?" \*  $H_0: \mu_{Hi-ParConcern} = \mu_{LPC}$ versus  $H_A: \mu_{HPC} \neq \mu_{Lo-ParConcern}$  Let  $\alpha = 0.05$ , the significance level of the test and the Type-I error probability if the null hypothesis is true.  $t_s = rsignif(t.summary.Exstatistic, 4)$ '.p='r signif(t.summary.Exp.value, 3)', this is the observed significance of the test. Because p = rsignif(t.summary.Exp.value, 3) < 0.05

## Wave 4, 20 years later: BA Graduation

"Do Working Hours in adolescence associate with probability of graduating College?"



▶ Hours Worked associated with reduced odds of graduating college, b = -0.017, p < .001