



“(Un)informed College and Major Choice”: Verification in an alternate setting



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ABSTRACT

In their recent paper “(Un)informed College and Major Choice: Evidence from Linked Survey and Administrative Data,” Hastings, Neilson, Ramirez, & Zimmerman (2016) provide an informal costly-information model, linking family background to students’ beliefs about educational costs and benefits. They verify predictions of their model using a data set of beliefs about college institutions and majors among Chilean college applicants and students. I test some of those same predictions using a data set of beliefs about college institutions and different levels of college education among high school students in the United States. I verify their predictions, with some exceptions, supporting the use of their costly-search model.

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1. Introduction

The decision to pursue education has significant labor market implications. To approach the decision rationally, a student must consider the costs and benefits of each available option. However, mounting empirical evidence shows that student expectations of costs and benefits are noisy and vary across students.

Hastings, Neilson, Ramirez, and Zimmerman (2016) (hereafter HNRZ) contribute to this literature with their large-scale study of student beliefs in Chile. They gather beliefs about the earnings and costs associated with different college institutions and majors from Chilean college students and applicants. The authors aim to provide descriptive evidence on the characteristics of these beliefs, and show how they relate to student choice.

HNRZ is a part of Proyecto 3E. Proyecto 3E is a study of college and career choice in Chile, carried out with

the support of the Chilean government. The Proyecto 3E database follows fifteen cohorts of high school graduates through college and is linked to administrative Chilean government data. The use of novel interventions as well as depth and size of the data set (the HNRZ sample includes 7382 students) gives Proyecto 3E the potential to be one of the most fruitful studies of college and curriculum choice in the modern literature, and to improve the Chilean education system.

HNRZ is not the first product of Proyecto 3E. Previous work has produced causal estimates from regression discontinuity of the returns to different majors, which have commonly been elusive and difficult to identify in prior literature (Hastings, Neilson, & Zimmerman, 2013). Other work has examined the effect of student loan caps based on the earnings of prior graduates in a given major, and how the caps may guide low-income students to choose higher-earnings majors (Beyer, Hastings, Neilson, & Zimmerman, 2015). Hastings, Neilson, and Zimmerman (2015) reports the results of an earnings belief intervention experiment, a field experiment similar to the lab

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experiment of [Wiswall and Zafar \(2015\)](#). Student loan applicants are presented with expected earnings and cost information about available degrees. While the information has little effect on matriculation, low-socioeconomic status students in the treatment group are more likely to enroll in degrees with higher earnings net of costs.

HNRZ continues the research agenda, and provides one of the largest scale studies of student beliefs about college costs and benefits. HNRZ find that student beliefs are on average accurate for costs, but that beliefs are noisy and vary heavily over students. While cost expectations are on average accurate, earnings expectations are not. On average, students overestimate early-career earnings among the graduates of their first-choice institutions by 39.3%. They also find evidence that, while beliefs about earnings are not strongly linked to matriculation, they are related to major choice. Students with higher expectations of earnings are likely to choose majors that on average lead to lower earnings and graduation rates, and higher loan default rates. Students who overestimate costs are less likely to matriculate in any institution, including the program they declare as being their first choice, and are more likely to drop out.

Importantly, HNRZ stand out from the rest of the literature on student expectations by providing an informal theoretical framework for differences in student beliefs based on the costs of gathering information. Students who value financial outcomes less or who must pay a high cost to gather information are likely to gather less information.

Based on this model, HNRZ highlight five predictions, detailed in [Section 3](#). Each prediction is an implication of differing student preferences for information or differing costs of information across groups. HNRZ evaluate these predictions using Chilean Proyecto 3E and administrative data and find support for them. As they note, there is a need for the model to be tested in alternate settings. In this paper I evaluate four of these predictions using the data set from [Huntington-Klein \(2015\)](#) (hereafter HK),¹ which comes from a 2012 survey of high school juniors and seniors in the United States and focuses on differing levels of education rather than major choice.

I find strong support for two of the predictions, partial support for another two, and also find differences in informational access across groups as expected.

2. Comparing HNRZ and HK

This paper aims to test the predictions of the HNRZ model using the data set from HK. The HK data set comes from a survey of 1,224 high school juniors and seniors at thirteen high schools in King County, Washington, which includes Seattle. The survey was administered using paper and pencil, and a study representative was always on hand to answer questions. The survey elicited student beliefs about earnings and the probability of employment conditional on the level of college education, as well as

anticipated tuition and aid at four well-known Washington State colleges and university systems.² The data set also includes attitudes towards education and basic demographic characteristics. More information about survey design and administration, sample statistics, and response rates are in [Huntington-Klein \(2015\)](#).

The HK data provides an excellent opportunity to test the predictions of the HNRZ model. The HNRZ model is not designed to be specific to the Chilean context, but rather rests on basic principles of costly information. As such, we would expect the predictions to hold wherever students face information costs. The HK data can be used to test the model in a very different setting, while also maintaining several features that are similar to the HNRZ data, which makes HK a good candidate for comparison.

One useful feature of the HK data is that the sample consists of high school students who are not yet in college. Student beliefs in HK are prospective, and are taken from students who may have thought about or researched college but who have not yet attended. Like the college applicants in HNRZ, these students gather information through means other than actual college experience. So, the information gathering processes in both samples may plausibly be described by the same costly-information model.

Another convenient feature of the HK data is that it includes several variables that are present in the HNRZ data but not all data sets of student beliefs. HK and HNRZ both elicit student information sources, asking where they learned about college and careers. HK and HNRZ also ask students about their attitudes towards education and how important earnings are in making educational choices. Students are asked about their first-choice educational options, which allow both data sets to similarly handle costs and earnings, since beliefs may be more or less accurate depending on whether or not the student expects the information to be relevant to their future. Finally, both HK and HNRZ distinguish between a student's expected earnings for *themselves* as opposed to earnings for the *typical person*.³

Lastly, the HK data were collected in 2012, before the HNRZ theory or results were made public. The design of the HK survey cannot have been influenced by knowledge of the HNRZ data it is to be compared against.

Some features of the HK data make the comparison less straightforward. First, the HK data does not follow students through college, and so the HNRZ prediction that students who arrive at degree programs with inaccurate expectations should be less likely to graduate cannot be tested. Second, there may be fundamental differences in the way that students collect information about *levels* of college education as opposed to college major. If these differences are great enough, then the HNRZ predictions about earnings expectations would not be expected to hold, since HK elicits earnings expectations conditional on level of education, as opposed to major in HNRZ.

¹ Their fifth prediction, concerning college dropout, cannot be tested here because the HK data set does not follow students through college.

² The University of Washington, Washington State University, Western Washington University, and Seattle Community College.

³ HNRZ also include earnings for the typical person in their gender and test score group.

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