Hirability and Educational Prestige

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Abstract

Alternative credentials offer a partial solution to the skill gap and student debt crises, supernormal returns for some students, and a tool to support diversity hiring for firms. This paper tests the hypothesis that educational prestige explains hirability better than accreditation. Results from an original questionnaire ($n = 454$) confirm that prestige explains comparatively more hirability variance. Accredited credentials have higher average prestige, but alternative credentials have a larger variance in prestige, so a significant number of job opportunities favor the nontraditional student. When prestige is low, hirability for alternative credentials remains nontrivial. Analysis using ordinary least squares and linear mixed models demonstrate that industry, state, individual, and other effects favor the nontraditional student in specific cases.

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1. Introduction

The accredited degree is an established means toward desirable labor outcomes, but proliferation of the degree is associated with a variety of well-understood issues including the student debt crisis, skill gaps, grade inflation, low social return, and contribution to lack of diversity in the labor market. Alternative credentials, or non-accredited credentials, are a broad category of offerings that exhibit greater variation intensity, price, and outcomes[1]. This paper hypothesizes that variation in the properties of alternative credentials contemporaneously inhibit normal usage and support occasional superior results.

Strategic usage of alternative credentials requires a qualitative description of the occasions in which they provide superior results. Decomposition of alternative credentials can be accomplished through a variety of lenses, and this paper takes the lens of prestige. This paper tests the hypothesis that prestige is a better explanation of willingness to hire than accreditation. Results are made practical through the description of low-effort methods to identify of high prestige alternative credentials.

The motivation for the lens of prestige extends from the literatures on education economics and the economics of social norms. Education economics provides two mainstream accounts of the value of a degree. One account is the human capital model and the other is the signaling model. The human capital model explains that improved labor outcomes result from skills gained by a student in the course of education.

Alternative credentials are regarded as preferred to the traditional degree for the attainment of specific technical skills[2]. For this reason, many college graduates supplement using alternative credentials. Some alternative learning providers specifically target this market with a special kind of alternative education called last-mile training. This presents an explanatory problem for the human capital model. If better labor outcomes arise from skill enhancement, then alternatively educated individuals should enjoy better wages, employment

rates, and so on, compared to college graduates.

The signaling model holds that credentials signal a basket of applicant qualities that are valued by employers. Proponents of the signaling model commonly argue that the college degree signals intelligence, work ethic, and conformity[3]. This presents a testable contrast to the signal of an alternative credential. Alternative credentials also signal intelligence, but they may not signal work ethic, and they are generally expected to signal non-conformity rather than conformity.

This paper hypothesizes that prestige is valued by employers as a signal, and indeed it is in part a signal of conformity. Google is a prestigious employer and also an alternative learning provider. From the point of view of Google, their own credential is a preferred conformity signal as well as a signal of skill. The case of employer-provided credentials is interesting, but it is not the main argument in this paper. While conformity and prestige intersect at times, this paper does not suppose they are identical nor generally correlated. Instead, this paper argues that these are two social characteristics that are valued by employers and a lack in one may be compensated for by the presence of the other.

In a broad review of economics and norm types, hiring decisions exist within what Elster would identify as work norms[4]. Elster supports a rational model of work norms, with the caveat that social interactions may involve unobserved emotional effects. Similarly, the neoclassical model utilized in this paper comes with the caveat that applicability of results is constrained in cases where a hiring decision is made subject to abnormal emotional effects. This paper will also make use of the distinction between social and legal norms provided by Elster.

Within the economics of work norms, Rivera is one scholar to have recently operationalized social norms as prestige[5]. Rivera finds that prestige is important in her analysis, but the scope of her analysis is focused within an analysis of traditional education and a few specific industries including health and law. The current paper extends the analysis of prestige and hiring norms across many

industries and to include alternative credentials.

As a preview, statistical evidence confirms that prestige independently explains hirability better than accreditation alone, but accreditation fails to be explained away. Instead, models that use both factors produce superior estimates of willingness to hire. The independent importance of accreditation indicates that asymptotic improvement to alternative credentials are unlikely to fully compete away the traditional education system. The failure of arbitrary technical and social gains in alternative credentials to fully crowd out traditional education supports the analysis of legal norms for further remedy. The conclusion describes policy options that solve for the remainder of concerns in higher education that survive competition from alternative credentials.

2. Description of Data and Methodology

This paper investigates an original set of online questionnaire responses ($n = 454$). Responses are cross-sectional data obtained in March of 2021. Respondents are United States citizens at or over the age of eighteen. Qualified respondents participated in the survey through the Amazon Mechanical Turk platform.

Appendix A contains the exact wording and response options for each question. Appendix A also contains the wording for a priming message presented at the start of the survey. The priming message lays out the definition of alternative credentials for the purposes of the study. The message also provides several concrete examples of alternative credentials, including "a Certified Project Manager certification, a portfolio of work, a Khan Academy profile, or a Nanodegree from Udacity."

The dependent variable of interest is called hirability. This variable measures individual response on a 10-point scale to the question, "For many professions, alternative credentials can qualify a person for an entry-level position." The questionnaire is composed of three sections. The first section collects respondent characteristics and baseline hirability. The second section collects hirability and

prestige responses with respect to nine specific learning providers. The third section collects hirability and prestige responses with respect to eight vignette learning providers.

Data from the first section is used to optimize an ordinary least squares model. Vignette data is analyzed as panel data in a mixed model with individual random effects. The vignette analysis allows theoretically clean comparison of prestige and accreditation coefficients, but it encounters a problem in that the schools are only vignettes rather than actual learning providers. As a third analytical step, learnings from the vignette model are checked for robustness and made practical through comparing and contrasting descriptive statistics with concrete learning provider information from the second section.

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fourteen questions. Favorability is the dependent variable of interest. Coronavirus impact is the independent variable of interest. There are also ten control factors and two questions on causality.

Eight of the ten control factors are common controls in the literature. These eight controls are categorical measures for for age, gender, ethnicity, income, level of education, employment status, the industry of occupation, and state of residence.

The two remaining controls are unique to this study. Expected conventionality is the first unique control. Expected conventionality is the term used to describe the response to question three in the appendix. Expected conventionality explains the effect on favorability that is attributable to the future social acceptability of alternative credentials. Correcting for social acceptability allows the remaining effects to be interpreted more accurately as an individual preference.

The second unique control is support for online education. Online education is the response to question four in the appendix. This control allows an analyst to hold constant the mode of instruction when interpreting favorability to alternative credentials.

The primary interest of this study is to identify the effect of coronavirus on

favorability. If the effect of coronavirus is significant, a description of the origin of that effect improves the value of the results. The two unique controls and the two questions about causality support investigation into exposure to remote activity as an explanation.

The variables of interest, causality questions, and the two unique controls obtain Likert-type responses. The impact of coronavirus and the causality questions use a 4-point scale. Favorability and the unique controls use a 10-point scale. Continuous treatment of items on the 10-point scale permits curvilinear analysis, allowing investigation of marginal effects [1].

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This study uses multiple regression and descriptive statistics to generate results. Multiple regression is conducted using ordinary least squares (OLS) and linear mixed models (LMM)

1. Online questionnaire 2. how was nonresponse bias addressed? - maybe not at all - main way to address nonresponse bias is to explicitly capture and correct for all of the individual characteristics that matter: ethnicity, age, income... - it would not be enough to show nonresponse bias exists; - it would need to be shown that it exists in the direction of some effect that moves the relation of interest in a predictable and meaningful way; - else the criticism is an argument from ignorance which due dilligence has been undertaken to preclude. - https://forum.effectivealtruism.org/posts/a6LMQcER6Awhawtqq/using-amazon-s-mechanical-turk-for-animal-advocacy-studies - above indicates overstatement of effects...i would want more info...there is a paper internally cited - above also deflates income nonresponse bias consern (these don't pay much so systematic

[1] It is an accepted practice to treat Likert-type responses as either categorical or continuous for regression analysis. Jaccard and Wan provide support for continuous analysis of Likert-type data. They note that severe departures from the assumptions on cardinality "do not seem to affect Type I and Type II errors dramatically," particularly when the Likert scale is five or more points[**?**]. This paper treats responses on a 10-point scale as continuous. This paper treats responses on a 4-point scale as categorical.

bias from rich ppl) also i explicitly capture income anyway - "AMT was found to be a reliable source of data and to diminish the potential for non-response error in online research" - https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4397064/ - https://duckofminerva.com/2013/07/mechanical-turk-and-experiments-in-the-social-sciences.html - https://www.tandfonline.com/doi/abs/10.1080/10967494.2016.1276493 3. How were ratings subjects selected? min 2*2*2 (isQuality)*(isBootcamp)*(isKnown) social and individual ratings [10 point likert-type unit] 4. a few correction variables based on literature review and computed norm factors how

3. Results

Results ($n = 454$) indicate that accredited degrees are generally higher in prestige compared to alternative credentials. At the same, alternative credentials are associated with significant hirability, and alternative credentials are preferred to accredited degrees in a certain common situations.

Three specific situations are identified in which an alternative credential is preferred to a degree from a hirability perspective. First, specific alternative credentials are of particularly high prestige. This study found that a credential from Google was regarded as better than some accredited degrees.

Second, some individuals place high value on alternative education. This study found that 71 percent of respondents preferred at least one specific alternative credential to at least one specific accredited degree. This proportion increases to about 75 percent when respondents are given rating data provided from online aggregator and review sites. These sites include US News and Course Report, and they aggregate learning providers, report standard information about those providers, and allow users to leave reviews.

More than half of respondents prefer a high prestige alternative credential to at least one high prestige accredited degree. After excluding the highest prestige alternative credential from Google, more than one-quarter of respondents still prefer one of the remaining high prestige alternative credentials to at least one high prestige accredited degree. When asked directly, about 42 percent of re-

spondents state that they do not prefer to work with a person that has a college degree rather a person that holds a reputable non-college credential.

Third, in some cases there are indirect compensating factors, such as industry or state effects, that enhance support for alternative credentials to the extent that they become competitive with an accredited degree. In one regression model discussed later on, a state effect for California is positive on hirability to the extent that it compensates almost exactly for the hirability penalty from non-accreditation.

Zety is in part a job search support platform. Zety finds that one in six job applicants are given an interview, and the average conversion rate from interview to offer was 19.78 in 2016[6]. Assuming rejections are independent allows us to naively estimate that most job searches consist of at least four interviews[2] and dozens of applications. Given the rates at which respondents prefer alternative credentials to accredited degrees, a job search of typical length is likely to include several applications and at least one interview with one or more employers that would prefer an alternative credential to an accredited degree.

Average hirability among the sample of

1. summary Results (percent prefer degree, prestige high-low stipulated vs prestige yes-no accreditation) 2. vignette Results (prestige vs accreditation on hirability) 3. concrete results (translating prestige into aggregation site metrics; no fav reg) b. context effect 4. [optional] did stipulated prestige match response prestige? did response prestige correlate to aggregation site metrics?

1. did perceived prestige explain willingness to hire? 2. did normal prestige explain willingness to hire? 3. is a prestigious alt cred better than a non-prestigious university? where are these prestige cutoffs? are they 1:1? 4. how substantially did individual prestige vary from normal prestige (more variation indicates that it's easier for low-prestige to find a match somewhere)

[2]Four independent games that each include an eighty percent chance of rejection yields $0.8^4 = 0.4096$. The associated probability of having at least one offer result from four interviews would be about $1 - 0.41 = 0.59$, or 59 percent, which is more likely than not.

arguments roughly 1. summary data: stipulated high quality alt creds vs others and proportion that would weakly affirm 2. non-panel models of favorability 3. panelized model of vignette (primary regression analysis) 4. analysis of concrete data using descriptive statistics and insights from the vignette study

conclusion - implications for application from the consumer perspective and supply-side (getting on an aggregation site nbd, naming important, public branding)

theoretically (low-prestige + not well known) ¿ (low prestige + well known). did that seem true?

4. Conclusions

policy recommendations are constrained in recognition of the political economy of education as a turbulent, endogenous, entangled thing, in contrast to a simplistic analysis that might treat politics as a thing distinct from and able to exogenously move the economy (wagner: Wagner argues contra Becker and other neoclassicals that so-called political competition doesn't get you to the efficient economic outcome. "Unlike market entities, political entities cannot generate their own revenue. To support their activities, political entities must attach themselves parasitically to market entities and activities" so, rents still exist in some form or another, usually vis a vis an indirect transaction: 'an indirect form of transaction, not different in form from the various indirect transactions that arise in the presence of price controls' from american democracy comes a forced triad traces the problem all the way to the american constitutional architecture. at some level, a full resolution to the problem would require competition at the level of the constitution; insert plug for seasteading it's not actually even clear that the success of seasteading or another form of constutional competition is less feasible than change in the below 8 laws;

also cite leeson/boettke robust political economy to emphasize the perhaps unexpectedly high difficulty of substantial change perhaps refer to the friedman rule about how, even if we got the legal change we asked for, administrative

costs and so forth could result in cost/quality differentials that are in excess of what we want

perhaps a short history of educational change policy; media and social reaction (eg faciliation under trump was decried) to emphasize the general pessimism extends into education and it perhaps accentuated rather than attenuated in this particular policy field

so, constitutional competition is the great height at which the last remainder of educational policy consequence can be addressed at the macro level express optimism that much can be done at the mesoeconomic and micro levels; individuals, and firms and even meso entities like states and industries can and are already doing much...

The conclusion describes policy options that solve for the remainder of concerns in higher education that survive competition from alternative credentials. 1. remove accreditation 2. lower the bar for accreditation 3. remove professional requirements that include requirement for accreditation 4. remove legally enshrined preferential treatment of accredited credentials (esp government pay scales and in government contracts) 5. how to fill the gap? define skill-based requirements instead of accreditation (better outcomes for govt and all) 6. (institution based vs skill or course based accreditation) 1. ...see 8 for a non-policy workaround (but working around is likely more costly than direct fix) 6. aggregators need to do a better job 7. individuals don't need to wait for social movement to reap individual-level benefits 8. hybrid approach; universities can (and increasingly already do) partner with external providers for a win-win 1. better university placement rates 2. better university solutioning of the skill gap 3. accreditation given fully or partially (ACE; professional credit) to unaccredited partners (institution based vs skill or course based accreditation)

1. overall is there evidence that bootcamp can replace college due to prestige effects? what caveats? - we need to consider price in the real world - we had a threshold of name recognition to ensure statistical confidence; what happens if we drop below that? say a bootcamp w less than 30 reviews? 2. online education isn't a good fit for all learners 3. parental preference matters;

if parents will finance university but not bootcamp (or vice-versa) then effective cost to student is modified - this also presents a channel for pro-ACNG movement 4. policy differences: government or employer may provide financing or employment conditinoal on a certain type of educational participation

overall advice: as an individual, work backwards from a particular desired job description as a society: push for policies which make comparing across types easier, generate lower cost and higher skill outputs, and clearer signals of productivity, reducing demand for prestige which is really 1) a second-best / fallback signal of productivity, and 2) a form of slack and a biased means toward inefficient selection (anti-diversity as a byproduct; again see Pedigree)

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