Perceived Skills Gaps in Alternative Postsecondary Education as Determinants of Hireability ⋆

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Abstract

This paper explores X to understand Y This paper explores a novel data set (n = 1190) to understand trends in public disposition toward alternative postsecondary learning, with a focus on employers. Results indicate that public favorability is positive and will remain flat over the next year. Employer attitudes are not meaningfully different from the general public.

Keywords: education economics, alternative education, candidate fit, job fit, candidate matching

2010 MSC: I21, I22, J20

⋆Go to `https://github.com/Vandivier/research-dissertation-case-for-alt-ed/tree/master/papers/alt-ed-survey` for additional materials including the online appendix, survey data, and data analysis source code.

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1. Introduction

Hiring decisions reflect boundedly rational demand for skilled labor. The college degree and alternative credentials provide two qualitatively distinct signals of skilled labor. The hireability of individuals in possession of these credentials has been studied, but the underlying determinants are not clear. This paper hypothesizes that perceived skill gaps are important determinants of willingness to hire. This paper further hypothesizes that perceived skill gaps are qualitatively different between college graduates and others.

Alternative credentials refer to credentials other than the undergraduate degree[1]. The category includes industry certifications, vocational schooling, noncollege courses, and even portfolios produced during self-study. Individuals pursuing alternative credentials typically intend to leverage the credential in order to obtain employment. That is, they typically have the same ends as those pursuing traditional education.

Obtaining a college degree signals intelligence, conscientiousness, and conformity, but it may not signal technical skill[2]. Alternative credentials signal technical skill. As such, they provide an effective supplement to the degree.

This paper is concerned with another use case in which the degree is entirely substituted. In that situation, employers may apply a noncollege stigma. This is particularly the case for roles which are typically occupied by degree holders. Noncollege stigma is a presumption, expectation, or bias toward perception of a skill gap of a certain kind. Whether the gap exists in fact is out of the scope of the present paper.

Technical skill generally implies intelligence. Alternative credentials, then, fail to signal two qualities compared to the degree. Alternative credentials fail to signal conscientiousness and conformity. Interestingly, some employers may demand some level of nonconformity. Employers may also presume a certain lack of soft skill on the part of highly technical applicants.

1.1. Process Explanations of Suboptimal Wages

Basic price theory holds that an employer should pay wages equal to the marginal revenue product of labor. In the real world, measuring candidate productivity at hiring time is costly and imperfect. A further issue is identified when the hiring team is scrutinized for principal-agent problems. The hiring team is composed of individuals with preferences, calculative limitations, and other biases. Monitoring and correcting for these problems is expensive, so firms will heterogenously realize some aggregation of these individual definiciencies.

Exacerbating the already necessarily imperfect hiring process are candidate-side problems. Firms must hire among a finite, potentially small, number of candidates. Risk aversion to time expense and other search costs may lead a firm to approve a suboptimal candidate[3]. In some cases, candidate pools may be systematically problematic. In law and medicine, for example, extensive education and training are legally required. These policies further restrict the candidate pool, inflate expected wages, and systematically alter the content of education in a politically-motivated manner. Market forces implement hiring as a lumpy expenditure process to begin with, but certification requirements, wage regulation, and other policies extend the problem.

The prior discussion highlights many locations of hiring process inefficiency. The practical importance of magnitudes and kinds of such effects are described in a legion of related papers. A meager sampling of five such effects would include the attractiveness effect and many other issues related to gender bias[4], agentic behavioral stigma[5], and complex biases related to communication style[6, 7, 8]. Sung et al find that impression management meaningfully weakens disability stigma[9]. These tactics are transferable in part to noncollege stigma mitigation. Finally, there are a wealth of concerns about the effects of social media. For one, it presents a channel for the revival of religious discrimination[10].

In the face of so many important inefficiencies, one begins to wonder whether the original theory holds any water at all. Papers which identify matching effects, including the present paper, serve to limit the proportion of explanation attributable to bias and redeem the elementary price theory story to some ex-

tent. Prior work demonstrates the important of matching effects in the form of norm compliance[11]. Meta-accuracy is a kind of matching measure, and it has been shown to move positively with hireability[12].

2. Description of Data

how is skill gap measured? typically, skill of candidate compared to ideal; but this produces on overestimate of the skill gap imo. The typical employee also has a skill gap compared to ideal, so: 1. if the candidate is as skilled as an actual employee, they should be hireable (well, maybe not if org wants to upskill or correct for onboarding costs) 2. if the organization routinely hires recent college graduates, an alt ed candidate should be higherable if their gaps are similar to a college grad.

overqualification concern? aggregate excess attractiveness by recent college grads against ideal. aggregate excess willingness to break rules by alt ed noncollege grads. many non-aggregate, or respondent-level, cases of alt ed overqualification; in fact, some such responses for every question kind (the 13 types)

Only unassailable approach is to compare alt ed to ideal; bc typical employees and recent grads are not always theoretically hireable. Left hand param is favorability. Optional but interesting: college grad to ideal or college grad to alt ed; so that we can indirectly associate favorability to actual propensity to hire. (which we have for college grads)

3. Results

TODO: Table 1 should have skill gaps from preferred model, model 5. so-called semi-robust skill gaps.

This paper acknowledges that own analysis proceeds through a technocentric lens. This is an important anchoring point for the analysis, and it may skew application of results in low-technology or low-skill sectors. The technocentric lens is an important caveat and anchoring point, but I argue that it is about as

Table 1: Table of Multiple Regression on Favorability, Selected Variables

Effect Group Name	Adj R-Sqr	R-Sqr	Max p-value
Industry	-2.240e-01*	-3.831e-01**	-1.507e-01^{+}
Rulebreaker	2.416e-01*	3.223e-01*	1.387e-01
Skill Gaps with Overqualification	-1.259e-01^{+}	-1.512e-01	-1.253e-01^{+}
Skill Gaps without Overqualification		-6.336e-02	-3.896e-02
State, Robust	2.199e-01^{+}	2.298e-01	1.837e-01
State, Semi-Robust		-2.320e-01^{++}	-4.953e-02

proper as any anchoring point. In economics, after all, technology operationalizes the theory of innovation per se. All skills can be viewed as point-in-time innovations, so that if there was no innovation then neither would there be a need for any skill. By the same token, a technocentric lens at the present seems close to a cross-industry lens at a future time. Anchoring to any other industry would be both asymmetric and unusuful in the future. Perhaps this analysis is slightly skewed, but at least it is skewed only against the past, and will be increasingly useful in the future without partiality to any particular industry. In addition, we did check for industrial effects, but the analytical skew may persist pass the data.

4. Conclusions

In David Blake's approach / Degreed's Approach skills are 1-8 and there is no notion of 'overqualification' (for better or worse) https://degreed.com/skill-certification (in this idea, overqualified candidates are qualified; discounts overqualification as detrimental, ie hiring manager doesn't want to hire a report with many years of mgr experience) ... The Expertise Economy measure skill gap as

Table 2: Table of Multiple Regression on Favorability, Selected Variables

	Model 1	Model 2	Model 3	Model 4	Model 5
Gap, Body Language	-2.240e-01*	-3.831e-01**	-1.507e-01+	-3.155e-01*	-3.060e-01*
	(8.314e-02)	(1.124e-01)	(8.980e-02)	(1.173e-01)	(1.145e-01)
Gap, Body Language-IT	2.199e-01+	2.298e-01	1.837e-01	2.791e-01	2.771e-01+
	(1.269e-01)	(1.656e-01)	(1.334e-01)	(1.707e-01)	(1.665e-01)
Gap, Commute		-2.320e-01++	-4.953e-02	-1.197e-01	-1.582e-01
		(9.720e-02)	(6.862e-02)	(1.023e-01)	(1.010e-01)
Gap, Conscientiousness	2.416e-01*	3.223e-01*	1.387e-01	2.174e-01+	2.175e-01++
	(8.000e-02)	(1.045e-01)	(8.483e-02)	(1.129e-01)	(1.093e-01)
Gap, Customer Service	-1.259e-01+	-1.512e-01	-1.253e-01+	-1.276e-01	-1.323e-01
	(6.389e-02)	(9.599e-02)	(7.162e-02)	(1.037e-01)	(1.009e-01)
Gap, Rule Breaker		-6.336e-02	-3.896e-02	-8.535e-02	-1.034e-01
		(1.028e-01)	(6.054e-02)	(1.082e-01)	(1.036e-01)
Gap, Salary		-1.135e-01	3.873e-02	-6.250e-03	
		(8.284e-02)	(6.597e-02)	(8.575e-02)	
Gap, Teamwork		1.227e-01	6.812e-02	1.287e-01	1.131e-01
		(9.179e-02)	(6.963e-02)	(9.697e-02)	(9.505e-02)
Gap, Technical	-1.274e-01+		-9.408e-02	-1.010e-01	-9.806e-02
	(7.443e-02)		(7.702e-02)	(1.023e-01)	(1.001e-01)
Rulebreaker, Culture Add	2.612e-01**	2.829e-01**	2.114e-01*	2.279e-01*	2.235e-01*
	(7.057e-02)	(7.015e-02)	(7.187e-02)	(7.190e-02)	(7.036e-02)
Rulebreaker, Risky	1.688e-01**	1.758e-01**	1.517e-01*	1.472e-01*	1.686e-01**
	(4.993e-02)	(4.813e-02)	(5.160e-02)	(5.063e-02)	(5.006e-02)
Rulebreaker, Rockstars	1.406e-01+	1.748e-01++	1.669e-01++	1.546e-01++	1.655e-01++
	(7.646e-02)	(7.245e-02)	(7.851e-02)	(7.754e-02)	(7.599e-02)
Adj R-sqr	0.3100	0.3491	0.2317	0.2554	0.2866
R-sqr	0.4408	0.4663	0.3409	0.3613	0.3880

Standard errors in parentheses

+ $p < 0.10$, ++ $p < 0.05$, * $p < .01$, ** $p < .001$

skills quotient: https://www.expertiseeconomy.com/speaking

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Notice that the alternatively credentialed individual doesn't need the average employer to value him or her. He or she simply needs some significant chance of being hired, and that certainly exists. Moreover, the average employer is already favorable to alternative credentials. As more alternatively credentialed individuals are highered and promoted through society, there is reason to think the number of opportunities afforded to alternatively educated individuals may grow. The problem doesn't seem to be about whether alternative credentials work, but whether they exist in a given industrial context, and whether an individual would like to pay the college premium for better favorability when both options are feasible.

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