Personality and Ideological Factors of Alternative Learning Favorability

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Abstract

This paper investigates an original data set to understand the effects of personality and political ideology on support for alternative postsecondary learning. Specifically, this study tests whether conservative support for regulation is observed as an effect of personality or constrained mental effort. The evidence indicates that mental effort does not influence support for regulation. Personality effects are important factors of support for unaccredited higher education. Opposite expectation, conservative support for alternative learning is amplified, not attenuated, in a multiple regression with factors of personality.

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1. Introduction

Education economics has sought to explain favorability to alternative education. One paradoxical result is that conservatives favor accredited education[1]. The result holds after correcting for a variety factors including status quo bias, religiosity, and standard controls. This paper hypothesizes that the paradox is a case of non-logical survey response and omitted variable bias. This paper seeks to resolve the paradox by introducing new controls. Specifically, this paper hypothesizes that after correcting for personality and mental effort, conservatism will not be negatively related to support for alternative education. Opposite expectation, conservative support for alternative learning is amplified, not attenuated, in a multiple regression with factors of personality. Important mental effort effects are not identified.

This paper follows prior survey method closely, then adds new controls. Controls are added for personality and mental effort. Grit and Big Five personality traits are captured as measures of personality. Survey completion time is used as a proxy of mental effort and intelligence.

In a behavioral approach, constraints to mental effort are associated with classically inefficient results. With respect to such results, this paper prefers the label of non-logical to irrational. This amounts to a boundedly rational explanation[2].

Risk aversion is a key theoretical reason to control for personality and mental effort. Conservatism is an aggregate symbol reflecting many factors[3]. High levels of risk aversion among conservatives is one such concern of economic importance[4]. Personality relates directly conservative identification[5] and also to risk tolerance.

Conservatives oppose regulation as a matter of ideological principle[6]. Decisioning on ideological principle, however, may tend to occur with high mental effort. Under conditions of low mental effort, risk aversion may dominate in conservative thought process. These hypothetical conditions explain the response in favor of accreditation on the part of a conservative. This paper seeks to test

whether such hypothetical conditions exist in the real world.

2. Description of Data

This paper uses a combination of existing and original survey data. The survey for this paper is based on the Attitudinal Survey on Alternative Credentials[7]. Original observations were obtained through a new administration of that survey with two new questions. Respondents were instructed to take online versions of the Big Five personality assessment and the Short Grit Scale and report their results. Grit is scored from 1 to 5 and Big Five traits are scored from 0 to 100. See Appendix A for question wording.

Survey data is investigated using multiple regression. The dataset includes 2175 observations, but 201 samples are relevant in the preferred model. Personality effects turn out to be important, and only 201 samples include such information.

The dependent variable is favorability to alternative credentials. This study defines alternative credentials as those issued by a non-governmental body. Respondents are primed with the definition of alternative credentials. Appendix A contains the wording of the priming message.

The first independent variable of interest is favorability to regulation. The inverse of this variable is taken as a measure of conservative economic preference. Favorability questions are rated from 1 to 10. The second independent variable of interest is survey completion time in minutes.

Other variables include standard controls for age, gender, ethnicity, income, and level of education. Employment status including whether an employed respondent is a manager is reported. If employed, the industry of employment is recorded for the respondent.

Favorability to artificial intelligence technology is observed. This is interpreted as a measure of innovation bias. Innovation bias is interpreted as isomorphic to inverse status quo bias.

Two other important right-hand variables exist. Respondents are asked

whether they have heard of five popular alternative learning providers. Familiarity is the count of confirmed known providers. Expectation is a response from 1 to 10 to the question "It will soon become fairly conventional for high school graduates to obtain alternative credentials instead of going to college."

3. Results

The first main result involves replication of prior work. Table 1 provides selected coefficients across four models of interest. Selected variables emphasize representation of each category of effect, significant effects, and variables shared across models. M-2018 and M-2019 are preferred models from a prior paper which used the public Attitudinal Survey on Alternative Credentials dataset[1]. M-2019-2 is a replication of M-2019 using new data obtained for the present research.

M-2019-2 involves a larger sample size compared to M-2019. Coefficient significance and direction of effect is replicated. Coefficient magnitude varies with a general lack of importance. The coefficient on being a college graduate changes notably, but it is not a significant factor.

M-2020 introduces factors of personality. Mental effort was not a significant factor. Being a college graduate is a significant and important factor in this specification. Including factors of personality improves total and adjusted explanatory power by about 5 percent. Grit, conscientiousness, and openness were important in the model. These factors were significant at the $p < .18$ level.

The change to the pro-regulatory coefficient is opposite expectation. Partialling out personality factors amplifies the pro-regulatory effect. The pro-regulatory effect is significant and falls within the range of prior estimates. Evidence does not indicate that conservative opposition to alternative credentials is an effect of personality or constrained mental effort. The general concept of conservatism does seem to apply to the problem. The social category of conservatism also does not seem to provide explanation. Correction for religiosity in 2018 shows that social conservatives tend to support alternative education.

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

	M-2018	M-2019	M-2019-2	M-2020
AI	0.700*			-0.708*
AI^2	-0.065*			0.061**
Conscientiousness				0.014*
$Expectation^2$		0.113**	0.106***	0.038***
$Familiarity^2$	0.038	0.146	-0.024	0.111*
Familiarity-Grit				-0.192**
Is College Graduate		0.933	0.493	1.059***
Is Male		-2.458*	-1.579*	0.388
Is Manager		-0.475	-0.424	0.251
Is STEM	-1.212*			
IT Industry	1.830**			0.859*
$Nationalism^2$	0.011*			
Pro Regulation	1.161*	0.268***	0.244***	0.659*
Religiosity	0.120*			
R-sqr	0.5971	0.5257	0.4182	0.4427
Adj. R-sqr	0.5016	0.4373	0.3528	0.3703
N	168	192	298	201

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

The most significant personality factor is an interaction between grit and familiarity ($p < 0.005$). If this factor is replaced with simple grit, the negative direction of effect is maintained but significance is reduced ($p < 0.17$). Notice that the negative direction of effect is opposite in sign when compared with conscientiousness.

Familiarity bias is associated with a positive favorability response. This bias is reproduced in the work on alternative credentials, but in the present data we see that the favorability response is heterogeneous by personality. Specifically, concurrently higher grit and familiarity yield lower favorability to alternative credentials. The interaction effect is not reproduced when conscientiousness is substittued for grit.

A well-cited meta-study in 2017 interpreted grit as a new label for conscientiousness[8]. That paper found that grit was strongly related to conscientiousness ($\rho = 0.84$). The consistency facet of grit showed greater independence ($\rho = 0.61$). The strong correlation between conscientiousness and grit is replicated in the present data ($\rho = 0.73$). The present data also shows a strong correlation between grit and neuroticism ($\rho = -0.66$).

The sign on AI favorability flips in the M-2020 specification. A simple regression of AI favorability on the variable of interest using the new sample maintains this relation, so it appears due to sample variation rather than a specification change.

4. Conclusions

This study introduced controls for mental effort and personality into an estimate of favorability of alternative postsecondary learning. The main hypothesis was that these controls would deflate an apparent paradox in conservative opposition to a market solution. Contrary to expectation, the paradoxical pro-regulatory effect was amplified with signicance. The controls demonstrated importance and improved model power.

Concientiousness and openness were important Big Five traits. Grit was in-

dependently important in a multiple regression over and above concientiousness. Individuals high in grit experienced weaker familiarity bias.

Robustness of the pro-regulatory effect may be explained using a combination of three alternative hypotheses. First, the pro-regulatory effect may represent an unobserved logical structure. This hypothesis makes sense of improved effect identification resulting from added controls. This hypothesis also makes sense of the lack of important mental effort effects.

A second hypothesis is the proxy for status quo bias is ineffective. This explanation holds that status quo bias in education is particularly strong. After correcting for the status quo proxy, there could be residual status quo bias remaining in the estimate.

In this study, favorability to artificial intelligence is used as an innovation proxy. Low favorability is taken to indicate status quo bias. As artificial intelligence becomes normal, favorability tends to become a poor tool to distinguish innovation from the status quo. It seems plausible that for some respondents, artificial intelligence is less a deviation from the status quo compared to unaccredited learning.

The hypothesis of proxy failure may dovetail with an explanation from unobserved logical structure. That is, some conservatives may carve out education as a logical-ideological exception to general market favorability.

A third hypothesis is systematic variation in the sample. This explanation leverages an unexpected difference in the favorability to artificial intelligence in the current sample compared to prior periods. This variation can be taken as random, but it might also be attributable in part to recent massive social adoption of new technologies. COVID-19 has forced massive social change to technology use. This may contribute to unexpectedly rapid normalization of artificial intelligence.

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