

Commitment to the Core: A Longitudinal Analysis of Humanities Degree Production in Four-Year Colleges

As many national commissions and observers have noted, the past forty years have brought unprecedented declines in humanities enrollments and programs in U.S. higher education. These changes are particularly striking in the iconic academic heart of the enterprise, the four-year college sector, where many institutions have diversified curricular offerings well beyond their historic roots in the liberal arts. Colleges have significantly varied, however, in the extent of their retreat from the traditional core curriculum. What factors, then, are associated with maintaining earlier established academic norms in this organizational field? This analysis of four-year colleges' humanities degree production investigates several propositions, concluding that deeper institutionalization and stronger financial resources have been especially important in constraining schools' retreat from the humanities over recent decades. Examination of time-based interaction effects suggests notable evolution in the role of religious affiliation and gender in humanities degree production over the period. Implications of the findings for research and policy are considered.

Keywords: organizational change, liberal arts colleges, college degrees, humanities

Few transformations in U.S. higher education over the past few decades have been more dramatic than the declining public demand for traditionally structured liberal arts curricula, majors, and colleges (Breneman, 1994; Ferrall, 2011; Hartley, 2002). In the humanities, in particular, degree awards have declined relative to other fields since the 1970s and humanities-focused programs, departments, and colleges have encountered increasing organizational and financial stress (Lewin, 2013;

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Richardson, 2005). While these declines have slowed in recent years (Wilson, 2013), *New York Times* columnist David Brooks (2013) recently went so far as to argue that the humanities are being “bulldozed.”

Perspectives on these trends vary widely. Some political leaders are untroubled, expressing doubts about the connections between humanities degrees, graduates’ job outcomes, and economic development. Most prominently, some governors and other policy officials have argued that states should lower subsidies for courses and majors in such fields at public institutions (Alvarez, 2012; Kiley, 2013). Taking a different tack, former Education Secretary William Bennett has argued that the humanities at many colleges have been “so debased, narrowed, professionalized and hermeneuticized” that they have little ultimate value (Nelson, 2013). On the other side, angry humanists have posted anguished defenses (Wieseltier, 2013), and some professional and corporate leaders have stressed the value of humanities degrees not only for graduates’ performance in specific jobs but also for graduates’ capability for creatively adapting to shifting economic conditions, thus helping to ensure the nation’s longer term economic vitality and resilience, as well as its democratic health (e.g., see Schneider, 2012; and AAAS, 2013).

Whether healthy or calamitous, the trend is certainly uneven. Some of the four-year institutions traditionally considered “liberal arts colleges” continue to produce more graduates in the humanities than in other fields, but others have dramatically retreated. Indeed, many in reality offer primarily vocational or preprofessional degrees (Baker, Baldwin, & Makker, 2012; Breneman, 1994). These curricular differences within the sector are accompanied by variation in pedagogy, research orientation, selectivity, and importantly, financing (Lapovsky, 2012). As Astin (1999) and Oakley (2005) have observed, baccalaureate-centered colleges have arguably become more diverse than any other higher-education sector.

Strikingly little is known about the organizational and environmental roots of those variations. In the face of countervailing winds, what kinds of baccalaureate campuses persist in their allegiance to the humanities? Conceptually, which organizational features are associated with such allegiance, and have the apparent influences of those features shifted over time? This article aims to address these questions, with the goal of contributing both theoretically and practically to knowledge regarding resilience and decline in academic production patterns.

The Changing Face of the Liberal Arts in the U.S.

Since the 1970s, the external environments of four-year colleges have changed remarkably. Among the most notable shifts have been: 1) in-

creased demand in the labor market for college graduates with specialized skills (Breneman, 1994), 2) a shift in students' attitudes away from humanistic goals and toward more economically driven goals (Astin, Korn, & Green, 1987; Turner & Bowen, 1990), 3) dramatic growth in the enrollment of lower income and nontraditional students who have tended to prefer practical training over the liberal arts (Brint, 2002), and 4) a shift in federal financial aid policy from grants to loans, which encourage many students to choose occupationally-oriented programs to facilitate speedier repayment. These developments are interrelated, and each may disfavor liberal arts majors and liberal arts colleges (Cameron, 1984).

External influences have arguably had the most impact on less prestigious and less well-resourced colleges, often compelling them to adapt their curricula to meet emerging student demand and thereby to attract the tuition revenue necessary for institutional survival (Winston, 1999). In those settings, occupational and professional offerings have expanded dramatically, while traditional offerings in the arts and sciences have become increasingly concentrated in elite segments of the higher education system, namely at high-status colleges and research universities (Brint, 2002; Kraatz & Zajac, 1996).

The four-year colleges are of special interest in these developments. Historically, their missions have followed the liberal arts archetype, emphasizing broad-based, nontechnical education to prepare students for full, engaged, productive lives (Clark, 1970). And, within those institutions, the humanities have often been viewed as the core and essence of the curriculum (Delbanco, 2012). The trends of recent years can be viewed in starkest relief in those institutions, where curricular and degree-granting changes have been most dramatic. Earlier work suggests that academic and financial resources are important in driving individual four-year colleges' degree-production directions, but that work has encompassed limited time-spans and employed rather lean models.¹ Examining the changes in greater depth than prior efforts may offer additional insight into the forces at work in these adaptations, and their implications for future research, policy, and practice (Kerr, 1994).

Conceptual Framework

Higher education's core products, services, and production processes cannot be rapidly changed—an old-fashioned ice-cream shop can convert virtually overnight to a yogurt shop, but a liberal arts institution cannot quickly become a technical institute. Faculty tenure, capital commitments, facilities characteristics, and financial resources each shape and constrain change in important ways. In these settings, orga-

nizational transitions rarely proceed quickly, and rarely proceed without analysis, debate, and even conflict.

When change does occur, though, it can be driven by several factors. Changes in individual colleges and universities' undergraduate degree award patterns are obviously propelled in good part by student demand: over time, different major fields rise and fall in attractiveness to students. The U.S. higher education system is extraordinarily market-driven relative to other systems (Clark, 1983), and student markets are the most important markets by far. But changing market conditions do not always point in only one direction for institutions: strategic choices must be made, as leaders hire and release faculty and expand or contract facilities in anticipation of certain preferred outcomes. For example, facing a decline in the overall numbers of students wanting strict religious education, many religious colleges may secularize their curricula, but if all were to make that choice, the enduring desire of some students for such education would go unmet. Schools choosing to remain in the niche, perhaps even "doubling down" in it, may in fact be well positioned to benefit because they can help meet remaining student demand. So, student markets in this country's postsecondary sector are unquestionably prominent and influential, but they are not deterministic.

What else, then, drives an institution to change? Several theoretical lenses help to inform thinking on the curricular choices individual institutions make.

First, we propose that there exists an "organizational field" for classic liberal arts colleges, and that institutions' curricular profiles will be differentially responsive to the field's most prominent institutional characteristics, depending on their organizational proximity to the center of the field. DiMaggio and Powell (1983) defined an organizational field as "those organizations that, in the aggregate, constitute a recognized area of institutional life: key suppliers, resource and product consumers, regulatory agencies, and other organizations that produce similar services or products" (p. 143). Later analysts suggested that fields can also incorporate shared cognitive and normative frameworks (Scott, 1994) and networks of peer institutions and associated organizations (Kraatz, 1998). Together, these aspects of fields both provide and constrain strategic choices.

The classic institutional arguments of Philip Selznick were especially important in our conceptualization. In a series of pioneering studies dating back to the 1940s, Selznick observed that organizations vary in the degree to which their values are threatened by the prospect of attenuation and displacement. In highly institutionalized settings, values tend to be deeply infused and thus relatively buffered against organizational

disruptions and reform (see Selznick 1996, for that analyst's reflections on his long-term research program). In higher education, Burton Clark's work (1970) on the "sagas" of certain liberal arts colleges is easily the most familiar and influential example of using a Selznickian perspective on colleges. As Kraatz and colleagues have noted more recently, liberal arts colleges are "a well-established subgroup of organizations in the higher education sector [which] tend to be particularly self-conscious about their values and missions and have previously been portrayed as archetypal Selznickian institutions" (Kraatz et al., 2010, p. 1522; *see also* Kraatz & Zajac, 1996).

As an organizational field, four-year colleges certainly have some archetypally familiar features. These colleges historically have emphasized the particular importance of literature, history, philosophy, and religion in their curricula (Hawkins, 1999; Horowitz, 2005; Veysey, 1965), and a long line of research on college impacts has suggested that small, private liberal arts colleges can be especially influential in undergraduate students' development (e.g., Astin, 1999; Koblick & Graubard, 2000; Pascarella & Terenzini, 2005; Umbach & Kuh, 2006). In most such institutions, students attend full-time, facilitating student socialization, reflection, and academic learning. For those seeking "classic" college settings, and presumably the influences popularized for those institutions in such best-sellers as *Colleges that Change Lives* (Pope, 2006), it seems reasonable to assume that traditional curricular expectations prevail. In turn, leaders of such institutions may be particularly loath to abandon traditional curricular offerings.

Thus, we hypothesize:

- H₁: Smaller institutions will be more likely to maintain their commitment to the humanities.
- H₂: Private institutions will be more likely to maintain their commitment to the humanities.
- H₃: Institutions where students mainly attend full-time will be more likely to maintain their commitment to the humanities.²

Relatedly, we propose that the "embeddedness" of liberal arts orientations on a campus will promote endurance (stickiness over time) of classic curricular models (Clark, 1970). That is, the *depth* of institutionalization surrounding a particular institution will clearly shape and constrain change there (DiMaggio and Powell, 1983). In support of this view, analyses by Brint, Proctor, Mulligan, Rotondi, and Hanneman (2012) found that institutions most invested in the liberal arts have been

especially reluctant to drop those fields over recent years. Similarly, Jaquette found that age and historical traditions tend to stifle academic diversification in well-established liberal arts colleges (2011) as well as movement toward “university” status (2013). As Morphew (2009) has argued, in the most institutionalized settings, felt needs for maintaining perceived legitimacy often outweigh felt needs for dramatic change. In other institutions, however, adaptive responses can be speedier and more dramatic.

In the four-year colleges, age clearly has been observed as a factor in resistance to certain kinds of reform (see Jaquette, 2011, 2013).³ In addition, for similar reasons, ongoing religious affiliations may be associated with endurance in a humanities orientation on campus. Because of theological, historic, and cultural reasons, the specific nature of such connections is likely to vary by religious orientation (see work by Estanek, James, & Norton, 2006, on Catholic institutions and work by Marsden, 1994 on other Christian-affiliated colleges and universities) and is likely to shift over time, and it would be unwise to view religiously affiliated institutions uniformly in any analysis. Overall, however, it seems reasonable to assume that religiosity may buffer institutions from secularizing trends toward the professions. Thus, we hypothesize:

- H₄: Older institutions will be more likely to maintain their commitment to the humanities.
- H₅: Religiously affiliated institutions will be more likely to maintain their commitment to the humanities.

A striking characteristic of gender relations in the U.S. is the stereotyping of liberal arts studies as a primarily female domain and scientific, technical, and mathematical studies as hegemonically male (Hill, Corbett, & St. Rose, 2010). Putting aside the troubling social and economic implications of those views, and putting aside the predominance of women in certain professional fields of study (e.g., education, social work), there is no denying that women are underrepresented in STEM degree programs (*ibid.*). By extension, it follows that institutions with large proportions of women students will be less likely to abandon the perceived preferences of those students in favor of movement away from the humanities. Thus, we may hypothesize:

- H₆: Institutions with large proportions of female students will be more likely to maintain their commitment to the humanities.

We next propose that the nature of each institution's resource dependencies (Pfeffer, 1982) will have critical influences on curricular change. Curricular change can be costly in financial and other terms, and if resource conditions warrant, maintaining the status quo is preferable to undertaking substantial change. Because highly selective institutions typically have deep pools of applicants and typically reject many academically acceptable students who, if admitted, could count on their families to willingly pay full price for their attendance, they may be less likely to move away from existing offerings. Having deep admissions pools can buffer such schools from the exigencies of external shocks and threats emerging from labor markets and the larger economy. In other words, when conditions warrant, leaders in deep-pool settings are able to manage admissions to craft student bodies more able to pay full price, rather than taking the more costly route of shifting curricula.⁴ Support for this perspective comes from recent work by Jaquette (2011) indicating that having a strong market position helps reduce the likelihood of four-year colleges moving to diversify and expand their curricular offerings. Being able to obtain, on short notice, first-year classes requiring less aid to attend allows reduced institutional commitments to tuition discounting, and thus constitutes a critical resource to deflect curricular adaptation.⁵

H₇: More selective institutions will be more likely to maintain their commitment to the humanities.

Similarly, institutions with substantial financial resources immediately or indirectly available may be especially well positioned to resist market pressures toward increasing professional degree offerings. Jaquette (2011), for example, found that institutions able to tap diverse revenue sources have been less likely to diversify and expand their curricular offerings. Work by Brint and Karabel (1991), Kraatz and Zajac (1996), and Brint, Riddle, Turk-Bicacki, and Levy (2005) is similarly supportive. Most recently, an intriguing analysis by Taylor, Cantwell, and Slaughter (2013) investigated the proposition that institutions with heavy reliance on humanities degree production effectively pay a "tax" on revenues in quasimarkets that disfavor the humanities. That is, by operating with financial models that include little research revenue and greater reliance on tuition discounting, such institutions endure more difficult financial conditions than others. In the case of private baccalaureate institutions in particular, the tax takes predominantly the form of lower net tuition revenues. In essence, then, continuing to operate as a humanities-driven college constitutes a burden many institutions with

smaller endowments and financially and academically weaker applicant pools cannot easily endure.

Recent decades have brought increasing financial pressures on students and families (seeking to earn adequate returns on their increasingly large costs of attendance) and on institutions (dealing with constrained government funding for student aid and for other purposes, depressed economic conditions, rising costs for benefits and plant maintenance, and pressures to restrain tuition rises). To the extent an institution is buffered from such challenges by a favorable economic base, it may be more able to maintain its longstanding curricular offerings and orientation.

H₈: Resource-rich institutions will be more likely to maintain their commitment to the humanities.⁶

H₉: Institutions located in wealthier areas will be more likely to maintain their commitment to the humanities.

Beyond these factors, it is important that a conceptual framework for understanding degree production consider a key secular trend in this arena: institutions have dramatically decreased their commitments to the humanities over recent decades and humanities degree production has declined in concert (Hearn & Gorbunov, 2005). Any modeling in this arena must take into account that variation over time, not only as a control factor but also as a potential source of interactions with the factors highlighted in the above hypotheses.

Consider, for example, the hypotheses above regarding private control and religiosity. Unquestionably, these characteristics were closely associated with liberal arts education in the 1970s, but as the economic contexts of higher education have evolved over more recent decades, these characteristics may have in fact placed nonadapting institutions at risk. Private four-year colleges lack assured public funding, and often have few revenue sources other than students and their families. These high levels of tuition dependency can create resource uncertainties (Gumport & Sporn, 1998; Tolbert, 1985), and thus powerful incentives to go wherever student markets lead them. That vulnerability may be especially pronounced in religiously affiliated institutions, whose denominational sponsors may themselves be at increasing financial risk, and whose prospective students may be losing faith in classic spiritually oriented education in the face of pressing employment concerns. Thus, we might hypothesize that, over recent years, the traditional commitments of private and religious institutions to the humanities were especially likely to decline.

Research Design

Driving this analysis is a simple research question: what organizational and environmental factors drive four-year colleges' commitments to undergraduate humanities degree production over time? To address this question, we applied the hypotheses outlined above to an examination of degree output over a large sample of colleges through several decades. We provide details of our research design below.

Institutional Sample

In order to examine degree award trends in the humanities, we analyzed a panel of institutional data spanning 38 years—from 1972 to 2009. Our final analytic sample contained 506 four-year colleges. All sample institutions awarded undergraduate degrees in each of the years included in our study, and all maintain a major emphasis on baccalaureate programs.

In the 2000 Carnegie Classification system (Shulman, 2001), our sample colleges were classified as “Baccalaureate—Liberal Arts” colleges (Liberal Arts I and Liberal Arts II) and are assigned to either the “Baccalaureate Colleges—Arts & Sciences” or “Baccalaureate Colleges—Diverse Fields” classifications in the current Carnegie system. We focused exclusively on four-year colleges because they are presumed to have the highest concentrations of humanities majors in the U.S. and because their presumed mission is to provide a broad-based (as opposed to a technical or specialized) education. While liberal arts education extends to the natural and social sciences, the humanities have traditionally been represented as the core and essence of many liberal arts colleges. As such, examining changes in the proportion of humanities degrees awarded at these institutions may offer insights into the adaptive measures that four-year colleges have taken over time. The institutional sample was quite representative of this sector nationally. One ninth of the 506 institutions ($n = 57$) are public, reflecting the relative scarcity of public baccalaureate colleges. 20% were founded before 1800, while 9% were founded in the 20th century (all before 1973). Eight percent were located in New England while the Southwest, Rocky Mountains, and Far West regions were each home to fewer than 7% of the sample. The remaining institutions were relatively evenly split among the Mid-Atlantic, Great Lakes, Plains, and Southeast regions. Finally, 64% of the institutions noted a religious affiliation.

Data and Variables

The primary data sources for this study are the Higher Education General Information Survey [HEGIS] and the Integrated Postsecondary

Education Data System [IPEDS]. From 1972 to 1985, HEGIS collected information regarding student enrollment, degree completion, and expenditures at all accredited four-year colleges in the United States. Beginning in 1986, IPEDS replaced HEGIS as the primary collector of postsecondary information—expanding its data collection efforts to include a more extensive list of institutional variables.

We use both HEGIS and IPEDS data to derive two dependent variables. The first indicates the annual percentage of undergraduate degrees awarded in the humanities at each college, and which includes degrees in English, literature, foreign languages, history, philosophy, and religious studies. The other dependent variable indicates the annual percentage of business degrees awarded at a particular institution, net of the percentage of humanities degrees awarded by the institution during the same year. This second indicator is aimed at assaying the shift from humanities to vocational education among four-year colleges.

For independent-variables indicators, we focused on a variety of organizational and financial characteristics at each college for each year, including total student enrollment, institutional age, percentage of female students, percentage of full-time students, and general and educational expenditures. Additionally, and given the positive association between aggregate wealth and institutional offerings in the arts and sciences (Brint, Riddle, Turck-Bicaki, & Levy, 2005), we extracted data from the Bureau of Economic Analysis to construct a variable measuring the annual per capita income of the metropolitan or micropolitan area in which each sampled college is located. Income data, as well as data for institutional education and general expenditures, are adjusted using the Consumer Price Index [CPI] to reflect 2009 dollars.

We also included three time-invariant variables capturing other institutional features that are likely to be associated with humanities degree production: institutional control, religious affiliation, and admissions selectivity. To represent institutional religiosity, we employed three dummy indicators denoting affiliation respectively with the Catholic Church, the Council for Christian Colleges and Universities (the major association of conservative Christian-affiliated institutions; see <http://www.cccu.org>), and other institutions with religious ties to Christian and non-Christian faith-based organizations. The comparison group for these dummies was schools without religious affiliation.

To indicate the relationship between admissions selectivity—an important predictor of programmatic focus at four-year colleges (Breneman, 1994)—and degree awards in the humanities, we used data from the Barron's Selectivity Index to form a categorical variable indicating colleges as highly selective, selective, or less selective. Since 1972,

Barron's has released five separate indices rating the selectivity of four-year colleges and universities on the basis of their freshman acceptance rate, average standardized test scores, high school GPA, and class rank of their incoming freshman class. While admissions ratings for the majority of four-year colleges remain consistent across the five indices, some have become more or less competitive over the 38-year period, and their ratings are adjusted accordingly.

In addition to main-effect variables, we also incorporated interaction terms to examine how the influence of institutional control, religious affiliation, selectivity, and female enrollment vary over time. Societal and educational trends (such as the professional advancement of women and the increased privatization of public higher education) may have conditioned the relationship between these factors and the awarding of humanities degrees.

Analytic Technique

We used fixed-effects [FE], random-effects [RE], and fixed-effects vector decomposition [FEVD] models to examine degree production trends as a function of both time-variant and time-invariant institutional characteristics. We employed these three varied techniques in light of specific analytic and statistical concerns associated with each alone. Our FE model, in particular, is indicated in the following equation, which also represents our data-generating process:

$$y_{it} = \alpha + \sum_{k=1}^K \beta_k x_{kit} + \sum_{m=1}^M \gamma_m z_{mi} + u_i + \varepsilon_{it} \quad (1a)$$

where y indicates the share of total undergraduate degrees awarded in the humanities for institution i in year t ; α indicates the intercept, or mean annual share of humanities degrees produced over t years for institution i ; x and z represent time-variant and time-invariant variables, respectively; u_i denotes unit specific effects; ε_{it} is the independent and identically distributed time-varying error term, and β and γ are parameters of interest.

FE models are often preferred in the analysis of panel data because they control for unit-specific effects that are unobservable or difficult to measure. Because the FE estimator incorporates mean differencing (i.e., draws estimates from time-demeaned data), however, estimation of time-invariant variables is impossible.

In cases where the objective is to produce estimates for both time-variant and time-invariant variables, one may use RE models. RE relies

on the same function specified in equation (1a); however, in contrast to FE, RE accounts for institutional heterogeneity by treating unobserved, institution-specific effects as a distinct component of the error term:

$$y_{it} = \alpha + \sum_{k=1}^K \beta_k x_{kit} + \sum_{m=1}^M \gamma_m z_{mi} + w_{it} \quad (2)$$

where:

$$w_{it} = u_i + \varepsilon_{it}$$

with u_i representing the cross section, or institution specific, error component; and ε_{it} representing the combined institution-year, time-varying error component.

By distinguishing between observed and unobserved institution-specific effects, RE allows for the estimation of time-invariant variables; however efficiency and unbiasedness of such RE estimates is conditional upon the very stringent assumption that error components are uncorrelated with the explanatory variables in the model and with each other (Gujarati & Porter, 2009):

When unit-specific effects and independent variables are correlated, Plumper and Troeger (2007; 2011) suggest using FEVD. The authors argue that FEVD is a superior approach to estimating time-invariant effects because, instead of relying on assumptions of independence, as is the case in RE, FEVD imposes independence—specifically, by decomposing unit-specific (i.e., institution-specific) effects into “observed” and “unexplained” vectors:

$$y_{it} = \alpha + \sum_{k=1}^K \beta_k x_{kit} + \sum_{m=1}^M \gamma_m z_{mi} + \delta h_i + \varepsilon_{it} \quad (3)$$

where h_i is not a component of the error term u_i , but an estimated vector of unexplained institution-specific effects that is, by design, uncorrelated with the time-invariant variables in the model, z_{mi} .

In the first stage, we estimated the standard FE regression featured in equation (1a), eliminating the unit-specific effects and time-invariant variables in our model, as demonstrated below in equation (1b):

$$y_{it} - \bar{y}_i = \alpha + \beta_k \sum_{k=1}^K (x_{kit} - \bar{x}_{ki}) + \gamma_m \sum_{m=1}^M (z_{mi} - \bar{z}_{mi}) + (u_i - \bar{u}_i) + (\varepsilon_{it} - \bar{\varepsilon}_i) \quad (1b)$$

$$\equiv \ddot{y}_{it} = \beta_k \sum_{k=1}^K \ddot{x}_{kit} - \ddot{\epsilon}_{it} \quad (4)$$

with \ddot{y}_{it} , \ddot{x}_{kit} and $\ddot{\epsilon}_{it}$ representing the demeaned variables of the fixed effects transformation. We estimated the above FE model with the sole purpose of generating institution-specific effects, \hat{u}_i , which differs from u_p in equations (1a) and (1b) (note the “hat” on the former term). In equations (1a) and (1b), u_p includes only *unobserved* institution-specific effects, whereas \hat{u}_i generated from equation (4) includes unobserved institution-specific effects, as well as *observed* institution-specific effects produced by the time-invariant, institution-level variables in our dataset, namely those indicating, institutional control, religious affiliation, age and selectivity.

In stage 2, we regressed the institution-specific effects generated from stage 1 on the time-invariant variables listed above. In doing so, we decomposed and subsequently distinguished the observable and explained institution specific effects in our model from the unobservable and unexplained institution-specific effects, denoted as h_i in the following equation:

$$\hat{u}_i = \sum_{m=1}^M \gamma_m z_{mi} + h_i \quad (5)$$

We obtained h_i by computing residuals from equation (5), which represented the estimated, decomposed portion of the institution-specific (i.e., fixed) effects that are not explained by the time invariant variables in our model.

In stage 3, we estimated our original model using pooled ordinary least squares regression (OLS), including h_p .

$$y_{it} = \alpha + \sum_{k=1}^K \beta_k x_{kit} + \sum_{m=1}^M \gamma_m z_{mi} + \delta h_i + \epsilon_{it} \quad (6)$$

Assuming our time-invariant variables were orthogonal to (i.e., uncorrelated with) the unobserved institution-specific effects, h_p , the estimates in equation (6) are presumed consistent and unbiased.

In their 2007 study, Plumper and Troeger used Monte Carlo simulation to show that the orthogonality generated from FEVD yields more reliable estimates than any other available panel data estimator, particularly when both time-varying and time-invariant variables are included

in one's model. Other researchers have argued, however, that standard errors generated from FEVD are too small (Greene, 2011), and that the FEVD estimator is inconsistent when time-invariant variables are endogenous (Breusch, Ward, Nguyen, & Kompas, 2011).

Given the debates surrounding FEVD, and the respective inherent shortcomings of FE and RE, we analyzed estimates from all three and checked for consistency across results. By providing results for all three statistical approaches, we aim to ensure a fuller consideration of the analytic issues accompanying each choice.

Findings

Table 1 provides descriptive information on our sample, as well as some useful perspective on changes over the study's 38 year time period. Interestingly, while most independent-variable indicators remained relatively stable for the 506 colleges, some shifted noticeably. As expected, our data reflect national trends toward declining humanities degree production: in 1972, our sample colleges awarded an average of 28% of their degrees in the humanities, but that number had fallen to 17% by 2009. Also reflecting national trends, our institutions' proportions of female students rose markedly, while their proportions of full-time students dropped.

TABLE 1
Descriptive Statistics for Institutional Variables of Interest, 1972 and 2009

Variables	Minimum	Maximum	1972 Mean	2009 Mean
Degrees Awarded in Humanities (%)	0	100	27.56	17.25
Enrollment (ln)‡	4.52	10.04	6.93	7.44
Full-Time Students (%)	12.18	100	88.67	83.56
Female Students (%)	0	100	50.37	59.26
Selectivity				
Less Competitive	0	1	0.37	0.22
Competitive	0	1	0.54	0.64
Highly Competitive	0	1	0.09	0.14
E&G Expenditures (ln)*	7.33	11.18	9.42	9.76
Area Per Capita Income (ln)*	9.64	10.93	10.06	10.57

‡ Figures are logged

* Figures are logged and adjusted with the Consumer Price Index to reflect 2009 dollars.

Table 2 presents RE, FE, and FEVD regression results for humanities degree awards across time and across the institutional sample. As expected, in the context of the full model, the overall time trend away from these degrees was significant in the results. In addition, several of the core hypotheses are supported in these findings.

Specifically, colleges with smaller student enrollments produced larger shares of humanities degree awards, in line with Hypothesis 1.

TABLE 2
Explaining Humanities Degree Awards at Liberal Arts Colleges: Three Models

Variable	Fixed Effects		
	Random Effects	Vector Decomposition	Fixed Effects
Time Trend (ln)	-2.387***	-2.671*	-3.115***
Enrollment (ln)	-3.277***	-4.018***	-4.300***
Public Control (Reference: Private)	-12.745***	-8.851*	
Public X Time (ln)	1.602***	1.482	
Full-Time Students (%)	0.042***	0.034	0.047***
Age	0.073***	0.029***	0.258***
Religious Affiliation (Reference: Nonreligious)			
CCCU	3.923*	5.193‡	
Catholic	-1.384	0.456	
Other Religious Affiliation	-2.381*	0.910	
CCCU X Time (ln)	-1.693***	-1.734*	
Catholic X Time (ln)	-1.502***	-1.529‡	
Other Religious Affiliation X Time (ln)	-1.373***	-1.451*	
Female Students (%)	0.058***	0.051	0.067
Female Students (%) X Time (ln)	-4.213***	-4.642***	-5.081***
Selectivity (Reference: Less Competitive)			
Competitive	-1.276**	3.882	
Highly Competitive	2.556**	18.231**	
Competitive X Time (ln)	0.570***	0.484	
Highly Competitive X Time (ln)	0.233	0.250	
E&G Expenditures (ln)	0.785**	0.138	0.247
Area Per Capita Income (ln)	9.836***	3.204*	3.780
Intercept	-64.743***	-90.723***	-102.939***
<i>N</i>	17939	17939	18092
<i>R</i> ²	0.232	0.768	0.189
Fit Statistic	$\chi^2_{(20)} = 4493.30$	$F_{(22,17420)} = 309.868$	$F_{(8,504)} = 61.77$

‡ $p \leq .10$. * $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$.

As anticipated by Hypothesis 3, colleges with higher proportions of full-time students produced higher proportions of humanities degrees, in keeping with the presumably more vocational orientations of part-time students. In keeping with Hypothesis 4, older institutions were markedly higher in humanities degree awards. Reflecting Hypothesis 9, in the RE modeling but not the FEVD modeling, institutions spending larger amounts per student were especially likely to produce humanities graduates. Similarly, four-year colleges located in areas with higher per-capita income levels produced a higher share of humanities degrees, supporting Hypothesis 9.

For the remaining hypotheses, we found some intriguing time-based interaction effects. Regarding Hypothesis 2, the findings supported the expectation of a negative influence of public control on humanities degree production, but the RE model suggests that this influence significantly diminished over time. Of course, there are few public liberal arts institutions, so this finding is of limited broader interest, but it does suggest a diminution in the distinctive association of humanities degrees with private institutions. State legislators' growing emphasis on "practical" fields is not reflected in these degree-granting trends, at least in the time period of this analysis.

Some of the study's most intriguing findings involved Hypothesis 5. Institutions with conservative Christian affiliations significantly buffered humanities production relative to others. Over time, however, those schools as well as schools with Catholic or other religious ties appear to have retreated from humanities production, relative to other institutions and controlling for generic time decay. Figure 1 (based on the FEVD findings) graphically portrays these patterns over time. Thus, all three kinds of religious institutions appear to have increasingly secularized their curricula to a degree well beyond what we initially expected.

The results for Hypothesis 6 were similarly surprising. Over the course of the study period, the effects of the proportion female of student bodies reversed direction over time, from a negligible or marginally positive influence on humanities degree production in the early years (insignificant in the FEVD model but significant in the RE model) toward a negative influence in later years. Figure 2 (based on the FEVD findings) highlights this pattern graphically. The literature provides ample evidence of women in recent years disproportionately pursuing degrees and certificates in the more vocationalized sectors of postsecondary education (e.g., community colleges), but the finding here of less affinity for the humanities in the liberal arts sector of higher education is striking.

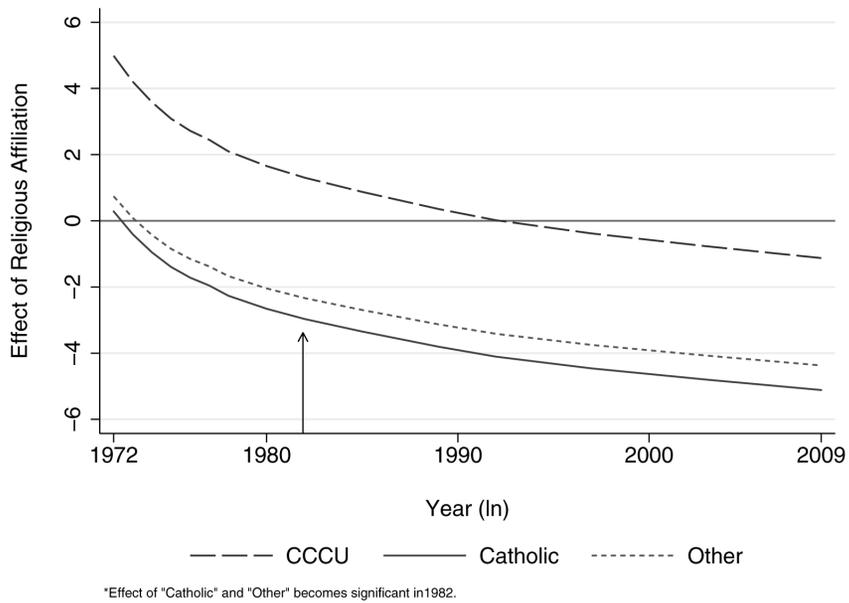


FIGURE 1. Effect of Religious Affiliation on Humanities Degree Production, 1972–2009

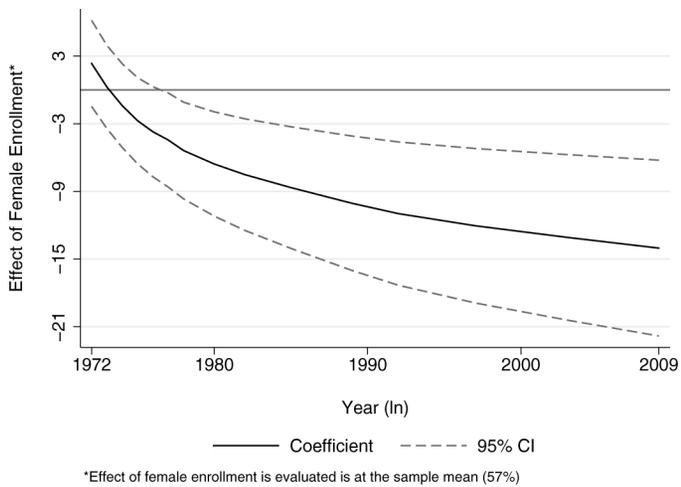


FIGURE 2. Effect of Female Enrollment Proportions on Humanities Degree Production, 1972–2009

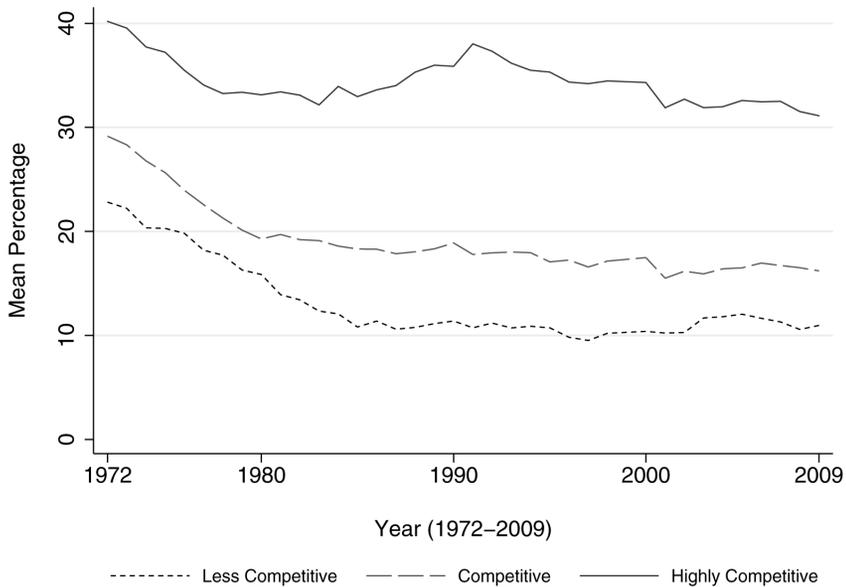


FIGURE 3. Relationship of Institutional Selectivity with Humanities Degree Production, 1972–2009

Finally, selectivity levels moderated humanities degree production in important ways: in accord with Hypothesis 7, the most highly competitive institutions showed the most enduring commitments to the humanities in the four-year colleges sector. Interestingly, the RE results hints that humanities commitments in the second-tier-selectivity (“competitive”) institutions shrank over time, relative to more and less selective institutions, but this result was not upheld in the FEVD modeling. Figure 3 presents basic descriptive data for the three selectivity tiers over time, showing the substantial humanities gap between highly selective liberal arts colleges and other institutions in the liberal arts sector. To supplement the longitudinal analyses of raw proportions of humanities degrees, we examined four-year colleges’ shifting commitment to the humanities over time in relation to business degrees. Such degrees are often viewed by policymakers, and perhaps by many parents, as an attractive replacement for humanities majors.⁷ Table 3 presents results for the shift from business to humanities degrees. In contrast to the first modeling approach, this alternative explicitly takes into account the relative starting points in degree awards across institutions. As anticipated,

TABLE 3

Modeling the Shift from Humanities to Business at Liberal Arts Colleges via the Net Percent of Business Degree Awards vs. Humanities Degree Awards, 1972–2009: Three Models

Variable	Random Effects	Fixed Effects	
		Vector Decomposition	Fixed Effects
Time Trend (ln)	8.149***	9.361***	10.813***
Enrollment (ln)	8.893***	11.279***	11.887***
Public Control (Reference: Private)	11.982***	5.463	
Public X Time (ln)	-2.426***	-2.075	
Full-Time Students (%)	-0.142***	-0.117***	-0.134*
Age	-0.180***	-0.073***	-0.740***
Religious Affiliation (Reference: Nonreligious)			
CCCU	-8.680**	-10.578*	
Catholic	1.034	-1.815	
Other Religious Affiliation	6.253**	0.017	
CCCU X Time (ln)	4.952***	5.097**	
Catholic X Time (ln)	3.760***	3.823*	
Other Religious Affiliation X Time (ln)	3.484***	3.726**	
Female Students (%)	-0.155***	-0.144*	-0.179*
Female Students (%) X Time (ln)	5.133***	6.122**	6.773***
Selectivity (Reference: Less Competitive)			
Competitive	2.109**	-8.682	
Highly Competitive	0.546	-33.297**	
Competitive X Time (ln)	-1.468***	-1.198	
Highly Competitive X Time (ln)	-2.483***	-2.519	
E&G Expenditures (ln)	-2.891***	-1.025	-1.541
Area Per Capita Income (ln)	-21.429***	-0.475	-2.779
Intercept	188.778***	-68.526**	19.791***
<i>N</i>	17939	17939	18092
<i>R</i> ²	0.301	0.786	.087
Fit Statistic	$\chi^2_{(20)} = 7888.09$	$F_{(22,17420)} = 639.45$	$F_{(8,504)} = 128.93$

* $p \leq .05$. ** $p \leq .01$. *** $p \leq .001$.

the time effect was positive, denoting the shift over time from humanities degrees into business degrees. Newer institutions were more likely to produce business degrees relative to humanities degrees. Findings for the RE model suggest that public control was associated with a greater emphasis on business than humanities degree awards, but this effect has apparently diminished over time. The FEVD model suggests that highly

selective institutions have been less likely to emphasize business degrees, while the RE model findings suggest that both very competitive and competitive institutions have retreated from relative emphases on business over time. In the RE model, results suggest that colleges with higher proportions of full-time students, institutions located in areas with a higher per capita income, and institutions with higher educational and general expenditures awarded relatively lower levels of business degrees. These results were upheld only for full-time enrollments, however, in the FEVD model. Intriguingly, institutions with high proportions of female students were less likely to award higher proportions of business degrees in the early years of the analysis, but that pattern abated in later years. Overall, these results for relationships between humanities and business degrees parallel rather closely the results for humanities degrees alone.

Implications

Beyond the anticipated findings of trends in degree awards away from the humanities and toward the business areas, several conclusions emerge from this work. First, throughout the modeling, *the most highly institutionalized segments of the four-year college sector have shown the most enduring and strongest commitment to the humanities*. Notably, the oldest, most selective, and most traditional (in terms of student enrollment patterns) schools exhibited more fealty to the humanities. It is hard not to view this as support for institutional theory's suggestion that high levels of legitimation can provide buffers against certain market-driven pressures.⁸

Second, *the schools most robust in financial resources were also the most committed to the humanities*, even in the context of controls for other factors. Higher area per-capita income and higher levels of educational and general expenditures were both associated with greater humanities degree production. Although the evidence is too indirect for any conclusive statements, it is hard to avoid concluding that greater resources within and around institutions can buffer them from precipitous responses to environmental pressures in degree production.

Still, it is important to note the close connection in this analysis between resource-based interpretations and institutional-theory interpretations. Under both resource-dependency theory and institutional theory, organizations maintain persistent structures congruent with the needs and expectations of critical external stakeholders, customers, and constituencies. Similarly, under both, organizations adapt structurally to the extent possible as external conditions change—one perspective

emphasizes definable external resource flows and associated power in organizations, while the other highlights the importance of organizations' social/cultural environments (Pfeffer, 2003; Scott, 1995). Clearly, highly institutionalized colleges could not continue to survive without attention to maintaining strong marketplace perceptions of the quality of their students, facilities, faculty, academic offerings, and social climates. Such institutional features as age, prestige, tuition levels, spending on students (via faculty salaries and facilities), endowments, and selectivity are closely associated, and these associations reflect significant *social as well as financial relationships and understandings*. In particular, deep admissions pools reflect well-established and strong marketplace perceptions, but are also a strong predictor (and foundation) of financial well-being. Because of this, untangling institutional-theory and financial interpretations competitively in our models and data would be a daunting task.

Third, *relationships among institutional characteristics and degree production are changing*. Importantly, the effects of female enrollment levels on humanities production have shifted over time toward being clearly negative. Inferentially, it would be dangerous to suggest causation in this result, as the proportions women in higher education rose dramatically over the study period and, in parallel, the nature of women attending college no doubt shifted. What is clear, though, is that 19th and 20th century assumptions regarding the humanities as a “more female” area of study are rapidly growing out of date.

Similarly, the transition of religiously affiliated colleges away from commitments to humanities degrees works against some well-established stereotypes. Even in the context of all the other indicators in the models, religious affiliation showed an association with lower levels of humanities degree production and a rising association with business degree production. Viewed in adaptive terms, these changes may reflect the evolving pressures on this sector as the demand for strictly religious undergraduate education subsides (Delucchi, 1997).

Clearly, there are limitations to this analysis. We focus here entirely on the four-year sector, and our findings are less relevant beyond those colleges. Importantly, expansion and changes in the college-going population nationwide, across sectors, mean that the overall decline in the nation's humanities degree production is less steep as a raw number than as a proportion, i.e., relative to other degrees (Silver, 2013). Also, many factors are closely associated in analyses of institutional data, making sorting through interrelationships and establishing even tentative causal inferences daunting. Certain data constraints may have also limited the power of this study's findings. For example, several poten-

tially relevant variables are omitted from the analysis, including institutions' endowment size, level of tuition dependence, and average standardized test scores. Regrettably, data spanning a sufficient number of years for these factors are unavailable. And, of course, information on the distinctive organizational cultures, climates, leadership, and governance of institutions is unavailable for the analysis.

It is important to distinguish the present analysis from earlier analyses of related, but distinctive, phenomena. Notably, in contrast to our focus here on the overall production of degrees across a metafield (the humanities), a number of influential earlier studies have examined the roots of academic innovation: which kinds of institutions in which kinds of conditions are likely to adopt new curricular offerings? Prominent in this vein are the work of Kraatz and the work of Brint with several colleagues over a period of several years. Given the differences in dependent variables, it is not surprising that our findings do not always parallel theirs. For example, in earlier analyses, we explored institutional urbanicity and regional location as factors and ultimately concluded that these played no key role in our results, but Brint et al. (2011) found that urban institutions were more likely to adopt occupational and professional degree programs.⁹ Similarly, we found that smaller institutions were more likely to maintain overall humanities commitments, but Brint, Proctor, Mulligan, Rotondi, and Hanneman (2012) found smaller institutions more likely to innovate in degree offerings. Finally, our analysis suggests that selective institutions have been more likely to preserve commitments to the humanities, but Brint, Proctor, Murphy, and Hanneman (2012) found that higher-status institutions were more market-responsive than others in institutionalizing new academic fields. These seemingly contradictory findings become less confusing when our differing dependent variable specifications are taken into account. The factors compelling movement toward or away from the humanities in the larger sense (our topic) may be quite distinct from the factors compelling adoption of particular kinds of humanities and nonhumanities offerings (the focus of earlier studies by Brint and Kraatz, Delucchi, and others). That is, maintaining higher levels of humanities degree production does not necessarily imply that distributions among specific humanities fields did not change appreciably, and certainly does not imply a lack of organizational innovation.

Similarly, the question of whether an institution's overall production of humanities graduates waxes or wanes over time is not conceptually the same as the question of whether an institution adopts more aggressive enrollment management initiatives (e.g., Kraatz, Ventresca, & Deng, 2010) or adjusts its public face via mission statements (e.g.,

see Delucchi, 1997). Such reforms no doubt influence degree production in the humanities and other fields, but the present study focuses on less operations-centered, more foundational contextual factors as influences. Our goal has been more explanatory than predictive, thus we see particular managerial, marketing, and strategic choices by institutions as mediating the core influences of most interest here.

It is intriguing to view our current findings in the context of theories of institutional stratification. Morphew and Hartley (2006) and others have observed that U.S. institutions have strong tendencies toward emulating other institutions of higher stature. If offering substantial numbers of humanities degrees is associated with the most selective (thus, most prestigious) segments of higher education, it would seem that emulation urges might propel institutions toward maintaining substantial humanities commitments. Institutions at the margin of prestige hierarchies, however, may find such emulation unattractive in the face of the declining marketplace demand for such degrees. For such colleges, other strategic choices may be more appealing for signaling prestigious associations without demanding the costs of maintaining money-draining academic profiles. For example, launching an intercollegiate lacrosse program has a double benefit: associating a school with prestigious eastern colleges while also attracting wealthier students and families able to pay most or all of their educational expenses (Kiley, 2012b). In short, academic emulation may be constrained heavily by limits on resources (Labianca, Fairbank, Thomas, Gioia, & Umphress, 2001), and other forms of emulation may be more cost-effective.

From a practical perspective, one can debate how troubled we should be by the decline of the humanities as fields of student concentration at four-year colleges. It may well be that those colleges not only have failed to provide a convincing rationale for the practical benefits of their humanities offerings, but also ultimately cannot provide such a rationale (Kiley, 2012a; Marcus, 2013). On the other hand, credible arguments can be made that de-emphasis of the humanities has eroded our sense of ethics and morality (Nussbaum, 2012) and our capacity to reason and communicate (Arum and Roska, 2011), as well as college graduates' labor-market outcomes over the longer term (Supiano, 2014). One might also argue that, curricular debates aside, liberal arts colleges merit support because of their more engaged campus climates and their graduates' more successful academic profiles (Pascarella and Terenzini, 2005).

Clearly, the adaptations and fate of four-year colleges raise significant practical and societal concerns. Even the most prestigious and well-endowed four-year colleges will likely be compelled to address

the increasingly vocational orientations of both students and stakeholders in the U.S. Several governors are pushing public institutions' curricular offerings toward more "high demand" disciplines (Kiley, 2013), and record percentages of first-year college students are citing financial success and better access to job prospects as their primary reasons for attending college (Pryor et al., 2012). What is more, a growing number of elite college graduates are limiting their job search to finance, consulting, and other high-paying professions (Rimer, 2008). In the face of these developments, many four-year colleges are reconsidering traditional emphases, and some are debating abandoning their liberal arts mission altogether (Baker et al., 2012).

Less dramatic responses are emerging, as well. Many observers have urged four-year colleges to explore innovative ways of integrating humanities and professional education (Colby, Ehrlich, Sullivan, & Dolle, 2011; Ewest & Kliegl, 2012) and such colleges as Morehouse, Franklin and Marshall, and Bennington have begun offering activities and coursework that allow students to connect the liberal arts experience to life beyond campus by incorporating vocational training into their curricula and thus adapting to the evolving demands of their students. Spellman (2009) and others believe that such developments should be celebrated as entirely consistent with the liberal arts philosophy, offering both continued adherence to the core aims and values of a liberal education and a path to sustained viability. As Keohane (2001) has noted, such adaptation may not increase degree production within humanities fields, but it could bring the humanities to new audiences and prepare more students for the complexities of adult life in an increasingly diverse society.

As Keohane stresses, these are not trivial concerns. There are no guarantees that adaptations in the increasingly privatized, market-centered higher education arena will be functional for the larger public good, and those adaptations may not even be functional for shorter or longer-term private good. Our findings portray a tide eroding humanities commitments in an ever-expanding set of four-year colleges, with serious resistance remaining largely in the most societally entrenched, economically buffered reaches of the sector. The factors fueling that remaining resistance, and the forces surging against it, merit continuing research attention.

Notes

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¹ Also, while liberal arts campuses differ substantially in their fiscal conditions and business models, most still appear able to offer the basics of a solid liberal arts curriculum (Lapovsky, 2012).

² Although Brint et al. (2011) focused on institutions' adoption of new programs rather than their commitment to certain overarching fields like the humanities, their findings support the proposition that urban schools and larger schools may exhibit more commitment to occupational/professional degree programs. That work also supports broader propositions from population ecology studies (e.g., see Hannan & Freeman, 1989).

³ Brint et al. (2011) found evidence that age matters in adoptions, but in a different way. Focusing on the adoption of new academic programs, rather than the preservation of older, broader curricular production (our focus here), their work suggests that older institutions may be more likely to pursue innovations to create new programs *within* the liberal arts.

⁴ In the terms of organizational and institutional economics, this reflects "transactions costs" reasoning (Williamson, 1981).

⁵ Because selectivity is closely associated with indicators of stature, a relationship reinforced by such popular measures as the *U.S. News and World Report's* annual rankings, this line of argument is reinforced by the findings of Brint, Proctor, Mulligan, Rondoni, & Hanneman (2012) that higher-status institutions tend to be more likely maintain their curricular offerings over time.

⁶ Arguably, there may be a link between the greater financial support that alumni of selective institutions provide and higher levels of resistance to fundamental curricular reforms (Ficano & Cunningham, 2001).

⁷ Recently, for example, Florida governor Rick Scott joined legislators in that state urging policy incentives for students to major in areas arguably more rewarded by the marketplace than such fields as history, philosophy, and English (Alvarez, 2012). Soon afterwards, the governor of North Carolina proposed reforms along the same lines (Kiley, 2013).

⁸ This form of protection has been noted earlier by McPherson & Schapiro (1999) and Neely (1999).

⁹ The finding echoes suggestions in earlier work by Hannan and Freeman (1989).

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