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Working Off-Track: Adjunct Labor In Higher Education

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Working Off-Track: Adjunct Labor In Higher Education

Abstract

The proportion of non-tenure track faculty has grown over the last decade and adjuncts now constitute two-thirds of the academic workforce. Despite this growth, there remain important limitations to our understanding of this new faculty majority. For one, typologies for conceptualizing adjunct diversity are often poorly aligned and make limited use of information valuable for classification. This study addresses these issues by employing the multivariate typological method of cluster analysis. The analysis implied a “natural typology” for adjunct faculty and suggested important nuances for fully recognizing adjunct diversity in higher education. This dissertation also addresses limitations with regard to adjunct job satisfaction and turnover. With lower earnings and less job security, it has typically been assumed that beginning off the tenure line carries with it a greater risk of early career departure. However, the empirical evidence of this has been weak. Using survival analysis and a behavioral measure of career attrition, this study confirmed the risks of beginning off the tenure track. Furthermore, using a structural equation model, this study examined nuances in the satisfaction and turnover intentions of different subclasses of contingent faculty members. Satisfaction with benefits and financial satisfaction are distinct among aspiring academics and career-ending adjuncts and this has important implications with regard to faculty retention policies.

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Chad Evans

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ABSTRACT

WORKING OFF-TRACK: ADJUNCT LABOR IN HIGHER EDUCATION

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Paul Allison

The proportion of non-tenure track faculty has grown over the last decade and adjuncts now constitute two-thirds of the academic workforce. Despite this growth, there remain important limitations to our understanding of this new faculty majority. For one, typologies for conceptualizing adjunct diversity are often poorly aligned and make limited use of information valuable for classification. This study addresses these issues by employing the multivariate typological method of cluster analysis. The analysis implied a “natural typology” for adjunct faculty and suggested important nuances for fully recognizing adjunct diversity in higher education. This dissertation also addresses limitations with regard to adjunct job satisfaction and turnover. With lower earnings and less job security, it has typically been assumed that beginning off the tenure line carries with it a greater risk of early career departure. However, the empirical evidence of this has been weak. Using survival analysis and a behavioral measure of career attrition, this study confirmed the risks of beginning off the tenure track. Furthermore, using a structural equation model, this study examined nuances in the satisfaction and turnover intentions of different subclasses of contingent faculty members. Satisfaction with benefits and financial satisfaction are distinct among aspiring academics and career-ending adjuncts and this has important implications with regard to faculty retention policies.

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CHAPTER 1: INTRODUCTION

Decades ago, the work of higher education was conducted mostly by long-term faculty with tenured contracts. Visiting, clinical and in-residence faculty had a role, but that role was limited to short-term course assignments or ancillary support that tenured faculty were not able to provide. In recent years, however, there has been an eruption of criticism regarding the use of adjunct faculty, as it has become clear that adjunct faculty are now permanent fixtures on college campuses. Scholars have documented the uptick in non-tenure track faculty, tracing back to the late 1960s. At that point, a mere 22% of faculty members were tenure-ineligible (Schuster and Finkelstein 2006). However, by the Fall of 2009, nearly two-thirds of all faculty were non-tenure track. This dramatic change has revolutionized the academic workforce: fixed-term faculty are now the new faculty majority.

This fundamental shift in the academic workforce has attracted substantial research for decades. Considerable efforts have been made to understand the historical and economic reasons for this extensive growth (Schuster and Finkelstein 2006). Others have examined how uncoordinated and decentralized hiring practices relate to fixed-term faculty (Cross and Goldenberg 2003). Some have focused on the job conditions and work responsibilities of these faculty members (Baldwin and Chronister 2001, Schell and Stock 2001). Others have examined student persistence and undergraduate academics under the instruction of adjuncts (Jaeger and Eagan 2009, Eagan and Jaeger 2008). These are only a few of the many themes undertaken due to this revolutionary change in the contracts of postsecondary faculty.

The scope of this dissertation is focused on two key aspects of non-tenure track faculty and their work. First, faculty adjuncts are far too often treated as a homogenous block with uniform experiences working in academia. They are portrayed as struggling with poverty wages, disrespected by their tenure-line peers, and universally exploited. No one would dispute the importance of these topics and possibilities. No doubt, some members of the adjunct population do work under such regrettable conditions. However, before implementing policies to ameliorate these conditions, it is of great importance to consider just how widespread these conditions and experiences are. It is possible that not all adjuncts experience them—maybe not even a majority. After all, we know that some adjuncts teach outside of a professional career because they enjoy sharing their expertise. Others work part-time to stay productive during their early retirement years. In short, there is surely diversity among postsecondary adjuncts, and an understanding of this diversity is sorely needed.

The second component of this dissertation relates to the job satisfaction, turnover, and permanence of non-tenure track faculty in higher education. It is a fact that non-tenure track faculty earn less and are less likely to receive health and retirement benefits. By definition, they also do not have tenure—a desirable contractual guarantee encouraging faculty commitment. Adjuncts also have less autonomy, control over their work and professional support. It is intuitive that employees working in such circumstances would be less satisfied and more likely to abandon their jobs and

potentially their careers. However, demonstrating this empirically is a formidable challenge.

Theoretical Framework

Extensive research on employee withdrawal and turnover exists. Researchers in this line of work typically approach the topic from one of four theoretical angles. Some focus specifically on the psychological commitment that bonds employee with employer (Porter, Crampon, and Smith 1976, Porter et al. 1976, Meyer and Allen 1991). Workers commit due to the implied costs of leaving as well as normative pressures. Another group of researchers has approached turnover from the theoretical lens of embeddedness (Mitchell and Lee 2001). This line of research draws on social networks, employee “fit,” and cost-avoidance to understand worker decisions (Lee, Burch, and Mitchell 2014). The unfolding model—a third perspective—highlights the importance of unexpected shocks causing employees to leave (Hom et al. 2017, Holtom et al. 2008, Weller et al. 2009).

Vroom’s (1964) work on expectancy theory may be the most influential of all. Expectancy theory views motivation as a cognitive process and focuses on how structural, attitudinal and environmental factors influence this process. In the context of work, this perspective implies that employees maintain the work arrangements that fulfill their job expectations. When unfulfilled, workers pursue other options like exerting less effort, detaching from their work, or leaving a job altogether (March and Simon 1958). Job satisfaction is central to expectancy theory because it is viewed as an expression of “fit.” Satisfied workers feel more aligned and connected to their employer and colleagues. Dissatisfied workers feel alienated and detached from their work.

Researchers integrate job satisfaction into turnover models in several ways. Herzberg, Mausner, and Snyderman’s (1959) argued that there were two principal dimensions to job satisfaction. Some work conditions mapped explicitly onto a factor measuring satisfaction while other work features mapped onto a factor measuring dissatisfaction. These factors were viewed as entirely independent in their framework. A second important job satisfaction model is Hackman and Oldham’s (1980) “Job Characteristics” model. This framework was very important for elaborating on the intrinsic aspects of job satisfaction like task variety, meaningfulness and task feedback. In the domain of higher education research, however, the work of Kalleberg (1977) truly stands out. Like Hackman and Oldham (1980), Kalleberg also recognized the intrinsic components of job satisfaction. However, his model was valuable for its incorporation of external factors of job satisfaction as well. Specifically, he found six dimensions to the job satisfaction construct: intrinsic value, convenience, financial, relationships with co-workers, career and resource adequacy.

Problem statement

While research often treats non-tenure track faculty as a homogenous block, there is an important line of typological scholarship recognizing adjunct heterogeneity. Notably, Gappa and Leslie (1993) identified career-enders, adjunct experts, freelancers and aspiring academics. Baldwin and Chronister (2001) classified full-time adjuncts according to principal work responsibilities. While these studies (and others) have done a great service, they have important limitations that this dissertation aims to address. For one, this line of research has led to a proliferation of labels for adjuncts without

clearly demonstrating that actual differences exist in new classes. As a result, there has been redundancy in some cases and conceptual vagueness in others. To truly carve out distinct classes of adjunct faculty members, this line of research would benefit from a method inferring how many clusters are justified in the adjunct population.

The second limitation this study aims to address relates to the failure to utilize information that is potentially valuable for creating an adjunct typology. Commonly, researchers build typologies around two or sometimes three characteristics they believe to be self-evident. The problem is that this approach potentially excludes variables important for classification. Ethnographers get around this to some extent by pouring over fieldnotes. However, even there, it is not certain that the right information is employed for the purposes of creating a robust typology. Ideally, a method would be employed that systematically extracts and draws on all information useful for creating distinct faculty types.

This dissertation also aims to address limitations in research on adjunct institutional and career turnover. For one, the timing of faculty attrition is rarely examined and when it has, the focus has been mainly on traditional, tenure-line faculty. Investigating the departure of adjunct subclasses is even more rare. Research on the turnover of adjunct experts or freelancers, for example, is unheard of. Secondly, this line of work commonly oversimplifies job satisfaction by measuring it on a unidimensional scale (e.g., “overall satisfaction”). It is well-known that this overlooks important aspects of job satisfaction and produces upwardly biased estimates (Oshagbemi 1999). Better research designs can correct this.

Research Questions

Regarding adjunct classification, what can a large dataset with extensive information on non-tenure track faculty tell us about the types of adjuncts working in higher education? Do natural clusters emerge from the data among full-time and part-time adjunct faculty? How does the typology suggested by a cluster analysis compare to earlier findings based on traditional typological methods?

This study also aims to address research questions related to adjunct turnover and career attrition. It seems likely that non-tenure track faculty leave their careers at higher rates than tenure-line faculty. Can this be demonstrated empirically? How does job satisfaction fit into the institutional turnover of postsecondary adjuncts? Are there differences among different kinds of non-tenure track faculty (i.e., adjunct experts, career-enders, aspiring academics, and freelancers)? Which work activities and institutional characteristics are related to turnover?

Research design

This dissertation addresses the problem of adjunct classification by employing cluster analysis—a multivariate method of classification. Specifically, a k-means algorithm is utilized, which extracts natural structure in a data source by clustering according to similarity. Doing this successfully requires a rich and relevant data source. To this end, this project acquired data from the HERI Faculty Survey (2010)—a unique,

cross-sectional survey that contains extensive information on the job experiences, demographic characteristics, and institutional features of 8,418 non-tenure track faculty members.

This rich dataset was also extremely valuable for the examination of turnover intentions among non-tenure track faculty members. To do so, these data were analyzed in a structural equation model. The choice of this methodology was driven by its capacity to incorporate a more comprehensive and appropriate measure of job satisfaction. This allowed for a test of whether adjunct faculty subclasses may experience job satisfaction in different ways and how this all relates to their decisions to leave their institutions.

Finally, recognizing the importance of career attrition, this study also acquired longitudinal data from the Survey of Doctorate Recipients (1993-2013). By utilizing information from doctorate recipients pursuing academic appointments, this study was able to calculate nonparametric estimates of career permanence among faculty beginning on and off the tenure line. Furthermore, these data were examined using Cox proportional hazards regression, allowing for deeper exploration of how work and institutional features relate to attrition behavior.

Significance

Higher education has not been isolated from the range of important social and economic changes over the last decades (Schuster and Finkelstein 2006). The structure of the economy has shifted from a material foundation to one based on information and knowledge. Education has changed in the public's eye from being a public good to resembling more of a private good. Coupled with a demographic transformation, new technologies, and marketplace pressure, administrators in higher education have consistently been forced to reexamine costs. As it is the largest institutional cost, instruction has often been the target. The usage of lower-cost, adjunct faculty has slowly grown over decades and, today, non-tenure track faculty members constitute over two-thirds of the American professoriate.

Of the many research questions engendered by the new faculty majority, this study prioritized questions related to adjunct classification and turnover. By classifying adjuncts better, this study helps do better science. This is because distinguishing the objects of inquiry is fundamental to the scientific method. A clearer typology also improves public policy by distinguishing subgroups that can be targeted. If there are inadequate supports and conditions among the adjunct population (as most believe), identifying who those adjuncts are and tailoring interventions with their interests in mind would be prudent.

This study is also justified by the fact that contingent faculty—not tenured faculty—are now the ones most responsible for executing the primary mission of higher education. The working conditions and careers these teachers experience, many believe, must have some kind of impact on their ability to teach and mentor young people. Are non-tenure track faculty satisfied with their work? Do they have enough job security to feel connected to their institutions? Are they capable of participating in and contributing to the positive learning environments we aim to establish on campuses? With as many as 12 million undergraduates taking coursework under the direction of a non-tenure track faculty member, it is high time to develop a more thorough

understanding of these individuals and their work environments (National Center for Education Statistics 2015).

There is also concern that an increased use of non-tenure track labor may open up new modes of stratification of educational quality and opportunity in the United States. If tenured faculty perform better at promoting student learning, then institutions more reliant on adjunct labor are more likely to produce inferior educational results. Students at elite colleges and universities (where there are more tenured faculty), by contrast, may have their advantages compounded thanks to stable and more experienced faculty members. A greater understanding of non-tenured faculty will help us assess the role of contingency in the stratification of educational opportunity.

Finally, institutions also have a very large stake in the careers and job satisfaction of their contingent faculty. Today, contingent faculty are a stopgap, allowing administrators to cope with fluctuations in enrollment and the withdrawal of government support. But there are subtle costs associated with this system that may add up in a substantial way. It is not clear how colleges and universities can continue to attract “the best and the brightest” if positions are increasingly off the tenure line. There are potentially large losses in the process of hiring, orientating and training short-term faculty. By elucidating the kinds of adjuncts in higher education and how the turnover process unfolds for them, this dissertation makes a substantial contribution to scholarship.

Abstract

With large increases in the number of faculty members working off the tenure track, scholars have developed numerous typologies to conceptualize this heterogeneous group of academic laborers. However, the proliferation of typologies has sometimes obscured patterns more than elucidated them. These studies are also limited in the information they use for classification. The following study employs cluster analysis—a multivariate typological approach—to identify natural groupings of adjunct faculty in higher education. By applying this procedure to a dataset with extensive information (2010 HERI Faculty Survey, n=8,418), this study brings greater information to bear on the task of adjunct classification. The findings of this study suggest an eight-fold typology with important connections to past typological research.

Introduction

Schuster and colleagues recently considered updating their influential book *The American Faculty* (2006); however, they concluded that an update was impossible. Postsecondary education “had transformed to such an extent [that an update] could not adequately capture the magnitude and significance of what [had] transpired (Finkelstein, Conley, and Schuster 2016).” This view is broadly shared. Colleges and universities have changed in many ways, including how they are financed, how they use technology, the students who attend them and the programs of study they offer. They have also changed with regard to their workforce. Beginning in the 1960s, postsecondary institutions began hiring increasing numbers of faculty off the tenure line. As “adjuncts” earn lower salaries and receive fewer benefits, the broader use of them has resulted in important cost-savings. However, few would have predicted the formation of a “new faculty majority.” Indeed, over two-thirds of academic faculty today work off the tenure line (Finkelstein et al. 2016).

An important observation is the diversity among non-tenure track faculty (Kezar and Sam 2010). Adjuncts have different job responsibilities and many reasons for working off the tenure line. They experience diverse work environments and have a multitude of job titles and academic backgrounds. Some work full-time and some work part-time. For this reason, researchers have developed adjunct typologies in order to better conceptualize and understand this heterogeneous group of academic laborers. As the number of contingent faculty has grown, so too have the number of typologies for describing them. However, in many instances, additional typologies have not resulted in greater conceptual clarity or deeper insights. Often, typologies are redundant or re-describe earlier adjunct classes in trivial ways. This line of research is also limited by not making full use of the entire span of information available for classification.

This study addresses these issues by employing a multivariate approach to classification called cluster analysis. Utilizing a k-means algorithm, the procedure derives structure in an appropriate data source by grouping units according to degree of similarity. The adjunct clusters that emerge constitute a *natural* typology. What can a large dataset tell us about the types of non-tenure track faculty working in higher education? Is there natural structure in the data that would be useful for a typology

scheme? How would such a typology compare to earlier work that has sought to classify non-tenure track faculty? An important strength of this design is its use of data with unparalleled information on non-tenure track faculty (HERI Faculty Survey 2010). This dataset includes a broad range of variables related to non-tenure track job experiences, demographic characteristics, institutional features, and more. As cluster analysis is most useful when applied to broad information on the objects of classification, the expansiveness of this dataset is integral. Drawing on contemporary data also has the advantage of updating a field that has changed rapidly over the last decade.

It is crucial to develop a better typology of non-tenure track faculty. Distinguishing the objects of inquiry is part of science, and better categories means better science. By improving how we conceptualize types of adjunct faculty, we advance our knowledge and understanding rooted in and around those categories. Typologies also suggest different occupational needs and different potential responses to interventions. As higher education is currently undergoing serious reforms, having better typologies will help policy-makers and administrators implement targeted policies that are efficient and effective. It is well known that many non-tenured track faculty work in challenging environments, and it is important for policy changes to be tailored to the varying needs of different subgroups.

Literature Review

Classifying Adjuncts

Classification¹ is the method of systematically arranging objects into groups (McQuitty 1987). This process is fundamental to learning and understanding, and it is only through classification that scholars, scientists, and people in general come to identify, differentiate and understand the objects of knowledge. The set of categories that emerge from this process is called a typology. Typologies often pertain to some domain like appearance, role, function, behavior, or activity. They are also typically developed with some purpose or goal in mind. However, there is also great interest in developing typologies that can be applied more generally.

The classification of postsecondary adjuncts has a long history. Tuckman's (1978) seminal work surveyed nearly four thousand part-time faculty members, classifying adjuncts according to their reasons for working part-time. This variable-centered analysis suggested seven principal types of part-time faculty: semiretireds, graduate students, hopeful full-timers, full-mooners, part-mooners, homeworkers, and part unknowners. The largest category was full-mooners (27.6%) who, in addition to their adjunct position, held full-time careers outside of academia. Graduate students were another large class (21.2%), completing their graduate studies while working part-time at a nearby institution.

The adjunct typology created by Tuckman was subsumed into a more general framework in Gappa and Leslie's *Invisible Faculty* (1993). Interviewing part-time faculty at eighteen colleges and universities, Gappa and Leslie identified career enders, experts², freelancers, and aspiring academics. *Career enders* referred to faculty who

¹ More specifically, taxonomic classification.

² Gappa and Leslie specifically called these faculty members "specialists, experts, and professionals." This study refers to them as "experts" to simplify the language.

were in the process of retiring from the workforce. Many of these individuals were not career academics, but instead had worked in the private sector. Part-time faculty in this class worked for supplemental income or simply because they enjoyed teaching. *Experts* were hired for their specialized knowledge or experience. *Freelancers* were mostly faculty who wanted to supplement the income earned from a career outside of academia. These faculty were also commonly homemakers, taking care of children and domestic chores on the side. The final category consisted of *aspiring academics*³. These were Ph.D. recipients who were seeking full-time, tenure-track appointments.

In *Teaching without Tenure* (2001), Baldwin and Chronister conducted interviews with faculty members at twelve colleges and universities. This study was important for its incorporation of full-time, non-tenure track faculty—a group that had been growing rapidly since the early 1990s. Their typology was centered on principal work responsibilities. *Teachers* spent most of their time teaching and *researchers* spend most of their time in research. They also identified significant numbers of adjuncts working in an administrative capacity (“*administrators*”). A residual category was retained for faculty spending the majority of their time on something else. This included lab technicians, programmers, and faculty members in community service.

Recognizing the rising number of adjuncts providing online instruction, Schnitzer and Crosby (2003) identified additional classes of adjunct faculty. *Philosophers* were faculty members employed in a field outside the area of study they took a degree in. While some of these faculty members did hold philosophy degrees, this category also included individuals with backgrounds in the humanities, religion and other fields with weak academic job markets. *Full-time part-timers* were adjuncts who created full-time work schedules by piecing together multiple part-time positions at different institutions. Bedford and Miller (2013) found that full-time part-timers constituted the largest category of adjuncts in their study. They also found substantial numbers of *full-time instructors* who, in addition to their full-time job, provided part-time instruction online. Other faculty groups they identified included *full-time administrators*, *recent graduates*, and *employment seekers*.

The studies presented here are only a few of the adjunct typologies proposed over the last decades. Researchers have also distinguished non-tenure track faculty according to their preference for tenure-line or full-time work, institutional titles⁴ (Shavers 2000), skill-level (Wagoner 2007) and professional ambitions (Bedford 2009, Carnevale 2004).

Research Problem

This study aims to address two main limitations of the typological research on postsecondary adjuncts. First, with the growth of adjunct faculty, there has been a proliferation of adjunct typologies. Some of these were reported above. However, more typologies have not always resulted in more insights. Maynard and Joseph (2008), for example, examined “underemployed adjuncts”—a category described earlier as “hopeful

³ In this formulation, aspiring academics also include graduate students, itinerants (a.k.a freeway fliers), and those aspiring only to a full-time position (tenure-track or not).

⁴ Berry (2005) found over 50 different titles for adjunct faculty.

full-timers” (Tuckman 1978) and “aspiring academics⁵” (Gappa and Leslie 1993). Schnitzer and Crosby (2003) and Bedford and Miller (2013) described the experiences of *full-time part-timers* working in online education. However, this is just a nuanced spin on the concept of “itinerants” or “freeway fliers” defined years earlier (Cross and Goldenberg 2009, Schell and Stock 2001). In short, it is not really adjunct classes that have proliferated as much as the labels used to describe them. This line of research would benefit from a study that systematically and objectively determines how many distinct classes of adjuncts are justifiable. Proposed adjunct types would then avoid redundancy and provide greater conceptual leverage.

The other important limitation of this line of research is its constrained use of information. In simple bivariate designs, two variables of theoretical importance are cross-tabulated, resulting in a four-quadrant classification schema. In other studies, researchers pour over interview data or field notes and ultimately settle on a number of classes that seems appropriate and consistent with the data. In both cases, classification fails to make full use of available information. In the first case, the procedure utilizes two principal variables but ignores any additional components that may be of importance for classification. The second case is limited by human perceptivity. At some point, the human mind is incapable of recognizing patterns in dense information. Such approaches are often incapable of capturing the naturally occurring interactions between components that constitute an entity.

For these reasons, Robins et al. (1996) and others have advocated for broader use of multivariate methods of classification like cluster analysis. Cluster analysis utilizes information from a high-dimensional dataset and separates units into groups according to similarity. There are many algorithms for accomplishing this task. One popular class that performs this task particularly well is the method of k-means. Jain (2010) attributes the popularity of k-means to its “ease of implementation, simplicity, efficiency, and empirical success.” This algorithm has been used in the natural and social sciences for decades (Le Roch et al. 2003, Clatworthy et al. 2005, Klemmack et al. 2007), although it has never been applied to the problem of classifying non-tenure track faculty.

There are limitations of course. This work does not and cannot replace foundational research conducted by domain experts in the field of higher education. However, by approaching the problem of adjunct classification with a new methodology and a new dataset, this study helps to validate what has been found in the past. The exploratory nature of this study may also suggest novel ideas and fruitful avenues for future research on adjunct faculty. This study is also limited in its classification of a subset of faculty—non-tenure track faculty—instead of all professors in higher education. While it was necessary to limit the scope for this chapter, a larger study that integrates classifications of tenure-line faculty is certainly merited. This is particularly important on account of the role of tenure in the highly differentiated environment of academia.

⁵ Gappa and Leslie (1993) argued that their concept stressed the desire to be “fully participating, recognized, and rewarded members of the faculty” of similar status.

Research Questions

What can a large dataset tell us about the types of non-tenure track faculty working in higher education? Is there natural structure in the data useful for classifying full-time and part-time non-tenure track faculty? How does the emergent typology scheme compare to earlier work? This study employs a k-means clustering algorithm to discover a natural typology of non-tenure track faculty. A strength of this study design is its use of a high-dimensional dataset and cluster analysis—a method that has not been utilized before in this line of research. By drawing on new tools and new data, this study complements earlier typological research, working towards an adjunct typology of general use. As this method is exploratory, there are no formal hypotheses to be tested.

Method

The goal of cluster analysis is to discover a natural grouping within a collection of data objects, patterns, or points. Operationally, for a set of data points and a pre-specified number of clusters, the basic k-means algorithm iteratively⁶ minimizes the within-cluster sum of squared errors. This study specifically employed the Hartigan and Wong (1979) algorithm, which makes improvements to the computational efficiency of this process. To validate resultant clusters, the groups were cross-tabulated across various domains of non-tenure track faculty characteristics, including: demography, institutional, departmental, and employment features⁷. This study conducted two separate cluster analyses, one for full-time faculty and one for part-time faculty. This was because the survey instrument contained an important battery of questions that only pertained to part-time faculty⁸. For more details on the method, see Aldenderfer and Blashfield (1984).

The data in this study came from the Faculty Survey (2010), a cross-sectional survey conducted by the Higher Education Research Institute (HERI). HERI has been collecting faculty survey data since 1978, however, the focus of earlier iterations has been on traditional tenured and tenure-track faculty teaching undergraduate students in the United States. Beginning in 2007-2008, HERI began developing a separate series of questions for part-time faculty and expanded their part-time sample, recognizing the important role of part-timers in higher education. These changes were of extreme importance to this study because the performance of the clustering algorithm and the representativeness⁹ of the resultant typology depend on it¹⁰. When data representation (choice of variables) is good, resultant clusters are more likely to be compact and

⁶ Another popular class of methods is agglomerative.

⁷ Variation across work characteristics was most apparent and therefore the focus of this paper is on work variables.

⁸ Exploratory analysis was also conducted on the pooled data.

⁹ The variables that are chosen should reflect the content of the domain that the researcher is interested in uncovering a natural typology Mandara (2003).

¹⁰ The survey created for 2007-2008 was the first to introduce a module with approximately thirty questions specifically for part-time faculty. This included questions about preference for full-time work, whether the faculty member has an outside career, and how many other institutions the faculty member teaches at (among others). At the time this dissertation research began, the 2010 instrument was the most recent instrument available that contained this important information about part-time faculty.

distinguishable from other clusters. This study utilizes data from the instrument distributed in 2010.

The dataset included information on 4,527 full-time non-tenure track faculty members and 3,891 part-time non-tenure track faculty members. In general, missing information was very low¹¹. However, because the analysis was conducted on numerous faculty variables, a missing data method was necessary to retain the near-complete data. To this end, data were singly imputed. See the methodological appendix for more information on this procedure.

Measures

A strength of this study is its inclusion of extensive information on non-tenure track faculty. The cluster analysis utilized 55 variables for full-time faculty and 82 variables for part-time faculty. All of these variables are tabulated in the appendix. In short, variables included a range of work features, including: number of courses, principal activities, stress, and productivity (to name a few). All categorical variables were coded into binaries for the cluster analysis. Quantitative variables maintained their numeric values. See the appendix for descriptive statistics on the quantitative variables.

Results

In order to discuss the emergent clusters in this study, it was necessary to label them. However, this is somewhat paradoxical because the goal of this study and its methodology was to avoid unnecessarily reducing phenomena to a single dimension. Cluster analysis is novel specifically because of how it utilizes a multitude of interactions and correlations to identify “natural groups” in a data source. The labels proposed in this study, thus, are made with a light hand. What is most important in the section that follows are the clusters of interrelated variables. Unlike univariate and bivariate typological approaches, cluster analysis allows for great complexity and nonlinearity in the formation of natural groups. Three clusters resulted from the analysis of full-time faculty and five clusters emerged among the part-time faculty.

¹¹ Only four full-time faculty variables had more than 10% missingness. Only ten part-time faculty variables had more than 10% missingness.

Classification of Full-time Adjunct Faculty

Table 1: Crosstabulation of Full-time Adjunct Clusters

	Cluster 1 (n=2686)	Cluster 2 (n=716)	Cluster 3 (n=1125)	Sign.
Teaching	92%	87%	45%	**
Research	4%	6%	2%	**
Administration/Other	4%	7%	53%	**
Instructor	27%	32%	23%	**
Lecturer	26%	31%	20%	**
Professor	48%	38%	56%	**
Union member	14%	16%	11%	**
Health benefits	95%	94%	96%	
Retirement	94%	90%	98%	**
Avg. Salary	\$55,277	\$49,720	\$75,026	**
Avg. Courses	3.1	3	1.8	**
Prof. Dev. Rating	0	-0.3	0.2	**
PhD	37%	45%	33%	**
Faculty very respectful	53%	49%	47%	**
Administrators very considerate	21%	14%	27%	**
Research valued	70%	57%	69%	**
Teaching valued	91%	85%	89%	**
Sciences	22%	22%	10%	**
Soft/Applied	33%	26%	50%	**
Humanities/Arts	22%	31%	17%	**
Health Sciences	13%	6%	14%	**
Social Sciences	10%	14%	9%	**
Public	40%	43%	30%	**
Highly Selective	10%	11%	9%	
Age	48.28	45.38	51.37	**
Male	45%	39%	43%	*
Married	77%	74%	80%	*
Number of Children	1.47	1.29	1.72	**
Suggested Label	Core Teaching Faculty	Peripheral Teaching Faculty	Administrative Adjunct	

* p-value<0.05 ** p-value<0.01

Administrative Adjunct: A distinct faculty type identified in this study was the “administrative adjunct.” These faculty members work full-time and, unlike other full-time adjunct types, tend to report administration¹² as their principal work responsibility (Table 1). Administrative adjuncts also typically have higher academic rank (although untenured), higher salaries (over \$75,000 annually), more benefits and greater opportunities for professional development. These adjuncts also tended to be older. This all supports the assertion that this is the managerial class of adjuncts. Interestingly, administrative adjuncts tended to have professional credentials (although some have

¹² Administration or activity other than teaching or research.

Ph.D.'s as well). They were also overrepresented in applied fields like public administration, law, journalism, and education.

Two Classes of Full-time Teaching Faculty

Core Teaching Faculty: From Table 1, like administrative adjuncts, core teaching faculty are full-time employees and central to their institution's mission. This centrality is reflected in their academic rank (which tends to be higher), their salaries (they earn ten percent more than peripheral teaching faculty), their benefits, and opportunities for professional development. Core teaching faculty constitute the largest group of adjunct faculty members in this study.

Peripheral Teaching Faculty: Peripheral teaching faculty (Table 1) teach full-time for a college or university but exhibit less integration in their institutions. These adjuncts generally have lower rank, receive less compensation, and undergo less professional development. However, compared to administrative adjuncts and core teaching faculty, peripheral instructors are actually more likely to possess Ph.D.'s. They are also more likely to be women working in the arts and humanities. Probably because they are less integrated into their institutions, the workplace attitudes of peripheral teaching faculty tend to be more critical of colleagues, administrators and their institutions more generally.

Classification of Part-time Adjunct Faculty

Table 2: Crosstabulation of Part-time Adjunct Clusters

	Cluster 1 (n=352)	Cluster 2 (n=1405)	Cluster 3 (n=1029)	Cluster 4 (n=916)	Cluster 5 (n=189)	Sign.
Teaching	99%	98%	97%	98%	73%	**
Research	0%	0%	2%	0%	2%	**
Administration/Other	1%	2%	1%	1%	25%	**
Instructor	64%	60%	34%	58%	41%	**
Lecturer	23%	21%	46%	27%	31%	**
Professor	13%	19%	21%	15%	28%	**
Union member	15%	14%	35%	18%	24%	**
Health benefits	45%	32%	79%	37%	70%	**
Retirement	49%	36%	77%	40%	69%	**
Total Institutional Salary	\$12,216	\$11,049	\$23,666	\$11,605	\$24,117	**
Payment Per Course	\$3,105	\$3,241	\$4,626	\$3,265	\$3,487	**
Avg. Courses	2.5	1.8	3.1	2.1	2.1	**
Prof. Dev. Rating	-0.1	-0.1	0.2	-0.2	0.4	**
PhD	21%	14%	35%	18%	29%	**
Involuntary PT	64%	49%	72%	59%	60%	**
Sought FT	50%	32%	72%	44%	53%	**
Career Outside Academia	49%	54%	11%	47%	24%	**
# Other Institutions	0.8	0.5	0.7	0.6	0.6	*
Faculty very respectful	50%	64%	47%	55%	53%	**
Administrators very considerate	15%	27%	14%	19%	22%	**
Research valued	48%	69%	61%	55%	64%	**
Teaching valued	83%	95%	87%	88%	89%	**
Soft/Applied	40%	48%	25%	41%	48%	**
Humanities/Arts	29%	18%	37%	24%	22%	**
Other field	31%	35%	37%	34%	30%	**
Public	28%	29%	52%	36%	35%	**
Highly Selective	3%	3%	10%	4%	7%	**
Age	50	52	50	50	53	**
Male	45%	53%	41%	46%	49%	**
Married	74%	79%	77%	79%	78%	**
Number of Children	1.6	1.9	1.5	1.7	1.7	**
Suggested Label	Aspiring Academic II	freelancer	Aspiring Academic	freelancer2	PT Admin Adjunct	

* p-value<0.05 ** p-value<0.01

Adjunct Administrator: Unlike other classes of part-time faculty, the principal work responsibilities of adjuncts in this class are often administrative (Table 2). To this end, they are offered more opportunities for professional development than other part-time faculty. They also receive greater institutional compensation than other part-timers (salary) and most report receiving health and retirement benefits. With this kind of security, only a quarter of adjunct administrators hold positions outside of academia. Adjunct administrators work in academically selective institutions at higher rates.

Academic Aspirant: Although part-time employees, Academic Aspirants tend to be more integrated into their departments than any other class of part-time adjunct. They teach the most courses on average and are more likely than other teaching-focused adjuncts to receive professional development (Table 2). They tend to receive better salaries and earn much more on a per-course basis than any other class of part-time adjunct. Most of them (about three-quarters) receive health and retirement benefits. They also are more likely to hold the title of lecturer—rather than instructor—which generally connotes higher status.

It is not clear why Academic Aspirants are afforded this relatively privileged position among part-time faculty. Perhaps it is because more of them hold traditional faculty credentials (Ph.D.'s) or because they maintain a more concentrated presence within academia (nine out of ten do not pursue careers outside of academia). Or perhaps it relates to their higher participation in faculty unions. In any case, these faculty certainly are not satisfied with their part-time positions. Of all part-time faculty,

they are the most likely to have pursued full-time faculty positions in the recent past and the least likely to be working part-time by their own volition. These setbacks may be why they express more negative views about colleagues and administrators than other adjunct types. Academic Aspirants work disproportionately in the humanities and at selective, public colleges and universities.

Journeyman Aspirant: Journeyman aspirants tend to be postsecondary instructors—not lecturers. As a class, they bear resemblance to Academic Aspirants in some ways. They teach a great deal—nearly two and a half courses every term—and their classes are often in the humanities (Table 2). Among part-timers, only Academic Aspirants teach more courses. Journeyman Aspirants have often pursued full-time academic work in the recent past and been unsuccessful in that endeavor. Like Academic Aspirants, they often have negative perspectives with regard to their faculty co-workers and administrators. They also tend to say that research may not be a priority for their institution.

They differ from Academic Aspirants principally in their engagement with outside employment. While only a small percentage of Academic Aspirants have careers outside of academia, nearly half of Journeyman Aspirants do. They are also more likely to teach at other academic institutions—sometimes referred to as itinerancy. Coupled with the workload they report at their surveyed institution, it is clear that these adjuncts work a lot. With fewer children and a slightly lower marital rate, these adjuncts seem to be placing a strong emphasis on their careers—even if these are not traditional career pathways.

Freelancing Aspirant: Freelancing Aspirants tend to be professionals teaching a couple of classes for their institution (Table 2). Among other part-time adjuncts, Freelancing Aspirants resemble Journeyman Aspirants in important ways. Like Journeymen, they also work as teachers in academia and tend to hold the title of instructor. It is also not uncommon for them to be pursuing full-time careers outside of academia. However, compared to Journeyman Aspirants, they hold outside careers at lower rates. They also teach fewer classes and have fewer institutional employers. Thus, while many aspire to full-time work in academia, it may not be their principal focus. Perhaps the flexibility of freelance work helps them manage family responsibilities or gives them a better work-life balance.

Adjunct Expert: Unlike other part-time adjuncts, most Adjunct Experts (54%) have full-time careers outside of academia (Table 2). Probably for this reason, they tend to teach fewer academic courses than other adjunct types. Many Experts seem satisfied with this kind of part-time work arrangement. More so than other adjunct classes, they report working part-time by choice and fewer of them have pursued full-time academic work. The agreeableness of this work arrangement is probably related to their positive attitudes towards colleagues and administrators, relative to other adjunct types. Adjunct Experts tend to receive lower compensation, benefits and professional development, suggesting they may have different motives for academic work. Perhaps these adjuncts enjoy sharing their expertise, mentoring young people, or simply enjoy the intellectual environment of higher education.

Discussion

Now the “new faculty majority,” non-tenure track faculty constitute over two-thirds of academic faculty members today. On account of the considerable diversity among these postsecondary adjuncts, researchers have created numerous typologies for conceptualizing them. However, this line of research has historically been unable to make full use of all information available for classification and faces limitations inherent to traditional methodologies of classification. These studies also on many occasions have proliferated adjunct labels in ways that have not always enhanced our understanding. By applying cluster analysis to the HERI Faculty Survey, this study approached the problem of classification from a new perspective. Model diagnostics suggested three natural groupings of full-time adjunct faculty and five natural clusters of part-time faculty.

Among the full-time adjuncts, administrative adjuncts were more established in their institutions and had extensive administrative responsibilities. Core teaching faculty and peripheral teaching faculty were the other two types of full-time faculty, distinguished by their level of institutional integration. Among part-time faculty, the analysis also identified an adjunct class with a greater emphasis on administrative responsibilities: part-time Adjunct Administrators. This study also identified Adjunct Experts. These were part-time faculty members with careers outside of academia. Experts held some of the most positive attitudes about their work, even though they were poorly compensated (in traditional ways) for their efforts. This study also found three classes of aspirants. Academic Aspirants often resembled traditional faculty with Ph.D. credentials and very few of them pursued careers outside academic walls. Journeyman Aspirants tended to have professional backgrounds and often worked extensively both within and outside of academia. Their career pathways were diversified but many still seemed to hold out hope for a full-time academic position. Finally, Freelancing Aspirants resembled Journeymen, except that they worked less in the formal economy. Perhaps they dedicate more of their time to volunteering, caring for family members or pursuing additional education.

The typology discovered in this study is similar to what had been established in seminal research on this topic. Gappa and Leslie (1993) recognized four classes of part-time adjuncts: aspiring adjuncts, experts, freelancers, and career enders. This study found similar classes, albeit with important nuances. Gappa and Leslie’s conceptualization of aspiring academics was that of a doctorate recipient seeking full-time, tenure-track appointments. This study identified three particular types of aspiring academics: Academic Aspirants, Journeyman Aspirants and Freelancing Aspirants. The main way these aspirants differed from one another was their involvement in extra-academic work. Academic Aspirants seemed focused on acquiring a full-time position by dedicating themselves entirely to academia. Journeyman Aspirants, while also interested in full-time academic work, were professionals working extensively both inside and outside of academia. Freelancing Aspirants were between these two extremes. Identifying subclasses of aspiring academics was an important contribution of this study. Rather than lump all aspirants together, it was important in many instances to factor in their level of engagement in careers outside of academia. The cluster analysis also identified Academic Experts—an adjunct class that seems similar to the original type identified in Gappa and Leslie’s work. Experts were professionals with outside careers

working in academia presumably for the intellectual climate of the classroom or for an opportunity to share their expertise with young people.

In contrast to the findings of Gappa and Leslie, the cluster analysis uncovered a distinct part-time adjunct type focusing on administration—the so-called Adjunct Administrator. It is unclear why this adjunct type would emerge from the cluster analysis and not in the Gappa and Leslie study. One explanation is that part-time faculty perform more administrative duties today than in the past. Potentially institutions today are using part-time labor to lower the costs of administration—similar to the way they do for instruction. Alternatively, this category may have been subsumed into the career-ender type in Gappa and Leslie's study. The career-ender type did not emerge as a type in the cluster analysis. However, this might have been due to the exclusion of part-timers holding tenure. Indeed, exploratory research suggested this may be the case.

The cluster analysis of full-time faculty also revealed types that were similar to foundational work. Like Baldwin and Chronister (2001), this study found that full-time faculty were principally distinguished according to their main work responsibilities. Some of these adjuncts were administrators and the other two types of full-time adjuncts were teaching faculty. Unlike Baldwin and Chronister (2001), however, this study did not identify a strictly "research" adjunct. This is in part because the HERI sample excluded faculty without a classroom presence. An important nuance overlooked by Baldwin and Chronister (and other researchers) was the core versus periphery distinction among full-time adjunct teaching faculty. Core teaching faculty have reasonable salaries and more opportunities for professional development. Peripheral teaching faculty, while employed full-time, undergo less professionalization in their departments and receive less compensation for their work. This probably leads to a lower level of workplace integration. Of course, this study did not find strong separation between core and peripheral teaching adjuncts. However, this point is still worth noting.

With the dramatic growth and diversification of adjunct faculty, it is imperative for researchers to consistently update how they conceptualize and think about postsecondary adjuncts. This is because better conceptual tools provide greater leverage over unwieldy and ever-changing social phenomena. While the clusters that emerged in this study were similar to earlier classifications, this study identified important nuances. These subtleties can help researchers articulate their ideas more clearly and test their hypotheses more rigorously. Improved typologies also help frame the "adjunct problem" among policy-makers, administrators and in the popular media. This work suggests that the role of administration should factor into classification, as well as the engagement of aspirants in outside work. Policies and programs should be created that target peripheral teaching faculty, integrating them better into their workplaces. Policy-makers should also be aware of the value that many adjuncts place on flexible, part-time work. It would be a mistake to dismantle the part-time system altogether.

Cluster analysis is an exploratory technique, and there were no formal hypotheses tested in this study: the method simply extracted patterns that were naturally present among variables in the data. This is not to say that this study is without limitations. The sample used, for example, was limited. Without information on adjuncts working exclusively in research or administration, this study was unable to incorporate information from the entire population of adjuncts. Regrettably, this makes the

representativeness of the proposed typology sub-optimal, even if only a fraction of adjuncts were missing from the study.

This method also raises concerns with regard to cluster partitioning. Ideally, the natural groupings that emerge from a data source are compact and highly distinctive. When this occurs, the implied typology has greater integrity. In this study, the clusters that emerged had some degree of fuzziness or vagueness: there was substantial overlap between some of the clusters. Core teaching faculty and peripheral teaching faculty, for example, did exhibit similarity across many dimensions. Nevertheless, overlap in the partitioning may not be a serious problem. It may simply suggest that two or more clusters are very similar or that there is a hierarchical nature to the ordering of groups. Future work should seek out what may be responsible for partitioning issues. Useful strategies might include using more variables, better measurements or k-fold cross-validation to improve model performance and help with validation.

There are many other ways for researchers to build on this line of research. This study focused on how faculty clustered with regard to job function and workplace characteristics. However, cluster analysis could provide insights into other aspects of faculty work-life as well. Past research, for example, utilized work titles for classification of adjuncts (Shavers 2000, Hollenshead et al. 2007). This information could also be used in a cluster analysis to see whether there may be natural status-based groupings among postsecondary adjuncts. Researchers may also want to consider a data source with information on the entire population of adjuncts (with research-oriented and career-ending adjuncts). NSOPF data¹³, for example, may be useful for its generality, although it is important to understand that it lacks the extensive set of important adjunct variables contained in the HERI sample.

Conclusion

Adjunct typologies have stagnated in recent years, due to the application of traditional methods with inherent limitations. Using a new method and a new dataset, this study approached adjunct classification from a fresh direction. Importantly, this study helped validate typological findings from foundational work in this line of research. However, it also shed new light onto nuances associated with these traditional adjunct groupings. By honing our understanding of adjunct classes, this study strengthens our conceptual framework for thinking about and understanding postsecondary adjuncts. With better conceptual tools, researchers, administrators, and policy-makers have better instruments for designing efficient and effective policies for the postsecondary workforce.

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¹³ The NSOPF instrument was discontinued in 2004, but still may hold relevant information for the purposes of adjunct classification.

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Appendix

Clustering Algorithm

K-means clustering requires the specification of three parameters: the number of clusters, how clusters are initialized and how distance is measured. The number of clusters was guided by hierarchical agglomerative clustering (Milligan 1980) and an elbow plot associated with the within-cluster sum of squared errors¹⁴. Three clusters were optimal for full-time faculty and five clusters were optimal for part-time faculty. Before conducting k-means clustering, all variables were scaled and normalized¹⁵ so that variables with the greatest ranges did not have undue influence on the formation of clusters. To conduct the k-means analysis, it is important to choose random starting points for the means (Milligan and Sokol 1980). This helps prevent convergence on suboptimal means. This study used 10 different sets of starting points to identify the means that best summarized the information in the data. The Hartigan-Wong algorithm employed in this study uses the Euclidean measure of distance.

Imputation

Listwise deletion across a large number of variables led to an unacceptably small sample. To rectangularize the matrices, this study utilized the mice package in R to produce a single imputation (Van Buuren and Groothuis-Oudshoorn 2011). As calculating standard errors¹⁶ was not important to this study, single imputation was simple and sufficient. This method was implemented specifically using a CART algorithm. Each target column was imputed drawing on information from all of the other columns in the data. As most other columns had some degree of missingness as well, the algorithm used the most recent round of imputations for each. The iteration maximum was set to five, giving the chained equations multiple attempts to converge on a good imputed value for each cell.

¹⁴ It is still not established which way is best for determining the number of clusters.

¹⁵ The importance of this step is unresolved in the literature (Milligan 1996).

¹⁶ When standard errors are important, there are better missing data methods available like full-information maximum likelihood and multiple imputation.

Table 3: Descriptive Statistics of Quantitative Variables in the Analysis

Quantitative Variable	Mean	S.D.
Besides this institution, how many other institutions	0.6	0.9
# of courses teaching this term (all institutions)	2.6	1.7
Students enrolled in course	31.6	40.2
Year of birth	1960	12
Year of highest degree now held	1995	12
Year of appointment at present institution	2003	8
Career related Stress	45.0	9.1
Institutional Selectivity	1107.5	123.0
Salary: % Base salary from this institution	64.3	37.4
Salary: % Other income from this institution	3.7	11.3
Salary: % Income from another academic institution	8.4	21.6
Salary: % Non-academic income	24.6	34.8
Base institutional salary**	\$59,271	\$36,977
Total salary from teaching at institution*	\$15,270	\$13,034
Pay per course at institution*	\$3,596	\$3,067

* Variable only pertained to part-time non-tenure track faculty

** Variable only pertained to full-time non-tenure track faculty

Table 4: Variables Used in Cluster Analysis

Code	Description	Code	Description
PRINACT	Principal activity	PASTACT01	Considered early retirement
ACADRANK	Academic rank	PASTACT02	Considered leaving academe for another job
TENURE	Tenure status	PASTACT03	Considered leaving this institution for another
ADMCHAIR	Serves as department Chair	PASTACT04	Changed academic institutions
ADMDEAN	Serves as Dean	STRESS11	Stress: Colleagues
ADMPRES	Serves as President	STRESS13	Stress: Research or publishing demands
ADMVP	Serves as Vice-President	STRESS15	Stress: Teaching load
ADMPROVOST	Serves as Provost	STRESS20	Stress: Job security
ADMOTHER	Serves as other	STRESS25	Stress: Institutional budget cuts
ADMNA	Serves as not applicable	APPTYR	Year of appointment
COURSENUM	Courses taught current term	STATE	State
CRSTYPE01	Type of course	OBereg	Region
CRSENROLL01	Number of students	SALARY ^{FT}	Base salary
PROFDEV01	PD: outside workshops	PTSALARY ^{PT}	Part-time salary
PROFDEV02	PD: paid sabbatical	PTPAY ^{PT}	Pay per course
PROFDEV03	PD: travel funds	PTCHOICE ^{PT}	(in)voluntary part-time status
PROFDEV04	PD: internal grants	PTWORKFT ^{PT}	Sought full-time position in past
PROFDEV05	PD: administrative training	PTCAREER ^{PT}	Full-time career outside of academia
PROFDEV06	PD: course development	PTREASON01 ^{PT}	Part-time for income
PROFDEV07	PD: new technology	PTREASON02 ^{PT}	Part-time for compensation
PUBLISH01	Number of articles	PTREASON03 ^{PT}	Part-time for career
PUBLISH02	Number of chapters	PTREASON04 ^{PT}	Part-time for benefits
PUBLISH03	Number of books	PTREASON05 ^{PT}	Part-time for lifestyle
PUBLISH04	Number of patents	PTREASON06 ^{PT}	No full-time work available
PUBLISH05	Number of exhibitions	PTREASON07 ^{PT}	Part-time to offer expertise
PUBLISH06	Number accepted for publication	PTRESOURCES01 ^{PT}	Private office
HPW01	Hours per Week: Scheduled teaching	PTRESOURCES02 ^{PT}	Shared office
HPW02	Hours per Week: Preparing for teaching	PTRESOURCES03 ^{PT}	Computer
HPW03	Hours per Week: Advising and counseling of students	PTRESOURCES04 ^{PT}	Email account
HPW04	Hours per Week: Committee work and meetings	PTRESOURCES05 ^{PT}	Phone/voicemail
HPW05	Hours per Week: Other administration	PTOPN01 ^{PT}	Part-timers receive training
HPW06	Hours per Week: Research and scholarly writing	PTOPN02 ^{PT}	Part-timers rarely hired full-time
HPW07	Hours per Week: Other creative products/performances	PTOPN03 ^{PT}	Part-timers respected by students
HPW08	Hours per Week: Consultation with clients/patients	PTOPN04 ^{PT}	Part-timers mainly in introductory classes
HPW09	Hours per Week: Community or public service	PTOPN05 ^{PT}	Part-timers have no employment security
HPW10	Hours per Week: Outside consulting/freelance work	PTOPN06 ^{PT}	Part-timers have access to support services
HPW11	Hours per Week: Household/childcare duties	PTOPN07 ^{PT}	Part-timers compensated for advising
HPW12	Hours per Week: Commuting to campus	PTOPN08 ^{PT}	Part-timers must attend meetings
HPW13	Hours per Week: Other employment, outside of academia	PTOPN09 ^{PT}	Part-timers have good workshop relationship
GENACT01	Member of a faculty union	PTOPN10 ^{PT}	Part-timers respected by full-time colleagues
GENACT03	Plans to retire within the next three years	PTTEACH ^{PT}	Addition institutions of employment
GENACT04	Scholarship addresses local community needs		

^{FT} - Variable only available/relevant for full-time faculty members.

^{PT} - Variable only available/relevant for part-time faculty members

Note: Variables with the roots of "PUBLISH" and "HPW" were discretized by HERI prior to provisioning.

CHAPTER 3: NON-TENURE TRACK JOB SATISFACTION AND TURNOVER INTENTIONS

Abstract

Although most postsecondary faculty work off the tenure line, there is little empirical research to guide administrators on retention strategies tailored for the “new faculty majority.” Utilizing the 2010 HERI Faculty Survey (N=8418), this study examines the job satisfaction and organizational turnover intentions of non-tenure track college teachers. Importantly, this study considers multiple facets of job satisfaction and examines adjunct types ignored in earlier research. As adjuncts have different motivations for working off the tenure track, the findings of this study have important implications for the design of supportive policies and effective retention strategies.

Introduction

Research on the retention of postsecondary faculty members has been an important line of study for over half a century. As its faculty may be higher education’s greatest resource, the importance of creating attractive work environments is clear. However, higher education began an important transition in the 1970s when institutions began hiring larger numbers of faculty off the tenure line. Today, faculty adjuncts¹⁷ number over a million and constitute over two-thirds of the academic work force (National Center for Education Statistics 2015). Despite this dramatic transformation, retention research has maintained its focus on how to retain traditional, tenure-line faculty and generally ignored the growing number of adjuncts. Surprisingly little is established about how to support and retain the new faculty majority—non-tenure track professors.

This study examines the organizational turnover intentions of non-tenure track faculty. As job satisfaction is the key mediator of the turnover process (Mobley 1977, Price and Mueller 1981), this variable is given first order consideration. However, unlike earlier work that relies on a single measure of job satisfaction, this study examines multiple facets of job satisfaction in a structural equation model (SEM) framework. It identifies four key components (work and supports, co-worker relationships, financial satisfaction, and benefit satisfaction), mapping fairly well onto early theoretical work (Kalleberg 1977). This study is also novel in its examination of adjunct “experts”, “career-enders” and “freelancers.” Described by Gappa and Leslie (1993), these adjunct subgroups work off the tenure line for different reasons and this probably impacts their job satisfaction (Morse 1953) and perhaps turnover intentions as well.

Which adjuncts are at greatest risk of leaving their institution? Which aspects of their work are most enjoyable and how important are those experiences and perceptions with regard to leaving their institution? These questions are examined using the 2010 Higher Education Research Institute (HERI) Faculty Survey. The Faculty Survey is a national, cross-sectional survey with extensive information on the characteristics and experiences of postsecondary faculty. It is somewhat special in that it made a concerted effort to collect extensive information on both part-time and full-time non-tenure track faculty (n=8,418). It also, importantly, contains a rich set of job satisfaction items which,

¹⁷ This study refers to all non-tenure track faculty as “adjuncts.”

in a structural equation model, reveal important nuances about the organizational attrition of non-tenure track faculty.

There are many reasons to care about the job satisfaction and turnover process of non-tenure track faculty. For one, providing agreeable work conditions should be an institutional goal in its own right. However, institutions have selfish motives as well. Faculty turnover—even of those off the tenure track—is expensive because replacements must be identified, hired, oriented and trained. Turnover also accompanies inevitable disruptions as departments reallocate teaching assignments and some faculty teach new course material for the first time (Smart 1990). Sensible personnel strategies, then, aim to minimize these costs. By clarifying which factors drive the turnover process of adjuncts, this study suggests effective ways for administrators to support and retain a stable workforce. Better working environments have also been linked to a variety of other important outcomes like institutional effectiveness, functionality, and productivity (Hom et al. 2017).

Literature Review

Turnover

Four interrelated lines of theory define our knowledge of employee turnover (Hom et al. 2017). Commitment theory generally focuses on the psychological link bonding worker to employer (Porter, Crampon, and Smith 1976, Porter et al. 1976). Meyer and Allen (1991) argued that workers also experience cost-related¹⁸ forms of commitment and normative commitment. The theory of embeddedness concentrates on the contextual forces motivating workers to stay (Mitchell and Lee 2001). This includes network connections, perceptions of fit, and forms of cost-avoidance (Lee, Burch, and Mitchell 2014). A third body of theory, termed “the unfolding model”, focuses on the role of shocks or triggers that are external to the job itself. Certain life-events, like parenthood or unsolicited job offers, force a reconsideration of circumstances and sometimes lead to decisions to leave an employer (Hom et al. 2017, Holtom et al. 2008, Weller et al. 2009).

While each of these theories offers important insights into the turnover process, the most developed line of work is rooted in Vroom's (1964) expectancy theory. In this perspective, motivation is viewed as a cognitive process resulting from a combination of structural, attitudinal and environmental forces. Individuals identify desirable goals, rationally evaluate behavioral options to accomplish those goals, and then select the option with the greatest *expectancy* of bringing about desired ends. March and Simon (1958) incorporated expectancy into their work on organizational management. In their view, workers possess expectations about what a job is and what it should be. When a job meets expectations, employees seek to maintain the work arrangement and perform requisite behaviors. When it falls short of expectations, workers consider alternative behaviors with a greater likelihood of bringing about work expectations. One behavioral option is to quit and pursue a new employer.

Price (1977), Price and Mueller (1981), Mobley (1977) and Mobley et al. (1979) advanced this line of work by creating measures and empirically validating many of the ideas. Importantly, they operationalized job desirability using measures of job

¹⁸ Also referred to as continuance commitment in the literature.

satisfaction. Job satisfaction, in other words, measured just how aligned the work environment was with the individual's expectations. More sociological in nature, Price's work clarified the influence of contextual features (e.g., workplace integration, pay, social relationships, professionalism, perceived labor market opportunities) on those expectations. Mobley's work was more psychological in his treatment, examining in great detail the cognitive processes preceding a decision to quit¹⁹. For both Price and Mobley, job satisfaction was viewed as the key mediator of the turnover process; differences in job expectations drive the turnover process and decisions to quit.

Job Satisfaction

Locke (1969) called job satisfaction the "pleasurable emotional state resulting from the appraisal of one's job as achieving or facilitating the achievement of one's job values." It encompasses a diverse set of feelings and emotions, including stress, anxiety, boredom, inspiration and excitement. While satisfaction is highly subjective, it is critical for understanding turnover. This is because structural features and external work conditions impact turnover indirectly: their effects are channeled through job satisfaction and other socio-psychological variables (e.g., commitment, equity, justice).

Research on job satisfaction is extensive. There exist thousands of publications on job satisfaction and it is the most frequently studied variable in all of organizational research (Spector 1997). Scholars typically draw on one of three frameworks in this line of research. The most influential is probably Herzberg, Mausner, and Snyderman's (1959) motivator-hygiene theory. According to this theory, external features—termed "hygienes"—map onto a *job dissatisfaction* component. Intrinsic processes (e.g., achievement, job recognition, and performing interesting and challenging tasks), on the other hand, map onto an independent factor associated with *satisfaction*. These were called "motivators." Achievement, recognition, work itself, responsibility, advancement and (to a lesser degree) salary were found to be the most important characteristics in this process (Herzberg et al. 1959).

Scholars in this line of research also commonly cite Hackman and Oldham (1980) and their "Job Characteristics" model. This framework is important for its nuanced theorization of the intrinsic dimension of job satisfaction. In this view, job satisfaction is the consequence of features intrinsic to the work itself, including task variety, task identity, task significance, autonomy, and task feedback. Jobs high on these features result in motivation, satisfaction, performance, lower absenteeism, and lower turnover. This line of work has found substantial empirical support.

While both of these theories have been very influential, research has suggested that a third model (Kalleberg 1977) may be most appropriate for research on faculty satisfaction (Seifert and Umbach 2008, Eagan, Jaeger, and Grantham 2015). Kalleberg's theory of job satisfaction recognizes the intrinsic dimension of satisfaction; however, it is more expansive with regard to the external factors impacting job satisfaction and turnover. As this paper draws strongly on Kalleberg's sociological work, I present a summary below. His theory was validated using a principal component

¹⁹ Mobley's (1977) attrition process: thinking about quitting, evaluating the utility of a job search and the costs of quitting, intention to search for alternatives, search for alternatives, evaluation of alternatives, comparing options, and intentions to quit.

analysis of thirty-four job values and characteristics (Kalleberg 1977). Kalleberg found six latent components to the job satisfaction construct (one intrinsic and five extrinsic).

Intrinsic

Work intrinsic to the job itself is an important component of job satisfaction. Research has shown that employees want tasks that are interesting, varied and require them to develop and employ new skills. They experience greater satisfaction when charged with completing whole tasks, rather than partial tasks characteristic of assembly lines. Workers also want the challenges, responsibility and autonomy of determining the best strategy to complete a project or task. Feedback is also important as workers want to know when they have completed tasks correctly and to receive recognition for it. Work on adjunct satisfaction has found strong support for this dimension (Antony and Hayden 2011, Rosser 2004, Eagan et al. 2015, Antony and Valadez 2002, Seifert and Umbach 2008, Maynard and Joseph 2008).

Convenience

Convenience is another important dimension of job satisfaction. Having a workplace close to where they live, available parking, and “good hours” make it easier to accomplish work. Workers also value jobs that give them the flexibility to deal with competing time-demands (Rice, Frone, and McFarlin 1992). Sick children, doctors’ appointments, and other “emergencies” are common and workers appreciate jobs that allow them to quickly resolve these problems when they arise. Research has found that adjunct faculty value convenience (Seifert and Umbach 2008, Rosser 2004).

Financial

Financial compensation (rewards) is another important facet of job satisfaction. Compensation includes one’s base pay, bonus, and fringe benefits like health insurance, child care subsidies and retirement funds. It also includes job security, as this implies future income and benefits. Research on adjunct faculty has consistently found a financial dimension to job satisfaction. Smart (1990), Antony and Hayden (2011), Toutkoushian and Bellas (2003), Antony and Valadez (2002), Maynard and Joseph (2008), and Johnsrud and Rosser (2002)²⁰ examined pay satisfaction. Toutkoushian and Bellas (2003), Rosser (2004), Johnsrud and Rosser (2002), and Maynard and Joseph (2008) have found support for the role of benefits and security.

Relationships with Co-workers

²⁰ Johnsrud and Rosser’s (2002) work specifically examined the “quality of work-lives.”

Work relationships constitute another important component of job satisfaction. Workers spend extensive time interacting with their colleagues and they seek a sense of community in their workplaces (Murphy, Athanasou, and King 2002, Carnevale and Rios 1995, Klassen, Usher, and Bong 2010). Research on non-tenure track faculty has found a social dimension to satisfaction with administration, colleagues, and student subordinates (Ryan, Healy, and Sullivan 2012, Seifert and Umbach 2008, Johnsrud and Rosser 2002, Antony and Valadez 2002, Waltman et al. 2012).

Career

Perceived career opportunities constitute another important facet of job satisfaction. Workers want to know that their efforts advance their status and responsibility in an organization. So, promotional opportunities and the fairness of that process is an important form of job satisfaction. Career satisfaction is particularly important for adjunct faculty, who often work without formal promises of future employment (Seifert and Umbach 2008, Maynard and Joseph 2008, Smart 1990).

Resource adequacy

Resource adequacy is the final dimension of satisfaction in Kalleberg's framework (1977). Workers need the right materials, support, tools and equipment to do their jobs completely and efficiently. This dimension of job satisfaction also involves possessing, when necessary, adequate authority to effectively manage subordinates. Guidance from competent leaders and supervisors can also be viewed as an important resource. When tools, materials or staff are inadequate, workers feel ineffectual and frustrated with obstacles. This leads to a drop in morale and lower levels of job satisfaction (Peters, O'Connor, and Rudolf 1980). Some research (Eagan et al. 2015) has identified the role of resources in the satisfaction of adjunct faculty.

Satisfaction of Adjunct Types

Adjunct faculty are "heterogeneous" (Kezar and Sam 2010) and have many different motives for working off the tenure line (Gappa and Leslie 1993, Conley and Leslie 2002). As motives have important consequences for satisfaction (Morse 1953, Kalleberg 1977), many insights are only possible upon disaggregating this diverse group of professors. Toutkoushian and Bellas (2003) distinguished between full-time and part-time faculty, examining faculty job satisfaction using the National Study of Postsecondary Faculty (NSOPF). They found that part-time faculty were much less satisfied with their job benefits but were otherwise comparable to full-time faculty. However, using a more nuanced model²¹ (and the same data), Antony and Valadez (2002) found that faculty members were comparable with regard to "role demands and rewards"—a factor measured by satisfaction with benefits (workload, job security, opportunities for advancement, and pay). This research did reveal, however, that part-

²¹ This analysis was a structural equation model.

time faculty were significantly less satisfied with their autonomy and student relationships than full-time faculty.

Maynard and Joseph (2008) were the first in this line of research to recognize the importance of distinguishing between faculty working part-time by choice and those who would prefer full-time employment. Examining faculty at a single institution, they compared the job satisfaction of voluntary part-time, involuntary part-time, and full-time faculty. The strength of this study was its use of the Minnesota satisfaction questionnaire, an instrument measuring twenty satisfaction factors with one-hundred items. They reasoned that these faculty classes would differ in their satisfaction with regard to advancement, compensation, recognition, and job security. These hypotheses were mostly supported by their analysis. Involuntary part-time faculty were less satisfied with advancement than other faculty types. They also had lower satisfaction with compensation and job security than full-time faculty. Full-time faculty were more satisfied with their job security than all other faculty types.

Antony and Hayden (2011) and Eagan et al. (2015) made the same faculty distinctions and examined similar research questions using national datasets. Using National Study of Postsecondary Faculty (NSOPF), Antony and Hayden (2011) found that involuntary part-time faculty were less satisfied with pay, benefits and authority to make decisions (autonomy) than full-time peers. The only way that voluntary part-time faculty were less satisfied than full-time faculty was with their benefits. Using a more sophisticated model, Eagan et al. (2015) examined workplace satisfaction—a factor measured by satisfaction with autonomy, professional relationships, competency of faculty, departmental leadership, and course assignments. They found that involuntary part-time faculty experienced significantly lower workplace satisfaction than their voluntary part-time peers. However, this relationship disappeared once controlling for institutional resources and supports, suggesting that resource adequacy is probably important to these relationships.

Limitations of Earlier Work

In their seminal study, *Invisible Faculty*, Gappa and Leslie (1993) interviewed faculty members at 18 American and Canadian colleges and universities. They found different motives for working off the tenure track and created an influential adjunct typology consisting of experts, career-enders, freelancers and aspiring academics. Experts²² held full-time positions outside of academia and taught in order to contribute their knowledge and expertise to students at the institution. Career-enders were retirement age and seeking fewer work hours and responsibilities. Freelancers worked part-time by choice and often held part-time work outside of higher education. Aspiring academics²³ wanted full-time academic employment but, for one reason or another, were unable to arrange this. This group is comparable to the “involuntary part-time adjunct” explored in later work.

While research now makes finer-grained adjunct distinctions than in the past, Gappa and Leslie's (1993) work suggests that the job satisfaction of other adjunct subclasses may be important to consider as well. This study draws on these empirically-

²² Also referred to as specialists or professionals in Gappa and Leslie's work.

²³ Gappa and Leslie included graduate students in this class.

derived adjunct classes to more fully recognize the heterogeneity among faculty working off the tenure line. In addition to full-time and aspiring academics, this study examines the satisfaction and turnover intentions of adjunct experts, career-enders and freelancers. These are subclasses of adjuncts working part-time by their own volition.

Another limitation of earlier work is related to the measurement of job satisfaction. Despite the fact that a single measure greatly oversimplifies a complicated concept (Oshagbemi 1997) and produces upwardly biased estimates (Oshagbemi 1999), much of the earlier work relies on a single measure of job satisfaction. Clearly, faculty can be more satisfied in some ways and less satisfied in others. This study joins the efforts of Antony and Valadez (2002), Maynard and Joseph (2008), and Egan et al. (2015) in recognizing and modeling latent components of job satisfaction. By using a multidimensional measure, this study establishes a nuanced understanding of the cognitive and evaluative processes associated with job satisfaction and turnover intentions.

While many researchers have used sophisticated models to examine faculty turnover, nearly all of them focus on traditional, tenure-line faculty (Ryan et al. 2012, Barnes, Agago, and Coombs 1998, Daly and Dee 2006). When non-tenure track faculty were included in studies, part-time adjuncts have typically been excluded (Smart 1990, Xu 2008²⁴, Zhou and Volkwein 2004, Rosser 2004). Of all the literature reviewed, only Johnsrud and Rosser (2002) used a structural equation model to examine the satisfaction and turnover intentions of non-tenure line faculty. However, these authors never actually indicate whether any of their sample were part-time faculty members. Based on their cross-tabulations, they probably were not. In any case, only a fraction of their sample was non-tenure track and there was little consideration for the nuanced groupings of non-tenure track faculty that this study examines.

Proposed Model

This study examines the turnover intentions of adjunct faculty. Turnover intentions—a cognitive measure—measures whether or not a faculty member has considered leaving his or her institution. A behavioral measure (like actual turnover) might have produced important insights with regard to these individuals; however, data on faculty turnover behavior is rare due to the complications of following up with mobile survey participants in transition. In any case, turnover intention is a good proxy and the single best predictor of actual turnover (Steers and Mowday 1981, Bluedorn 1982).

Research on faculty turnover has produced causal models with some differences, however Smart (1990) attributes this mostly to the authors' diverse disciplinary orientations—not fundamental differences in how theorists believe attrition occurs in academia. In general, turnover is the function of individual characteristics, contextual variables and external conditions. Multiple dimensions of job satisfaction mediate this process, expressing an employee's alignment or adjustment to her or his work environment.

Research Questions

While non-tenure track faculty earn less, have fewer benefits and fewer amenities (Kezar and Sam 2010), research has shown them to have comparable levels

²⁴ Technically, Xu used hierarchical linear models.

of job satisfaction in the aggregate. This study follows the lead of earlier researchers who produced important insights by disaggregating non-tenure track faculty and considering different facets of job satisfaction. This study specifically employs the Gappa and Leslie (1993) adjunct typology in its assessment of adjunct satisfaction and turnover.

- 1) How do adjunct types compare across latent measures of job satisfaction?
- 2) How do adjunct types compare with regard to organizational turnover intentions?
- 3) Do contextual features (e.g., institutional characteristics) matter with regard to turnover intentions?

These questions were investigated in an exploratory factor analysis and through the use of a Bayesian probit structural equation model. These methods will be discussed in more detail in the methods section. However, very briefly, the exploratory factor analysis revealed four dimensions of job satisfaction that map well onto the components identified in Kalleberg (1977): work and supports, co-workers, financial, and job benefits.

Adjunct Job Satisfaction Hypotheses

Earlier work suggests that aspiring adjuncts experience lower satisfaction with work and supports (Antony and Hayden 2011, Eagan et al. 2015). This is tied to the involuntary nature of their part-time employment. While freelancers work part-time by choice, there is still reason to believe that they may be less satisfied with work and supports than other types of voluntary part-timers. Potentially, having less autonomy and influence over curriculum and course assignments results in lower satisfaction for them on this dimension.

Research has not found differences among adjunct subgroups with regard to satisfaction with co-workers. However, now disaggregated, we know that the role of work relationships is different for career-enders than for other faculty types. Workplace relationships are an important part of why career-enders decide to “transition” into retirement. So, there is an expectation that career-enders will express more satisfaction on this dimension than other types of voluntary part-time adjuncts.

Earlier research has shown aspiring academics to be much less satisfied with financial aspects of their work²⁵ (Antony and Hayden 2011, Maynard and Joseph 2008). However, there is also reason to believe that freelancers may be lower on this dimension as well. Unlike adjunct experts with full-time careers in the private sector, freelancers have a strong dependency on their institutional salary—which is often quite low. Thus, their satisfaction on this dimension is expected to be lower as well. Career-enders, on the other hand, generally do not teach part-time for financial reasons. Thus, the financial satisfaction they experience is expected to be higher than that of other voluntary part-time faculty members.

²⁵ The job satisfaction of full-time adjuncts and voluntary part-timers is for the most part comparable. Only with regard to job security have differences been clearly identified (Maynard and Joseph 2008).

Research has found that both aspiring academics and voluntary part-time faculty tend to be less satisfied with job benefits (Antony and Hayden 2011). It is possible, however, that the heterogeneity of volunteer part-time adjuncts obscures important relationships—especially for career-enders. As extending benefits into later years is often a priority for those at the end of their careers, one might expect the job satisfaction of career-enders on this dimension to be distinctly higher.

Turnover Hypotheses

Turnover research has shown that faculty who are less satisfied are more likely to leave their organizations. This is likely true for all dimensions of job satisfaction: work and supports, co-workers, financial satisfaction, or job benefits.

Hypothesis A: Lower levels of satisfaction with work and supports, co-workers, financial satisfaction, and job benefits all cause turnover.

Research has shown that satisfaction is the key mediator between structural conditions and turnover intentions. Upon controlling for satisfaction, relationships between structural and environmental variables should dissipate (partial mediation). This includes a partial mediation of relationships between turnover intentions and adjunct faculty types. However, the motivations for working off the tenure-line are fundamentally different for career-enders. Independent of their satisfaction, I still expect that career-ender status remains important to organizational turnover intentions.

Hypothesis B: After controlling for dimensions of satisfaction, career-enders will be more likely to leave their organizations.

Research has shown that turnover is mostly an individual-level phenomenon. That is, most of the variation in turnover intentions happens between individuals, not between organizations (Seifert and Umbach 2008). However, two structural characteristics are theorized to matter: discipline and institutional control.

With regard to discipline, earlier work has shown that faculty from applied and professional fields are subject to a greater “pull” from employment opportunities in the private sector, where demand and salaries are higher (Ehrenberg, Kasper, and Rees 1991, Conley and Leslie 2002). This is particularly the case for faculty in “hard-applied” fields like biomedical/health sciences, engineering and math/statistics (Ryan et al. 2012)²⁶. So, while faculty in different departments may have similar job satisfaction (Seifert and Umbach 2008), external factors make it more likely that faculty in applied fields leave their institutions.

Following earlier work (Eagan et al. 2015, Smart 1990, Xu 2008), this study also examines the impact of institutional control. Eagan et al. (2015) found that part-time faculty were less satisfied in public institutions, perhaps because of institutional

²⁶ “Soft-pure” disciplines linked to organizational turnover (Ryan, Healy, and Sullivan 2012).

problems with funding. Lower satisfaction implies that adjuncts at public institutions may be more likely to leave for other organizations. No other institution-level characteristics have been linked to differences in organizational turnover (Johnsrud and Rosser 2002).

Hypothesis C: Faculty in applied disciplines and public institutions will have higher organizational turnover.

Method

This study utilized information from non-tenure track faculty in the 2010 HERI Faculty Survey²⁷. The full HERI sample (with tenured and tenure-line faculty) is nationally representative of undergraduate teaching faculty in the United States. For more information on this instrument, see Hurtado et al. (2012). The sample contained information on 8,418 non-tenure track faculty members, approximately half of whom worked part-time. Consistent with Dobbin and Simon (2011), models were trained using a random 60% split of these data (n=5,050). Models were tested on the remaining 40% (n=3,368)²⁸. Missingness was handled using full information maximum likelihood in the analyses.

There are several important caveats regarding this sample. First, faculty sometimes work for multiple institutions (Martin Conley & Leslie 2002). We must assume then, that study participants reported specifically on their main academic employer (and not their general experiences in academia). The HERI instrument used clear language asking the respondent to respond only about the institutional employer participating in the study. Another important caveat is the timing of data collection. This study uses the 2010 wave and this period is not far removed from the Great Recession. March and Simon (1958) explained that "when jobs are plentiful, voluntary movement is high; when jobs are scarce, voluntary movement is small." Thus, I expect that turnover intentions may be somewhat suppressed during this particular time period.

Fortunately, the HERI Faculty Survey has some important advantages that make it the best dataset for investigating these research questions. For one, it contains contemporary information relevant to today's academic workforce. This is important because academia has changed rapidly over the last decades and it is important to know what is happening in recent times. HERI also made it a priority to recruit non-traditional faculty and to ask questions particularly relevant to contingent workers. This gives us detailed information on the "invisible faculty" commonly overlooked in other data sources.

²⁷ Most researchers in this line of work have utilized the NSOPF panel study (discontinued in 2004). This includes Antony and Hayden (2011), Seifert and Umbach (2008), and Toutkoushian and Bellas (2003).

²⁸ Training a model on more data generally results in a better fit model. Testing a model on more data generally results in a better estimate of model accuracy. There is no "ideal" split—only a trade-off between fit and accuracy. This study opted for a 60-40 split, similar to the recommendation of Dobbin and Simon (2011).

Measures

Dependent Variables.

*Dimensions of Faculty Job Satisfaction*²⁹: This study used nineteen job satisfaction items to identify four satisfaction subscales. For each job satisfaction item, respondents indicated whether they were “not satisfied,” “marginally satisfied,” “satisfied,” or “very satisfied.” These were coded numerically (1-4) for the analysis. There were four dimensions of satisfaction identified in the exploratory factor analysis: work and supports, co-workers, financial, and benefits.

Turnover intentions: Three questions were used to identify the turnover intentions of faculty: During the past two years, have you considered early retirement? Considered leaving academe for another job? Considered leaving this institution for another? Faculty who responded yes to any of these questions were coded 1 as having turnover intentions. The rest were coded as 0.³⁰

Independent Variables.

Faculty Type: Part-time faculty who would prefer to be working full-time for their institution were coded as “aspiring academics.” Part-time faculty who were not interested in full-time work at their institution were coded as experts (when full-time professional career was outside academia), freelancers (when full-time professional career was not outside academia), and career-enders (when the faculty member planned to retire within the next three years). This study also included full-time adjuncts.

Contextual Variables: Consistent with earlier research, this study coded disciplines according to the Biglan system of departmental classification (Biglan 1973). This study also coded institutional control as public or private.

Covariates.

This study controlled for a range of individual characteristics and contextual variables. Final specification was guided by Cotton and Tuttle’s meta-analysis (Cotton and Tuttle 1986) and was also influenced by an automated variable selection process³¹.

²⁹ As a mediating variable, job satisfaction serves both as a dependent and independent variable in this study.

³⁰ To clarify, a faculty member planning on a traditional retirement does not experience turnover intentions, because a traditional retirement is not “early,” for another job, or for another institution.

³¹ This study used training data and a backward selection process to identify which variables to include in the final model. Covariates that were unable to show a statistically significant relationship with turnover intentions ($\alpha > .05$) were, one by one, backward deleted from the logistic training model (with robust standard errors). The final specification was tested using independent test data withheld from training. This approach allowed for an empirically-driven simplification of the model that substantially reduced the computational demands of the final analysis.

Eight variables were removed from the model by this process³². Joining the independent variables listed above, the final model included the following individual and work controls: age, gender, number of children, native English speaker, highest degree (Ph.D., professional degree, Master's degree, B.A. or less), productivity, time employed, Carnegie research intensity and region. Age and time-employed also included a second-order polynomial.

Analytic Approach

There were two main analytical parts to this study: 1) a factor analysis and 2) a series of structural equation models. These parts were related. The exploratory factor analysis determined which latent factors were suggested by the data and how the nineteen job satisfaction items loaded onto the factors. This factor structure informed the development of the structural equation models. While the first two structural equation models were simpler models, the final structural equation incorporated the measurement model identified in the exploratory factor analysis stage. This full model—a Bayesian probit structural equation model—was used to formally tested hypotheses in this study.

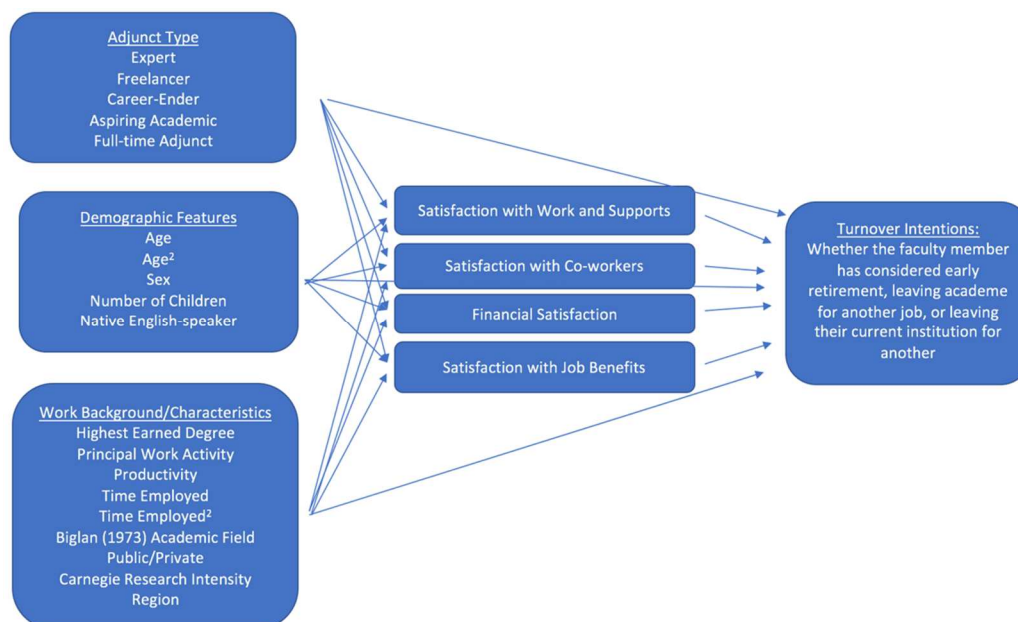
For the factor analysis, early diagnostics³³ suggested a four-factor structure to job satisfaction. In the factor analysis itself, axes were rotated obliquely as correlation was expected among latent factors. Principal axis factoring was employed to help identify underlying constructs in the data. Item loadings suggested the following latent dimensions of job satisfaction: work and supports (.76), co-workers (.79), financial (.79), and benefits (.71) (Cronbach's alpha reported in parentheses). According to standards set down by Spector (1992), the internal consistency of these factors was excellent. Each factor and its respective items are tabulated in the appendix.

The second part of the analysis consisted of a series of three nested structural equation models (SEM), each predicting the outcome of turnover intentions. The first SEM simply regressed turnover intentions on adjunct typology. In the second SEM, covariates were introduced to the model to control for background characteristics. The final model included adjunct typology, covariates, interaction terms and the measurement model of job satisfaction factors. An independent holdout sample of data (n=3,368) was used during testing to help prevent overfitting. The specific estimator used in these models was Bayesian, instead of the traditional maximum likelihood estimator. This was because of the complexity of the model and the resulting computational demands that inhibited convergence. Bayesian methods often perform better in these circumstances (Muthen and Asparouhov 2012), as was the case in this study. The Bayesian structural equation models (BSEMs) used diffuse (noninformative) priors. Future work should incorporate informative priors that can take advantage of earlier findings in this line of research.

³² Union status, salary, professional development, selectivity, institutional type, citizenship status, marital status, and race. Stress was not included in the model for reasons described by Hagedorn (2000). In short, job satisfaction is viewed as the consequence of stressors, so it was important to not "condition out" the variance in the model.

³³ Scree plots, eigenvalues, parallel analysis and optimal coordinates.

Figure 1: Bayesian Structural Equation Model (Full Model with All Covariates)



Note: In addition to the causal pathways indicated by arrows, the model also allowed for unrestrained correlations between all independent variables (variables categorized under Adjunct Type, Demographic Features and Work Background/Characteristics). The model also allowed for inter-correlation among the latent satisfaction variables.

Results

Descriptive statistics of the HERI sample of non-tenure track faculty are available in the appendix. Generally, these statistics were consistent with expectations. The only point worth noting is that “aspiring academics” were older in this sample than expected. In Gappa and Leslie's framework (1993), aspiring academics tended to be younger and pursuing traditional faculty positions. The descriptive statistics suggested that this group may be older and more “settled into” their part-time institutional roles than in Gappa and Leslie's original conceptualization.

Four latent factors were identified in the exploratory factor analysis. The “*work and supports*” factor subsumes Kalleberg's intrinsic and resource adequacy dimensions. Satisfaction with *co-workers* is analogous to the factor identified in the Kalleberg model. *Financial* satisfaction subsumes Kalleberg's financial and career dimensions. However, in my analysis, the *benefits* dimension splits off into its own factor. Kalleberg's model viewed benefits as part of the financial dimension. This difference may be related to unique benefit patterns among adjuncts. When the measurement model suggested by the EFA was specified in a confirmatory factor analysis, the model fit was adequate (CFI .889, TLI .882, RMSEA 0.061). Researchers typically wish to see CFI and TLI values above .95 and an RMSEA less than 0.05 (Allison, Williams and Moral-Benito 2017).

This study specified three Bayesian structural equation models—increasingly complex models terminating with the full specification of the measurement model

suggested by the factor analysis. To assess model fit, this study relied on posterior predictive checking (PPC). PPC utilizes the likelihood ratio chi-square test as the discrepancy function between the actual HERI data and data simulated by the model. A chi-square value closer to zero indicates better fit. On this metric, the structural equation models fit the data with different levels of goodness. The first two models (the simpler models without the measurement model of satisfaction factors) was excellent. Their replicated chi-square values overlapped substantially with observed chi-square values. However, the fit of the full model (with the measurement model) was considerably weaker. A 95% confidence interval for the difference between the observed and the replicated chi-square values in this model was [5178.5, 5471.7].

Mplus calculates posterior predictive p-values for each of the models' difference in chi-squares. While similar to traditional p-values, Bayesian p-values account for the variability in model parameters and do not require asymptotic theory (Asparouhov and Muthen 2010). Poorly fit models reject the hypothesis that the actual and replicated chi-squared statistics are the same. This was the case of the full model (p-value <0.001). The first two models in this sequence, on the other hand, fit the data well according to posterior predictive p-values (.52 and .41).

Satisfaction Hypotheses

While the factor analysis stage was important for the development of a measurement model, all hypotheses in this study were formally tested using the final structural equation model. This is the Bayesian probit SEM that includes the measurement model of the latent satisfaction factors. However, as this is a complex model simultaneously estimating hundreds of parameters, some organization of results was called for. The first table (Table 5) presents only the results specifically pertaining to the satisfaction-related hypotheses. Importantly, this is the part of the model estimating the conditional medians associated with each of the adjunct classes, controlling for individual and work characteristics.

Table 5: Adjunct Satisfaction

	Estimate	Post. S.D.
<i>Work and Supports</i> ^a		
Freelancer	-0.03	0.05
Career-ender	0.03	0.06
Aspiring Academic	-0.11	0.04 **
Full-time	-0.04	0.04
<i>Co-workers</i> ^a		
Freelancer	0.08	0.07
Career-ender	0.09	0.09
Aspiring Academic	0.03	0.06
Full-time	0.07	0.06
<i>Financial</i> ^a		
Freelancer	-0.03	0.05
Career-ender	0.17	0.07 *
Aspiring Academic	-0.33	0.04 **
Full-time	-0.07	0.04 *
<i>Benefits</i> ^a		
Freelancer	-0.01	0.10
Career-ender	0.31	0.14 *
Aspiring Academic	-0.32	0.08 **
Full-time	0.47	0.08 **

^a Reference category = Adjunct Experts

* one-tail p-value <0.05 ** one-tail p-value<0.01

individual and work characteristics not tabulated

With regard to work and supports, this study hypothesized that freelancers would be less satisfied than other types of voluntary part-time faculty. This was because freelancers possess less leverage over key aspects of their work like autonomy and course assignments. However, from Table 5, the test statistic did not support this hypothesis. The coefficient³⁴ (-0.03) was not found to be significantly different than zero (the satisfaction of freelancers on this dimension is comparable to the reference group of adjunct experts). Aspiring academics, on the other hand, reported significantly less satisfaction with regard to work and supports (-0.11**). This was fully expected based on earlier research.

With regard to satisfaction with co-workers, this study expected career-enders to exhibit greater satisfaction. This was because a key reason career-enders “transition” into retirement relates to the importance of relationships in the workplace. However, after controlling for confounders, the co-worker satisfaction of career-enders was comparable to that of adjunct experts. In fact, this study did not find any differences in co-worker satisfaction between any of the adjunct classes (voluntary or involuntary).

Freelancers were reasoned to be lower on financial satisfaction on account of their greater dependency on a meager part-time teaching salary. However, this study

³⁴ This contrast is specifically in relation to adjunct experts. The results are the same when contrasting with career-enders.

found no statistical evidence that they differ from the reference category with regard to financial satisfaction. The study did find differences, however, between adjunct experts and career-enders. Career-enders reported much greater financial satisfaction. Specifically, their median satisfaction was estimated to be .17 higher on this metric. The one tailed p-value (indicated with * when <0.05 and ** <0.01) has a special interpretation in Bayesian analysis. When the parameter estimate is positive, the p-value represents the proportion of the estimated posterior distribution that is less than zero (Muthen 2010)³⁵. Here, with a p-value 0.011 (not tabulated but represented with a single *), only 1.1 percent of the estimated posterior distribution falls below zero. That is strong evidence of a positive effect. More than likely, financial compensation is not a main reason career-enders maintain their part-time work—so they are more satisfied with the compensation they do receive.

As predicted, aspiring adjuncts experienced the lowest financial satisfaction (-0.33**). This almost certainly relates to their involuntary part-time status. However, full-time adjuncts also tended to be less satisfied than adjunct experts with regard to financial satisfaction (-0.07*). Perhaps, with a full-time position, full-time adjuncts expect or would hope for greater financial compensation for such a strong commitment to their employer.

Finally, with regard to work benefits, this study expected a higher degree of satisfaction among career-enders. Job benefits are part of the reason faculty members transition into retirement. Indeed, the analysis produced evidence that career-enders were more satisfied on this dimension than the reference category of adjunct experts (0.31*). The analysis also showed benefits to be a strong source of satisfaction for full-time adjuncts (0.47**). This is probably because, as full-time employees, they probably receive more comprehensive coverage from their institutions. Aspiring academics were less satisfied with their benefits (-0.32**), likely tied to their underemployment.

Turnover Hypotheses

Table 6 presents the results of the Bayesian structural equation models with different levels of complexity. Again, all hypotheses in this study were formally tested in the final model (Model 3). The first two models are displayed for their value as reliability checks and for interpretation of the overall turnover process. On account of the full model's complexity, the only coefficients presented are those with direct effects on turnover intentions.

³⁵ Or alternatively, when the parameter estimate is negative, the p-value represents the proportion of the posterior distribution that is greater than zero.

Table 6: Bayesian Structural Equation Models Predicting Turnover Intentions

	Model 1		Model 2		Model 3	
	Estimate	Post. S.D.	Estimate	Post. S.D.	Estimate	Post. S.D.
Freelancer	0.106	0.055 *	0.051	0.110	0.029	0.125
Career-Ender	0.045	0.055	0.414	0.155 **	0.675	0.172 **
Aspiring Academic	0.181	0.082 *	0.32	0.088 **	-0.026	0.103
Full-time	-0.288	0.082 **	0.286	0.091 **	0.248	0.098 **
Age			-0.011	0.003 **	-0.009	0.003 **
Age ²			-0.001	0.000 **	0.000	0.000
Female			0.03	0.046	-0.043	0.051
Number of Children			-0.059	0.018 **	-0.028	0.02
Native English			0.423	0.076 **	0.61	0.084 **
Professional			-0.031	0.088	-0.038	0.092
Master's			-0.131	0.057 **	-0.064	0.066
B.A. or Less			-0.361	0.099 **	-0.191	0.104 *
Research			-0.027	0.160	0.186	0.171
Administration/Other			0.082	0.075	0.215	0.089 **
Productivity			0.02	0.004 **	0.019	0.004 **
Time Employed			0.01	0.005 *	0.006	0.005
Time Employed ²			-0.001	0.000 **	0.000	0.000
Hard-Pure			-0.066	0.131	-0.129	0.143
Soft-Applied			-0.046	0.061	0.000	0.068
Soft-Pure			0.093	0.054 *	-0.072	0.060
Public ^a			0.127	0.051 **	0.003	0.055
Research II			0.096	0.131	-0.052	0.137
Research III/PhD			0.135	0.148	-0.053	0.149
Bachelors/Masters			0.162	0.126	0.015	0.132
Associates/Other			0.119	0.263	-0.014	0.280
West/Other			0.069	0.064	0.115	0.068 *
Midwest			0.035	0.064	0.071	0.068
South			0.085	0.087	0.238	0.101 *
Satis. w/ Work and Supports					-0.411	0.081 **
Satis. w/ Co-workers					-0.057	0.040
Financial Satisfaction					-1.005	0.087 **
Satis. w/ Job Benefits					-0.008	0.049
Number of Free Parameters	19		463		636	
Fit Statistic: Chi-square C.I.	[-19.039, 21.269]		[-66.471, 109.169]		[5178.478, 5471.727]*	
Posterior Predictive P-Value	0.47		0.6		0.000	

* one-tail p-value <0.05 ** one-tail p-value<0.01

Hypothesis A predicted that each dimension of job satisfaction would be inversely related to turnover intentions. Tabulated under Model 3, this study found support for “work and supports” and financial satisfaction. As satisfaction with work and supports and financial compensation increases, the faculty member is less likely to think about leaving her or his principal academic employer (-0.411** and -1.005**, respectively). This study did not find support for satisfaction with co-workers or job benefits.

For Hypothesis B, it was reasoned that career-enders would be more likely to leave their organizations, even after controlling for job satisfaction (and other

covariates). This is because career-enders have different motives than other adjunct classes. They are transitioning to retirement and part of this may be unrelated to their job satisfaction. This hypothesis was supported in the analysis. Career-enders had the highest probability of turnover intentions (p-value <0.01). The study also revealed that full-time adjuncts were also more likely to leave their institutions, independent of the job satisfaction they experience. Potentially, their full-time commitment to academia is rewarded by other institutions with tenure-line appointments. Further research would be required to confirm this possibility.

For Hypothesis C, institutional control and discipline (Biglan classification) were expected to be related to turnover intentions. Model 2 presents evidence that faculty in public institutions think more regularly about leaving their institutions (0.127, p-value <0.01). However, after controlling for components of job satisfaction in Model 3, this relationship disappears³⁶. This suggests that faculty think about leaving public institutions specifically because they experience lower satisfaction on one or more facets of job satisfaction.

Contrary to expectations, this study produced no evidence that faculty in applied fields were any more likely to leave their institutions after controlling for background characteristics (Model 3). However, the nested models revealed important features of faculty in the “soft-pure” (liberal arts and social sciences) fields. Model 2—which did not control for job satisfaction—showed that faculty in “soft-pure” fields were more likely to consider turnover (than faculty in “hard-applied” fields). However, upon controlling for job satisfaction in Model 3, soft-pure disciplines were no longer associated with turnover intentions. This suggests that faculty may be leaving soft-pure disciplines specifically because they are less satisfied with one or more dimensions of job satisfaction.

Discussion

Most researchers examining the work experiences and turnover of academic faculty have focused on traditional tenure-line faculty. However, with non-tenure track faculty now constituting the majority of academic professors, it is time to seriously consider how to retain non-tenure track faculty. This study drew on Gappa and Leslie's (1993) empirically-derived subclasses of adjuncts to examine the job satisfaction and turnover intentions of adjuncts. It also examined the role of work and organizational features (institutional control, Biglan classification) in this process. Like earlier work, modeling the different dimensions of job satisfaction clarified how the wants and expectations of adjuncts influence their attitudes, thoughts and turnover behaviors.

While research has shown that involuntary part-time faculty (aspiring academics) are generally less satisfied with their work, there has been some debate regarding which aspects of their work are more disagreeable. Maynard and Joseph (2008) found aspiring academics to be less satisfied on Kalleberg's intrinsic, career and financial dimensions. Eagan et al. (2015) and Antony and Hayden (2011) had conflicting results with regard to benefits satisfaction. With the exception of co-worker satisfaction, this study found aspiring academics to be less satisfied across all other facets of job

³⁶ To be clear, this is not to say that institutional characteristics (like public/private) are unimportant with regard to turnover intentions. It is that there is evidence that their effects are channeled through mediators introduced in this study.

satisfaction. This finding seems more consistent with unemployment theory than earlier work, linking surplus education, experience, and skill to various aspects of job satisfaction.

The job satisfaction of adjunct experts and freelancers was comparable across all latent factors. While this degree of similarity was not expected a priori, it is sensible. These two classes of adjuncts do maintain similar structural relationships, even if one holds a full-time career outside academia (academic experts) and one does not (freelancers). Career-enders, on the other hand, differed in important ways. In fact, they experienced higher satisfaction than adjunct experts on both financial and job benefits scales. This was true independent of age—an important confounder controlled for in the model. Perhaps career-enders are “grandfathered” into better salary and benefits and this makes them more satisfied with those conditions. Through internal networks, they may be able to acquire more generous salaries and benefits than could ever be negotiated outside their home institutions. Alternatively, maybe their salary and benefits expectations are different, given that their motives for working part-time are not fundamentally material.

The findings with regard to full-time adjuncts are also important. Earlier work has found that volunteer part-time faculty and full-time faculty are generally comparable in their job satisfaction. The two exceptions are with regard to satisfaction with benefits (Toutkoushian and Bellas 2003, Antony and Hayden 2011) and autonomy (Maynard and Joseph 2008, Antony and Valadez 2002). This study corroborated the findings with regard to benefits, but also found evidence that full-time adjunct faculty have less financial satisfaction as well (compared to adjunct experts or career-enders). It is interesting that, while adjunct faculty differed significantly in their satisfaction with benefits, benefits was found to be unrelated to turnover intentions.

Finally, this study tested a key finding of Ehrenberg et al. (1991), Conley and Leslie (2002) and Ryan et al. (2012), which found that faculty in applied fields were more likely to leave their institutions. This was on account of the connection between applied work and the private sector. However, this study was unable to replicate these findings. After factoring in job satisfaction, applied faculty generally consider leaving their positions at the same rate as any other adjunct faculty type. The analysis did show however that faculty in the “soft-pure” sciences were more likely to leave their institutions. The nested models suggested that this was because of the lower job satisfaction in those fields—not a private sector connection per se.

The findings in this study have important implications for policy-makers and administrators. For one, the most important way that postsecondary institutions can limit their turnover is by developing policies targeting facets of job satisfaction. This study suggests that policies aimed to improve satisfaction with “work and supports” and financial satisfaction will be most effective. Clearly, with the financial pressures many institutions face today, providing substantially better financial circumstances would be challenging if not impossible. However, they may be able to free up resources by investing less in adjunct health and retirement benefits (which are not linked to retention). If they were to transfer those savings to adjuncts in the form of better financial compensation, they would probably have more success retaining non-tenure track labor. Nearly all full-time faculty and about half of part-time faculty currently

receive health or retirement benefits, so such an action would likely have a serious impact.

Of course, administrators may also develop policies aiming to improve “work and supports.” Indeed, many retention strategies employ these kinds of interventions (Kezar 2013, Eagan et al. 2015, Gappa, Austin, and Trice 2007). The findings in this study imply that such strategies are both reasonable and will likely lead to success. Such policies, however, will be unable stem all forms of turnover of course. There will always be occupational mobility outside an institution’s control. In such circumstances, it seems sensible that institutions think more carefully how to best manage turnover. Departments may be able to set up an architecture that helps to deal with higher levels of churn. This might include securing the long-term employment of core administrative faculty with greater responsibility orienting, training and supporting regular faculty additions. They may also want to centralize curriculum so that new faculty members can focus on teaching—not course-planning. There is some evidence that departments are already implementing these kinds of changes (Schuster and Finkelstein 2006).

The design of this study had limitations of course. Relying on cross-sectional data, this study never observed actual turnover behavior. Instead, a cognitive measure, “turnover intentions,” was utilized. While this is a good proxy for turnover, it is not a perfect substitute. Future work should pursue actual turnover data (ideally longitudinal), thus allowing a more complete exploration of the turnover process. As with any regression framework, omitted variables potentially bias results and compromise test statistics. While the HERI instrument was advantageous for its diverse set of satisfaction items, it did not contain every important predictor of turnover (Cotton and Tuttle 1986). If faculty with different turnover propensities³⁷ drifted into different kinds of faculty roles, this would clearly bias results.

The timing of this sample also introduces an important limitation. Data collection for the 2010 wave occurred shortly following the “Great Recession” when labor market conditions were tight. This probably constrained mobility and influenced the turnover intentions of adjunct faculty at the time (Steers and Mowday 1981, March and Simon 1958). Results from this time period, thus, may not generalize well to time periods with better economic conditions. Of course, some researchers have found limited effects of the labor market (Zhou and Volkwein 2004), so the economic environment may also be less important than what many think. This would be a useful area of future research.

Conclusion

Despite inevitable limitations, this study undoubtedly advanced this line of research in important ways. It showed that finer-grained distinctions are absolutely necessary in order to fully understand turnover patterns in academia. It also provided important insights into how work experiences are related to turnover among adjunct faculty. By targeting satisfaction components empirically related to turnover, institutions can help secure a happy, committed and stable adjunct workforce.

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³⁷ Propensities not captured by the model.

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Appendix

Table 7: Descriptive Statistics (n=8418)

	Full-time	Aspiring Academic	Career-Ender	Expert	Freelancer
n	4527	2315	210	715	612
Avg. Age	53	52	65	48	49
Female	41%	68%	47%	53%	56%
Married	84%	83%	82%	75%	77%
White	86%	91%	92%	79%	84%
Ph.D.	14%	24%	30%	23%	37%
Professional	12%	9%	12%	9%	9%
Masters	60%	60%	53%	60%	49%
BA or Less	15%	7%	4%	8%	5%
Teacher	98%	93%	95%	97%	80%
Researcher	1%	1%	1%	1%	4%
Administrator/Other	2%	5%	4%	2%	17%
University	28%	27%	23%	26%	36%
Public	29%	36%	39%	39%	38%
Research I	2%	3%	2%	2%	5%
Research II	20%	15%	12%	15%	21%
Research III/Doctoral	4%	6%	6%	7%	9%
Bachelor's/Master's	73%	75%	79%	76%	64%
Associates/Other	0%	0%	0%	0%	1%
Hard/Applied	55%	32%	33%	37%	44%
Hard/Pure	2%	3%	1%	2%	4%
Soft/Applied	18%	24%	27%	18%	19%
Soft/Pure	26%	41%	39%	44%	33%
Selective	4%	6%	8%	5%	14%

Table 8: Standardized Factor Loadings

Respondent's satisfaction with:	axis 1	axis 2	axis 3	axis 4
Salary	0.062	0.269	-0.051	0.411
Health benefits	0.012	0.823	0.005	-0.028
Retirement benefits	-0.023	0.87	0.014	0.024
Opportunity for scholarly pursuits	0.141	0.222	0.008	0.454
Teaching load	0.345	0.041	-0.084	0.406
Quality of students	0.351	0.038	0.021	0.139
Office/lab space	0.317	0.199	0.069	0.076
Autonomy and independence	0.550	0.034	0.201	-0.072
Professional relationships with other faculty	0.027	0.018	0.909	-0.026
Social relationships with other faculty	-0.042	-0.001	0.755	0.081
Competency of colleagues	0.283	0.014	0.383	0.038
Job security	0.012	0.078	0.088	0.562
Departmental leadership	0.379	-0.081	0.255	0.167
Course assignments	0.609	-0.016	0.003	0.164
Freedom to determine course content	0.689	0.03	-0.014	-0.092
Availability of child care at this institution	-0.019	0.023	0.041	0.447
Prospects for career advancement	-0.025	-0.026	0.045	0.818
Clerical/administrative support	0.313	-0.042	0.118	0.16
Tuition remission for your children/dependents	0.122	0.291	-0.024	0.215

Table 9: Latent Factors with Satisfaction Items



The measurement model in this study utilized nineteen job satisfaction items (Table 9). Diagnostic tests³⁸ were used to identify the optimal number of factors. Using oblique rotation and principal axis factor extraction³⁹, the EFA identified the latent factor structure in the matrix of satisfaction items. All but one item⁴⁰ successfully loaded using traditional criteria (Tabachnick and Fidell 2001). The summated ratings scales were tested for reliability using Cronbach's alpha—a calculation of internal consistency. All factors were associated with a Cronbach alpha above .71, which Spector (1992) considers "excellent" internal consistency⁴¹.

³⁸ Tests included scree plots, eigenvalues, parallel analysis and optimal coordinates.

³⁹ Oblique rotation was utilized because the study expected latent factors to be correlated. Principal axis factoring was factoring was employed because this study was most interested in identifying the underlying constructs in the data.

⁴⁰ The only item below the common threshold of .3 was satisfaction with tuition remission (.291). As it was close to the threshold, this variable was not excluded from the measurement model.

⁴¹ .71 and higher is excellent, .63 to .7 is very good, .55 to .62 is good, .45 to .54 is fair, and .3 to .44 are poor Comrey (1992).

Abstract

The work environment and experiences of faculty beginning off the tenure track are typically inferior to those of traditional tenure-line faculty. However, there is little research on how these differences may impact career attrition from academia. Given that most faculty members now work off the tenure line, it is critical to reassess career attrition in academia. Drawing on panel data from professors in the Survey of Doctorate Recipients (n=17,129), this study examines the impact of appointment type and work responsibilities on career permanence. It also assesses how structural characteristics are related to the risk of occupational turnover.

Introduction

The proportion of faculty working off the tenure track has increased steadily over the last half century (Schuster and Finkelstein 2006). Today, more than two out of three postsecondary faculty appointments are made off the tenure line (National Center for Education Statistics 2015, Schuster and Finkelstein 2006). Largely an institutional cost-saving measure, non-tenure track faculty earn lower salaries, fewer benefits and experience generally inferior working conditions (Gappa, Austin, and Trice 2007, Baldwin and Chronister 2001). For these reasons and others, it is reasonable to assume that beginning off the tenure-track would make it more difficult to establish a long-term career in academia. However, this has not been demonstrated empirically. The goal of this study is to determine the impact of initial appointment type on permanence in the academic profession. It also examines how structural factors (work activities and organizational context) affect the risk of academic career attrition.

This study utilizes two decades of panel data from the Survey of Doctorate Recipients (SDR) (1993-2013). SDR follows a sample of research doctoral degree recipients who graduated from science, engineering, and health fields. This study makes use of a specific subset of doctorate recipients—those beginning careers in academia (n=17,129). This is an important subset. SDR contains a wide range of demographic, education and career-related information. Importantly, this study is one of the first to use survival analysis⁴² in this line of research— a “critical” methodology repeatedly called for (Morita, Lee, and Mowday 1989, Rhodes and Doering 1983, Hom et al. 2017). For most attrition-related studies, survival analysis is superior to traditional regression methods because of how it accounts for censoring (Allison 1982).

This study builds on this line of research in several important ways. For one, scholars have called for greater consideration of time in turnover research (Hom et al. 2017, Lee, Burch, and Mitchell 2014), but rarely has the timing of turnover been prioritized in faculty research (Rosser 2005). This study is the first⁴³ to offer robust, nonparametric estimates of time to faculty career attrition (survival curves). Importantly, it examines specifically how initial appointment on and off the tenure track impacts

⁴² Also known as event history analysis.

⁴³ Kaminski and Geisler (2012) also employ survival analysis to faculty data, however, they did not examine turnover timing using survival curves.

career attrition. This is critical because higher education is dependent on its non-tenure track labor force but their turnover behaviors have historically been ignored by researchers (Gappa and Leslie 1993, Kezar and Sam 2010). Second, this study develops and tests a model using actual turnover data—not “turnover intentions” as used in most faculty studies. This is a substantial contribution: nearly all theory is based on models examining a cognitive proxy—a poor substitute when actual turnover data can be mined from data.

Establishing a better understanding of the academic turnover process is crucial. Turnover can be either good (e.g., renewing energy, introducing new ideas) or bad⁴⁴ (e.g., losing talent, eroding morale) for institutions and professions. Whether it is good or bad is generally a function of how much attrition there is and when it is occurring. By clarifying the patterns and places of academic attrition, this study provides a useful guide for administrators, human resource managers and policy makers. Secondly, there are not enough jobs to go around in academia (Larson, Ghaffarzadegan, and Xue 2014) and young people may not be aware of the risks of pursuing an academic career (Benton 2003). This study provides transparency into the academic career attrition process, thereby helping young people (and graduate programs) make informed decisions about their futures. For those who decide to pursue academic careers, the findings imply strategies for successfully establishing and maintaining a career in academia.

Literature Review

Conceptual Framework

Research on turnover is burdened by extensive conceptual ambiguity and redundancy⁴⁵ (Morrow 1983, Maertz and Griffeth 2004), so it is important to establish up front a clear conceptual framework for the examination of this topic. To be clear, this study examines career turnover: the event whereby a faculty member changes his or her occupation to one outside the typical career progression (Lee, Carswell, and Allen 2000, Blau, Allison, and St. John 1993). By typical, I mean the orderly sequence of development within an occupational domain and the progressive accumulation of greater responsibility (Becker and Strauss 1956, Slocum 1966). An occupation is identifiable by its unique collection of skills, knowledge, and duties. In this study, the terms occupation, profession, vocation, and career are synonymous.

Occupational turnover is one manifestation of a more general process of employee withdrawal. Discouraged workers withdraw from their work in many ways. Some withdraw psychologically, lowering the “potency” of their job involvement. Others try to improve their work conditions through promotion or unionization (Allport 1962). Leaving a job and pursuing employment elsewhere is a consequential form of withdrawal

⁴⁴ Attrition requires that organizations recruit and train replacements and it generally results in lower productivity (Hausknecht, Trevor, and Howard 2009) and performance (Lee, Carswell, and Allen 2000). Student learning may also be compromised when their instructors have little or no experience teaching courses (Eagan and Jaeger 2008).

⁴⁵ Occupational turnover is closely related to occupational retention, career resilience, occupational commitment, occupational turnover intentions, etc.

because of how it disrupts working relationships and often changes work activities (Hulin, Roznowski, and Hachiya 1985).

In terms of frequency, occupational turnover is somewhat rare. This is because abandoning a line of work typically entails significant costs like additional training, severed work relationships, time and resources lost in the transition (Neapolitan 1980, Blau 2000). It is much more common, for example, for discouraged workers to leave their organization to work for another organization in the same field. This kind of turnover, voluntary organizational turnover, merely involves changing one's employer—not changing one's occupation or retiring skill sets (Louis 1980). Perhaps because this transition is so much more common, organizational turnover has received far greater research attention and theoretical development (Blau and Lunz 1998).

While distinct from organizational turnover (Blau 2000), the theoretical architecture behind occupational turnover is nearly always situated in the extensive work conducted on voluntary organizational attrition (Lee et al. 2000). This study, like others, draws strongly on insights from the field of organizational theory, as well as the empirical literature on career attrition. While some have called for greater development of theory tailored for career turnover (Blau 2007), little research to date has shown these causal processes (career versus organizational turnover) to differ substantially.

Theory on Turnover

Most theoretical work on turnover is rooted in expectancy theory (Vroom 1964). Expectancy theory is a general theory of motivation that posits a rational or cognitive basis for behavior. In this paradigm, an individual identifies a desirable goal, rationally⁴⁶ evaluates options to accomplish that goal, and subsequently selects the option with the greatest expectancy of bringing about the desired end. In the context of work, this means that individuals possess expectations about what their work should be. When a job meets expectations (or reasonably leads to expectations), employees maintain the work arrangement. If their work falls short, workers pursue behaviors with a likelihood of bringing about work expectations. They may be motivated to renegotiate work responsibilities, seek promotion, consider a reassignment, join a union, or exert less effort (Hulin et al. 1985). Quitting a career is one possibility and sometimes may be viewed as the option most likely to bring about one's work expectations. Importantly, expectancy theory implies that an individual's decision to stay or leave is a function of structural, attitudinal and environmental factors.

March and Simon (1958) were the first to integrate components of expectancy theory into research on employee withdrawal. (Mobley 1977) and (Price 1977) provided a sound empirical foundation for many of these ideas, operationalizing job desirability with measures of job satisfaction. Mobley's (1977) work was key for framing turnover as a drawn-out process. His models also elucidated in great detail the cognitive steps that precede a decision to quit. Mobley et al.'s (1979) content model tied quit decisions to distal causes (whether some task was disliked or a new job was more attractive). The specific mechanism was mediated by attitudes and other subjective evaluations of

⁴⁶ Some debate how truly "rational" quit decisions may be (Lee and Mitchell 1994, Hulin, Roznowski, and Hachiya 1985), but rationality or bounded rationality is nearly always assumed.

external features and circumstances. Price (1977) called turnover the “the degree of movement across the membership boundary of a social system.” Price (1977) and Price and Mueller (1981) focused more on the structural and economic context of turnover. This included the effect of environmental, workplace/organizational features (integration, pay, professionalism), organizational characteristics, labor market opportunities, and social relationships. For both Mobley and Price, (dis)satisfaction was specified as a key driver of turnover.

While work expectations (measured by satisfaction) were essential to Mobley and Price’s work, another line of research focused more on the forces constraining mobility. Becker (1960) argued that workers make “side bets” when participating in social organizations. These are investments that would result in costs if a worker were to leave. Many side bets are external, like a worker’s choice to invest in a home or establish “roots” in a community. Some side bets are accumulated through tenure in an organization, like health and retirement benefits, seniority in an organization, as well as one’s cultivated workplace image. Often, side bets accrue great value and the cost of losing organizational membership far exceeds whatever gains could be expected from changing work arrangements.

Later, Becker’s theories were incorporated into the broader and more formal construct of job commitment (Porter, Crampon, and Smith 1976, Meyer, Allen, and A. Smith 1993, Porter et al. 1976). In addition to costs⁴⁷, workers also tended to develop affective and normative commitments for organizations (Meyer and Allen 1991). *Affective* commitment referred to the employee’s emotional commitment to a group’s values and goals. *Normative* commitment recognized the moral obligation many feel for their organization or profession. Research has shown that workers develop important commitment attitudes to both their organization and profession (Irving, Coleman, and L. Cooper 1997, Carson, Carson, and Bedeian 1995). Generally, organizational commitment is viewed as more stable than job satisfaction (Morrow 1993). This line of research is important because it recognizes that work choices are always made under constraints—some rational and some emotional. Workers do not simply change a career or an organization because they seek to optimize their own job satisfaction and self-interest. Choices are bounded by costs, obligations, and loyalty to one’s profession, organization, and colleagues.

Commitment research is closely related to another line of research stressing the forces that motivate workers *to stay* (in contrast to forces that constrain)(Mitchell and Lee 2001). This is the theory of embeddedness, which is less “affect or affect-saturated” and more contextual than commitment (Lee et al. 2014). Embeddedness recognizes that workers are enmeshed in larger social systems that facilitate or encourage individuals to stay. Lee et al. (2014) argued that embeddedness has three critical components: linkages, perceptions of fit, and desire to avoid sacrifices of leaving. Feldman and Ng (2007) explored professional embeddedness, finding the important role of occupation-related groups (e.g., industry contacts), activities in professional societies, educational investments and occupational status. Some (Hom et al. 2017) have noted

⁴⁷ Now referred to as continuance commitment.

the conceptual overlap between theories of embeddedness and the theory of organizational commitment⁴⁸.

While these earlier theories have been important for understanding turnover, they left much variation in turnover unexplained. The “unfolding model” (Lee and Mitchell 1994) is the latest theoretical perspective to clarify what other features are important to the turnover process. The unfolding model posits that turnover is principally driven by “shocks⁴⁹” that are external to the job itself (Hom et al. 2017). Hagedorn (2000) called these “triggers.” Parenthood, for example, causes men and women to reconsider work arrangements and make significant job-related decisions. Sometimes this means pursuing a job with greater financial rewards and sometimes this means leaving the workforce to focus on family responsibilities. Unsolicited job offers are another important shock. Regardless of a worker’s job satisfaction, a secure offer may force a reconsideration of one’s work and lead to the decision to change employers or industries. Some have found that external shocks explain more variation in turnover than any other factors (Holtom et al. 2008)⁵⁰.

As noted, occupational turnover models are typically situated in organizational theory; however, researchers have discovered some nuances to the occupational attrition process. Guided by the theoretical work⁵¹ of Rhodes and Doering (1983), Blau (2007) found work exhaustion⁵² to be particularly salient to the career change process. Similarly, Lee and Ashforth (1996) and Barnes, Agago, and Coombs (1998) identified the related process of “burnout” to be a significant predictor of occupational turnover. Work exhaustion and burnout are largely channeled through the mediator of job satisfaction, meaning that job satisfaction may be more important to career attrition than other socio-psychological variables (Blau 2007, Blau and Lunz 1998, Blau 2000).

Prior Research on Faculty Career Attrition

Few studies have examined academic career attrition. Utilizing a stress-based model based on Gmelch, Wilke, and Lovrich (1986), Barnes et al. (1998) found that the two most important predictors of intent to leave academia were stressors related to time commitment and sense of community. Background characteristics in this study had very little influence on attrition (e.g., gender, tenure status or academic discipline). Johnsrud and Rosser (2002) used data from a single institution to develop a model of faculty turnover intentions. Rosser (2004) later tested a similar model using nationally-representative data (NSOPF 1999), which included non-tenure track faculty members.

⁴⁸ However, Mitchell and Lee (2001) and others have found an independent effect of embeddedness on turnover.

⁴⁹ Maertz and Griffeth (2004) identified eight reasons for employee turnover.

⁵⁰ Perhaps sixty percent of turnovers may be driven by shocks described in the unfolding model (Weller et al. 2009).

⁵¹ Rhodes and Doering 's(1983) career-change model was an attitude-based model firmly situated in traditional organizational research (Mobley, Horner, and Hollingsworth 1978, Price 1977, and Steers and Mowday 1981). It expressed career withdrawal cognitions (career change intent) as a function of individual/organizational antecedents and job/career satisfaction.

⁵² Moore (2000) called work exhaustion “the depletion of emotional and mental energy needed to meet job demands.”

She confirmed that faculty perceptions of their work lives (work activities and supports) have an important indirect impact on turnover (through job satisfaction). While tenured faculty viewed their work lives more negatively, she found that tenure status substantially boosted job satisfaction, resulting in fewer turnover intentions.

Daly and Dee (2006) examined intent to stay among full-time instructional faculty in urban research settings. Some of these faculty members held tenure and the rest were on the tenure track. They found that structural antecedents had indirect effects on intent to stay, channeled through job satisfaction and organizational commitment. Perceived job opportunities also had important direct effects on intent to stay. Utilizing NSOPF (1999), Zhou and Volkwein (2004) examined the organizational turnover of tenured and non-tenured faculty (aggregating all faculty without tenure, including faculty on the tenure-track, non-tenure track and those at institutions without tenure systems). They found that the most important components of turnover intentions were education (whether the faculty member possessed a Ph.D.), seniority/rank, and sense of job security. Each of these features was important for limiting thoughts about leaving.

Using data from HERI, Ryan, Healy, and Sullivan (2012) examined the occupational turnover intentions of faculty at a large public research university. They found that structural antecedents (hard-applied disciplines, fit, support, stress) and attitudes (satisfaction) were all related to occupational turnover intentions.

Limitations of Earlier Research

While researchers have developed insightful models predicting turnover (Hom et al. 2017), only on rare instances have they empirically documented the timing of early-career attrition among postsecondary faculty members. This is especially the case for non-tenure track faculty, who have historically been disregarded by researchers (Kezar and Sam 2010, Gappa and Leslie 1993). This study addresses this oversight, producing robust estimates of faculty attrition that account for censoring.

Secondly, when this line of research has examined the impact of tenure, it has typically contrasted faculty holding tenure with those on the tenure-track (Barnes et al. 1998, Daly and Dee 2006, Ryan et al. 2012). In the few cases including non-tenure line faculty, they were confusingly aggregated with tenure-line junior faculty (Rosser 2004). Only Johnsrud and Rosser (2002) specifically examine the class of non-tenure track faculty⁵³, but utilizing data from a single university system, it is unclear how generalizable findings may be. Now that the faculty majority hold non-tenure line appointments, it is pressing to establish a better understanding of how initial appointment status impacts career attrition. This study is one of the first to put non-tenure track faculty at the center of its research agenda.

Third, researchers of turnover make a big assumption when they test theory using “turnover intentions,” rather than actual turnover. As it is the best predictor of actual turnover, intentions are admittedly a “good” proxy (Bluedorn 1982, Rosser 2004). However, institutions are typically interested in turnover behaviors and there is no substitute for a behavioral measure—especially when the distance between thinking about quitting and actually quitting is so large. Research has shown that turnover

⁵³ Presumably, “instructors” indicates non-tenure track status.

intentions may only share a quarter of its variation with actual observed turnover (Allen, Weeks, and Moffitt 2005, Griffeth, Hom, and Gaertner 2000) and this should be concerning. Unlike earlier studies, this study mines faculty panel data to identify actual turnover, and it uses this information to test a model firmly situated in this line of research.

Finally, research has long been interested in the structural determinants of turnover attitudes, cognitions and behaviors (Price 1977). However, the abstract findings from this line of research are rarely tied to particular structural features of postsecondary institutions. Daly and Dee's work (2006), for example, examines how faculty work environments (autonomy, communication openness, distributed justice, role conflict and workload) impact career turnover. Each of these features, of course, suggest potential interventions for administrators; however, there is no consideration of how traditional postsecondary institutional features (e.g., type/level, public/private control, research intensity, discipline) are related to turnover. Administrators are often less informed of their human resources than many realize (Cross and Goldenberg 2009), so identifying the institutional features associated with greater risk of faculty departure is an important contribution.

Proposed Model

While there are some differences in how researchers have specified turnover models, this is mostly attributable to authors' diverse disciplinary orientations—not fundamental differences in how theorists believe attrition occurs (Smart 1990). In general, turnover is a function of distal antecedents (e.g., job characteristics, organization, personality) which affect attitudes (e.g., job satisfaction, commitment). These attitudes, in the context of external conditions (labor market opportunities⁵⁴), bring about turnover cognitions and, for some, actual turnover (Hom et al. 2012, Smart 1990). This is true both for organizational turnover as well as occupational turnover (Blau 2007, Rhodes and Doering 1983). As discussed in the review of the literature, research has shown that this general model extends readily to the case of academia. This study integrates the Rhodes and Doering (1983) career-change specification with attention to correlates identified in Cotton and Tuttle's meta-analysis (1986) of employee turnover.

Research Questions

How does initial appointment type affect the timing of career attrition among tenure-line and non-tenure track faculty? How important is an initial tenure-line appointment for maintaining a career in academia? Which faculty work activities are related to risk of career attrition? Are traditional postsecondary institutional features linked to higher risk of career attrition? What are the implications of these findings for public policy and the administration of higher education?

Survival analysis is one of the best approaches for answering these kinds of questions. As Allison (1982) explains, because of censoring and time-varying explanatory variables, standard regression methods would be inappropriate for this

⁵⁴ Labor market conditions have a direct effect on turnover (Daly and Dee 2006).

study. There would almost surely be serious bias or loss of information. Researchers have consistently called for greater use of longitudinal methods and survival analysis (Steel 2002, Lee et al. 2014, Morita et al. 1989) to examine turnover. Rhodes and Doering (1983) called the use of panel data “critical” to the field.

This study utilizes discrete-time measurements, as this was how the panel data in this study were collected. The wave intervals of this study are expected to be short enough to capture variation among different faculty types. Research has shown that non-tenure track faculty typically remain in their positions for many years, meaning that job experiences likely span one or more intervals of data collection. According to the American Federation of Teachers (2010), 32 percent of part-time, non-tenure track adjuncts have held their positions between six to ten years. A plurality (40 percent) have worked on their campuses for 11 years or more.

Hypotheses

There are many reasons to suspect that career permanence will be significantly shorter for faculty beginning their careers off the tenure track. Tenure protects academic freedom and provides the job security that makes the profession attractive (Xu 2008). It also reduces stressors linked to turnover (Thorsen 1996). Role conflict is probably also important as professors (particularly Ph.D. recipients with research backgrounds) are typically socialized into traditional professional norms that lead one to expect and value a tenure-line appointment. Beginning off the tenure track, then, probably results in the kind of role conflict that reduces job satisfaction and drives career attrition (Daly and Dee 2006).

While no national studies map the timing of academic career attrition using survival curves, considerable research has been conducted on elementary and secondary school teachers. It is my belief that this body of research can inform our expectations, although there are admittedly significant differences between teachers and professors. Ingersoll (2002) found that 14% of school teachers left after one year, 33% left after three years and 46% left after 5 years⁵⁵. Estimates from the American Federation of Teachers (2010) suggest that professors may have similar career attrition patterns—though slightly less pronounced.

Causal models have tended to find that, net of controls, tenure matters with regard to career turnover. Tenure status had the single largest total effect on turnover intentions in Rosser (2004). Bland et al. (2006) found that, when asked whether they would do it over⁵⁶, non-tenure track faculty reported less interest in academic careers. They were also more likely to report expecting to change positions in the near future. Thus, earlier work suggests that initial appointment off the tenure-track should be associated with greater risk of career departure, even after controls are introduced. The

⁵⁵ The National Center for Education Statistics (2014) tabulated that 7.7% of teachers leave their profession every year (an additional 8.1% change schools).

⁵⁶ This is also a common measure of occupational commitment.

second hypothesis is identical to the first, except that it controls for confounders in a semi-parametric model (a Cox proportional hazards model).

Hypothesis 1: *Faculty with initial appointments off the tenure track will tend to leave their careers significantly earlier than those beginning with tenure-track appointments.*

Hypothesis 2: *Net of controls, initial appointments off the tenure track will result in higher risk of career attrition.*

It is well-established that immediate work environments are extremely important for turnover (Lee et al. 2000, Hom et al. 2017). Thus, the principal activities faculty members engage in surely have an impact on their career satisfaction, commitment and turnover. Authors have highlighted the importance of role conflict in job satisfaction. Employees more aligned with their training and career expectations experience greater work satisfaction. Blau's findings (2000) on professional context are also suggestive of role conflict. Academic faculty are generally socialized into research expectations (particularly for the sample used in this study). So, faculty members appointed to predominately teaching or administrative roles may experience greater role conflict and propensity to leave their careers. On the other hand, studies have also shown research to be more stressful than teaching or administration (Matier 1990, Thorsen 1996, Rosser 2004). Working with students (Xu 2008) and teaching (McGee and Ford 1987, Hoyt 2012) have also been found to be important to retention⁵⁷. Research experience is also highly valued (and lucrative) in the private sector, which suggests that "applied" research faculty may experience a greater "pull" away from academia (Ryan et al. 2012). While this study acknowledges that role conflict may be important, it expects that research stress and private sector "pull" will be the dominant forces of career attrition for faculty with initial research appointments⁵⁸.

Hypothesis 3: *Compared to primary appointments in teaching or administration, research-intensive positions will have a higher risk of career attrition (controlling for faculty tenure status).*

While some have found that institutional characteristics matter with regard to turnover (Zhou and Volkwein 2004), little evidence suggests that traditional postsecondary features impact career turnover in any substantial way. Examining organizational characteristics, Blau (2000) found little evidence of an effect of organizational context⁵⁹ on career turnover. Johnsrud and Rosser (2002) dropped traditional postsecondary institutional features (e.g., institutional type) from their model after they failed to show a correlation with turnover in an exploratory analysis. Thus, research in general suggests that turnover is more of an individual-level process (and

⁵⁷ For a conflicting opinion, see Smart (1990).

⁵⁸ On account of findings in Cross and Goldenberg (2009), this study also expects that administrators will attrite at higher rates than teachers as well.

⁵⁹ A construct consisting of organizational reduction, shift schedule, and full-time/part-time status.

less organizational or institutional). Therefore, while it is important to examine whether institutional features may impact career turnover, I expect weak or insignificant relationships with career turnover.

Hypothesis 4: *Traditional institutional characteristics will be unrelated to risk of career attrition.*

Method

Sample

This study uses data from the Survey of Doctorate Recipients (SDR) from 1993 to 2013. While SDR goes back to much earlier decades, significant changes were made to the survey in the early 1990s. Given the complications of interpreting earlier data and that the focus of this study is on early-career scholars, it was reasonable to exclude the data of distant waves. SDR consists only of doctoral recipients: every subject has earned a research doctoral degree from an American postsecondary institution. This study only used data from individuals who were appointed to a position (as their principal employment) at a postsecondary institution (at any time after receiving their Ph.D.). This is a distinct subset of Ph.D.-recipients, as many young people enter graduate school and the workforce without any intention of ever working in academia. In total, there were 17,129 individuals contributing one or more waves of data. Forty-nine percent were in tenure-granting institutions. Fifty-one percent were in institutions⁶⁰ without tenure systems. Subjects were followed until they were no longer principally employed in academia (if they ever left).

Nonresponse rates are always an issue—particularly in longitudinal survey designs. Massey and Tourangeau (2013) report that nonresponse rates over 30% are quite common in major national surveys today and that it is not uncommon for rates to exceed 60%. By this standard, nonresponse in the SDR was relatively low: the unweighted nonresponse rate in 2015 was 32%. A clear concern for this study is whether this censoring may be informative of the timing of career attrition. If it is, estimates of model parameters could be significantly biased and this is a difficult problem to diagnose.

Measures

Dependent variable. The dependent variable in this study was time, in years, from initial academic appointment to attrition from academia. This value was calculated from panel data. At each wave, faculty recorded whether or not they were employed at an educational institution. Their first report of academic employment was viewed as their start date. Faculty members were followed every wave until they reported employment outside of academia (or were censored). In addition, one year was added to the attrition time of each subject to avoid the case of “spontaneous attrition.” Faculty members who enter and exit in the same year—an important segment—cannot mathematically be included in a survival analysis. Adding one year to each event time is equivalent to

⁶⁰ Non-tenure systems include most for-profit and private, 2-year institutions. The number of public, 2-years institutions and private, 4-year institutions without tenure systems has also been growing over time (see Figure 3 in Appendix).

assuming that academic appointments began midway through the interval that preceded their “start date.” Most faculty did not leave their careers during the course of this study, so their event times were censored. Regardless of tenure status, most faculty members (even non-tenure track) tended to work lengthy periods for academic employers (American Federation of Teachers 2010).

Independent variables.

Tenure-line appointment was reported by faculty members in each wave. The value reported at the time of first academic appointment was recorded as initial appointment type. Faculty were coded as tenure-track, non-tenure track (but at an institution with a tenure system) or non-tenure track (but without a tenure system at their institution). Faculty beginning on the tenure-track constituted 31.1% of the sample. 18.4% began off the tenure-track but in a tenure system institution. 50.5% begin their first academic appointments at institutions without a tenure system.

Principal work activity was reported in each wave. The value reported at the time of first academic appointment was recorded as initial work activity. Positions were coded to be primarily teaching, research or administration/other.

Organizational Characteristics were reported at first wave of academic appointment. SDR contained information on institutional control (private/public), type/level (two-year, four-year, medical, or research) and Carnegie research intensity (RI, RII, doctoral institution, medical/health institution, or other). Ideally, this study would have also controlled for discipline, however, this information was not provided for all time points and thus it was excluded from the study.

Covariates. The model developed in this study controls for a range of demographic, work and organizational variables. Choice of covariates was influenced by Cotton and Tuttle’s comprehensive meta-analysis of turnover (Cotton and Tuttle 1986). Demographic controls included age, sex, education, minority, marital, parental and citizenship status at the onset of their first academic appointment. This study also controlled for logged entry salary. Entry date (the year of first academic appointment), a continuous variable, was used to control for cohort effects. Length of interval between receipt of degree and academic appointment was controlled for as well (Schuster and Finkelstein 2006). I include a measure of workplace training as this connotes support and commitment (through social exchange), which are known to be important to turnover (Ryan et al. 2012). Although some of these covariates varied with time, this study only utilized measures at the time of academic appointment.

Results

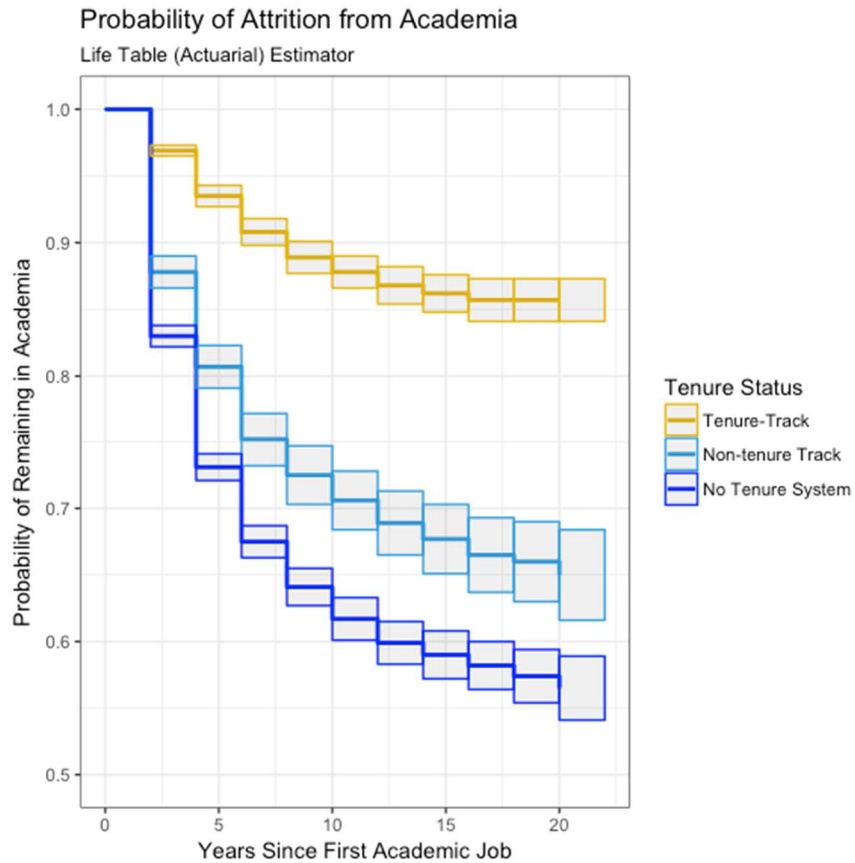
This study utilized two methods of survival analysis. To calculate nonparametric estimates of survival probabilities (for the first hypothesis), this study utilized the life table method (actuarial estimator). This method is similar to the Kaplan-Meier estimator but

has computational advantages in large samples (Allison 1982)⁶¹. To calculate regression coefficients and test statistics for the remaining hypotheses, this study utilized a Cox proportional hazard regression.

Life table estimates are reported in the appendix (Table 11). Corresponding survival probabilities are graphed and presented in Figure 2. For the first hypothesis, it was reasoned that faculty with initial appointments off the tenure track would leave their careers at a faster rate than those beginning on the tenure-track. This hypothesis was confirmed using the score (log-rank) test (p -value <0.001). From Figure 2, we see that the attrition curve is steepest during the first years of employment. For faculty working off the tenure line but at an institution with a tenure system, only 72% of them remain in an academic career after ten years. For faculty working at institutions without a tenure system, a mere 63% remain in academia ten years later. Furthermore, it is not clear that the attrition rate ever bottoms out during the course of the study. This suggests career volatility may be a serious issue at all career stages for non-tenure track faculty. Faculty with appointments to the tenure line tend to maintain academic careers much longer. In fact, nearly 90% of tenure-track appointees continue to work in academia a decade later. Additionally, unlike non-tenure track appointments, the attrition rate of initial tenure-track appointments levels off after a decade, suggesting the emergence of a degree of stability among these faculty members.

⁶¹ In any case, actuarial-based estimates and the Kaplan-Meier estimates were comparable.

Figure 2: Survival Curves



While the life-table estimates of survival probabilities are important for descriptive purposes, this method has limitations. Importantly, this approach does not allow for the control of variables that may be confounding the relationship between tenure-line appointment and time to attrition. For this reason, we turn to Cox proportional hazards regression to examine key relationships. The Efron method was employed to handle ties.

Table 10: Cox Proportional Hazards Models

	Model 1		Model 2		Model 3		Model 4	
	exp(coef)	z	exp(coef)	z	exp(coef)	z	exp(coef)	z
Entry Date	0.964	-8.475 **	0.966	-6.818 **	0.966	-6.647 **	0.966	-6.690 **
Tenure status (ref. Tenure-track)								
Non-tenure Track (NTT)	2.671	10.360 **	2.295	8.360 **	2.280	8.230 **	2.730	7.166 **
No Tenure System	3.844	17.135 **	2.711	11.378 **	2.683	11.078 **	3.553	10.181 **
Time between Degree & Job			1.004	0.223	1.005	0.270	1.006	0.308
Principal Activity (ref. teacher)								
Administrator/Other			1.675	5.051 **	1.680	5.079 **	1.647	4.863 **
Researcher			1.550	5.043 **	1.556	5.077 **	1.530	4.875 **
Private Control			1.069	1.096	1.072	1.136	0.959	-0.477
Institution Type (ref. Four-year)								
Two-year			1.029	0.143	1.019	0.091	0.837	-0.746
Medical			1.187	2.345 *	1.186	2.327 *	1.121	1.175
Research Institute			1.199	2.098 *	1.202	2.126 *	1.080	0.724
Carnegie Status of Grad Inst (ref. RI)								
PhD Research II			1.156	1.497	1.155	1.488	1.159	1.521
PhD Doctorate Institution			1.125	1.186	1.123	1.165	1.127	1.221
PhD Other			1.313	1.308	1.302	1.262	1.294	1.229
PhD Medical/Health			1.055	0.397	1.052	0.379	1.055	0.377
Age			0.996	-0.806	0.996	-0.820	0.996	-0.778
Female			0.949	-0.879	0.944	-0.970	0.943	-0.985
Minority			1.073	0.905	1.071	0.879	1.073	0.920
Married			0.917	-1.228	0.917	-1.235	0.913	-1.286
Number of Children			0.981	-0.270	0.980	-0.281	0.983	-0.237
Citizen			1.008	0.110	1.008	0.114	1.012	0.168
Workplace Training					1.036	0.599	1.038	0.636
Logged Salary					0.969	-0.869	0.968	-0.820
Time x NTT							0.831	-1.622
Time x No Tenure System							0.705	-3.553 **
Private x Two-Year							2.772	2.147 *
Private x Medical							1.161	1.078
Private x Research Institute							1.346	1.745
Concordance	0.656		0.669		0.669		0.672	
Rsquare	0.047 (max possible 0.935)		0.05 (max possible=0.923)		0.05 (max possible=0.923)		0.053 (max possible 0.923)	

* p-value<0.05, ** p-value<0.01

Hypothesis 2 in this study stated that, net of controls, initial appointments off the tenure track would still result in higher risk of career attrition. Once again, I found evidence that the risk of career attrition is higher for non-tenure track faculty. From Model 4 (in Table 10), compared to initial tenure-line appointees, faculty beginning careers off the tenure track at tenure-awarding institutions are 2.7 times (p-value <0.001) more likely to leave their academic careers. The hazard of career attrition is even higher for faculty accepting initial appointments at institutions without a tenure system. Compared to traditional tenure line faculty, faculty beginning at institutions without tenure systems have a 3.8 times (p-value <0.001) greater risk of academic career attrition.

For the third hypothesis, it was reasoned that initial appointments to research positions would result in greater probability of career attrition. Indeed, the regression model (Model 4) provides support for this hypothesis. Faculty who are first appointed to primary research positions are more than 1.5 times (p-value <0.001) as likely to leave their academic careers, compared to those whose principal activity is teaching. Faculty appointed as administrators, as well, are more likely to leave academia (1.6 times more likely). However, faculty with initial appointments to administrative roles are rare and there are probably unique circumstances surrounding such an appointment.

Finally, this study had reason to suspect that traditional institutional characteristics would be unrelated to the risk of career attrition. Robust standard errors were used to handle the dependency among institutional-level predictors. Indeed, this study found little evidence of institutional effects on career attrition (Model 4). This was

true for institutional control, type/level and Carnegie research status.

One interesting finding however relates to the interaction between institutional control (public/private) and institutional type (2-year, 4-year, etc.). This study found that faculty members working in private, 2-year institutions (interaction effect) had a significantly higher risk of career attrition. One argument is that private, two-year colleges may be turbulent places and they create an atmosphere that drives away their faculty members. Another argument may be that these institutions plug in PhDs who are not entirely serious about the profession (i.e., there may be a selection bias). However, these findings may also be the consequence of data limitations. Few faculty members in this study were primarily employed by private, two-year institutions (despite the fact that these kinds of institutions are widespread and growing in the United States). In fact, the test data contain only 20 such faculty members (<1% of the sample). More research is needed to ascertain whether, indeed, private, two-year institutions may be truly linked to higher career turnover.

It is surprising, however, that so few of the other covariates in the model were linked to the timing of attrition. In addition to institutional-level characteristics, demographic features like age, gender, minority status and number of children were found to be statistically insignificant. On the other hand, earlier research has found individual-level, workplace characteristics to be the main drivers of attrition—not demographic features (Cotton and Tuttle 1980). So perhaps this should not be entirely surprising. However, even the job characteristic of workplace training was insignificant in this model, thereby raising concern. Given the data limitations mentioned earlier, the model may be underspecified and this is probably responsible for the low R-square (0.053).

Discussion

Non-tenure track faculty earn less, receive fewer benefits and generally experience inferior working conditions compared to tenure-track peers. They report less satisfaction with many aspects of their work and perceive less institutional support. Given our theory on career change (Rhodes and Doering 1983), it is not surprising that faculty beginning off the tenure track leave their careers at higher rates than tenure-line faculty. However, the specific timing (attrition pattern) has never been examined in a robust way. This work also showed that faculty with initial research appointments are more likely to experience career attrition (than principal teaching appointments). Finally, while structural factors often impact career attrition, this study was unable to produce any evidence of an effect tied to traditional postsecondary institutional categories (i.e., public/private control, type/level, Carnegie research status).

These findings generally fit in with what has been established in this line of research. Earlier work has shown that tenured faculty are less likely to leave their organization or career than tenure-line junior faculty. This study extended our understanding to faculty beginning off the tenure-track as well. More than tenure-track appointments, faculty appointed off the tenure-line are even more likely to leave their academic careers than tenure-line faculty. Presumably, the promise of tenure (tenure-line) is a powerful motivator of career permanence in academia. The rate at which non-tenure track faculty leave is striking. This study also presented survival curves showing the rapid rate of early-career attrition and the fact that attrition never flattens among non-

tenure track laborers. This decline was particularly notable at institutions without tenure systems. By their eighth year, a quarter of non-tenure system faculty members leave their academic careers. Coupled with the slow, continuous decline of tenure systems at most institutions⁶², it is clear that this issue is of growing importance.

The findings with regard to research status and institutional effects generally fit in with earlier work as well. Career attrition is most closely tied to individual factors of the immediate job context (i.e., person-job-fit, work experiences). Whether faculty serve primarily as researchers or teachers probably matters then, to some extent, with regard to career permanence. In earlier work, teaching was reported as one of the most satisfying aspects of adjunct work (Waltman et al. 2012). Meanwhile, research activities have been linked to stress and there is clearly a demand for research experience in the private sector. Thus, the hypothesis of research-related attrition was largely borne out in the results. Research appointees leave academic careers at much higher rates. As career attrition is mostly an individual-level phenomenon, this study did not expect institution-level effects (and it did not find any independent effects). However, postsecondary features more closely linked to work experiences (e.g. academic discipline) may be more closely related to career attrition. It is likely that these organizational features would be related to organizational turnover. Professional features (role orientation and professional commitment) tend to be more closely linked to professional turnover (Blau 2000).

The findings of this study have important implications—and for many actors. From the point of view of administrators, policy-makers and taxpayers, it should be a goal to establish the “right amount⁶³” of attrition in the postsecondary labor force. Attrition should be high enough that “poor-fit” and unproductive workers are reallocated to other areas of the economy but low enough that critical knowledge, structure, and know-how are not lost in the process. This study cannot say whether or not attrition may be too high or too low. But it does provide valuable information that can be used to help answer that question. By year four, 25% of non-tenure track appointments will have left academia (compared to only 7% of tenure-track appointees). That volatility implies costs potentially outweighing the savings associated with faculty off the tenure line. Administrators should reevaluate their hiring and retention strategies to be sure that their activities are rational. Policy-makers should reconsider how postsecondary subsidies are allocated. The more that subsidization is aligned with viable career training, the more efficient public investments will be. Knowledge about academic career turnover helps see that public dollars go to support the careers of young people who will put their advanced training to work.

Finally, while there is an element of risk with any career pursuit, young people should be as informed as possible before deciding to pursue an academic career. This study found that, independent of tenure status, most Ph.D. recipients who begin work in academia end up staying there for lengthy periods. This is particularly the case for tenure-line appointees and for faculty with initial appointments as teachers. However, of

⁶² Figure 3 in the appendix shows that the decline of tenure systems is notable in all but public, four-year colleges.

⁶³ Some turnover is “functional”, removing surplus and unproductive labor (Dalton, Krackhardt, and Porter 1981).

the institutional features tested in this study, none of them were associated with career permanence.

Of the two analytic methods utilized in this study, the findings from the life table model are more robust. This is because this methodology makes no assumptions about the distribution of event times. The hazards model is far more sensitive to the issues common to linear regression. Including mediators like job satisfaction and commitment would have improved estimates, however those variables were not collected at every wave and thus were excluded from the analysis. This problem—omitted variable bias—however is not unique to this study and is ubiquitous to this line of research. Even the most extensive models in this line of research (e.g., Meyer & Allen, 1991; Mobley, Griffeth, Hand & Meglino, 1979) have “neglected or underestimated some important antecedents” of turnover (Maertz and Griffeth 2004). So, the findings of this study must be interpreted in consideration of this inevitable issue.

There are other important limitations worth mentioning as well. This study took as its focus initial appointments and examined the career attrition that followed. Of those who left an academic career, however, certainly some of them returned to academia at some point in the future. Jacobs (1989) for example described the “revolving door” for women in academia. Wolfinger, Mason, and Goulden (2009) described the academic life course as “both complex and permeable.” Mobility between “careers” has received very little research consideration and “boomerang faculty” would be a useful avenue for future work (Lee and Mitchell 1994). Turnover destinations would be another fruitful area of exploration (Hom et al. 2012, Hom et al. 2017). Where do faculty land after they leave academic careers? Are the circumstances of non-tenure track faculty superior in the private sector or in government? More work in this area is merited.

Conclusion

While not without limitations, this study clearly advances the field in important ways. This line of work has typically assumed that turnover intentions are a reasonably good proxy for actual attrition. This study utilized the actual behavioral measure of attrition and confirmed that the processes are generally the same. That is, the causal model to actual turnover helps extend this body of knowledge to the behavioral act of quitting. This study also showed how initial employment off the tenure track, as well as research appointments, are associated with a greater risk of career attrition.

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Appendix

Figure 3: Changes in Tenure Systems (1993-2015)

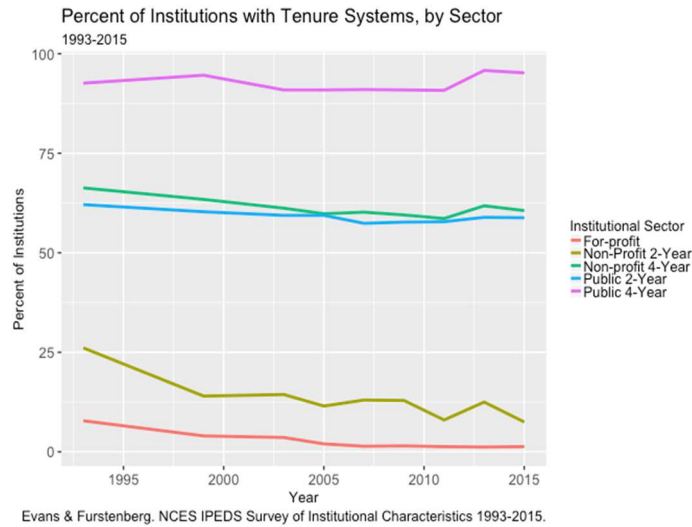


Table 11: Life Table

Wave	Tenure/Track		Non-Ten/Track		No Tenure system	
	Surv. Prob.	Std. Err	Surv. Prob.	Std. Err	Surv. Prob.	Std. Err
1	1.000	0.000	1.000	0.000	1.000	0.000
2	0.969	0.002	0.878	0.006	0.830	0.004
3	0.935	0.004	0.807	0.008	0.731	0.005
4	0.908	0.005	0.752	0.010	0.675	0.006
5	0.889	0.006	0.725	0.011	0.641	0.007
6	0.878	0.006	0.706	0.011	0.617	0.008
7	0.868	0.007	0.689	0.012	0.599	0.008
8	0.862	0.007	0.677	0.013	0.590	0.009
9	0.857	0.008	0.665	0.014	0.582	0.009
10	0.857	0.008	0.660	0.015	0.574	0.010
11	0.857	0.008	0.650	0.017	0.565	0.012

Table 12: Study Entrants by Year

	Year									
	1993	1995	1997	1999	2001	2003	2006	2008	2010	2013
Number of Study Entrants	2428	1967	3340	1850	1936	1764	2309	1826	2099	1917

CHAPTER 5: CONCLUSION

While the numbers of tenure-line and fixed term faculty increase every year, the pace of hiring among the fixed term segment is much higher. As a result, the proportion of faculty working under contingent contracts has been steadily climbing for about half a century now. The best evidence shows that more than two out of three postsecondary faculty members work off the tenure line today (National Center for Education Statistics 2015, Schuster and Finkelstein 2006). Non-tenure track faculty are no longer the ancillary supports or short-term fixes they once were: they are now the professoriate.

Researchers have investigated many themes related to this important change; however, the scope of this dissertation focused on two important topics: classification and the job satisfaction and turnover process of postsecondary adjuncts. In Chapter 2, this study utilized a cluster analysis to extract natural structure in a dataset containing extensive information on non-tenure track faculty. Three distinct clusters of full-time adjuncts emerged from the analysis. Administrative adjuncts—highly integrated in their departments—often worked principally as departmental administrators. Core teaching faculty were also highly integrated, often holding higher rank, earning more and receiving greater opportunities for professional development. Peripheral teaching faculty worked full-time but tended to lack traditional status and ties in their departments.

This study also identified five types of part-time adjunct faculty. Similar to the full-timers, Adjunct Administrators commonly perform administrative tasks. Adjunct Experts often hold full-time careers outside of academia and probably teach in order to share their expertise with young people. There were also three types of aspiring academics. With advanced credentials and a greater focus on academic work, Academic Aspirants often resembled traditional faculty. Journeyman Aspirants commonly worked outside of academia, but nevertheless hoped to acquire a full-time position in academia. Freelancing Aspirants were similar to the Journeymen but typically work less in formal economic channels.

The other important topic of this dissertation related to the job satisfaction and turnover process of postsecondary adjuncts. In Chapter 3, cross-sectional data was used to investigate the job satisfaction and turnover intentions of different subclasses of adjunct faculty. Importantly, by modeling relationships using a structural equation model, this study was able to measure job satisfaction more comprehensively. The analysis showed expert and freelancer part-time adjuncts to be quite similar with regard to job satisfaction and turnover intentions. However, career-enders were somewhat unique with regard to the financial and benefits satisfaction they experience. This study also showed that the main way satisfaction impacts the turnover intentions of these faculty members is through financial satisfaction and “work and supports.” Satisfaction with co-workers and benefits were unrelated to the turnover intentions.

Chapter 4 continued this examination of turnover but extended it to the question of career attrition (instead of institutional turnover). Using a longitudinal dataset and a behavioral measure of career attrition, this chapter provided strong empirical evidence that beginning off the tenure track was linked to higher career attrition. This was true even after controlling for background characteristics. The study also showed that faculty with initial research and administrative appointments were more likely to leave

academia. Traditional ways of describing postsecondary institutions (i.e., public/private control, type/level, Carnegie research status), however, were not shown to have independent effects on faculty career attrition.

Contribution

This dissertation made several important contributions. First, while there existed a line of research on adjunct typologies, there was great redundancy among adjunct classes and an unjustifiable omission of potentially useful information in the creation of adjunct types. This study was the first to leverage information from a high-dimensional dataset and classify utilizing a computational method. The resultant typology that emerged was both innovative and confirmatory. The foundational insights of Gappa and Leslie (1993) and Baldwin and Chronister (2001) were both evident. What the analysis accomplished, however, was to suggest important nuances that had been overlooked in earlier classification systems. It produced evidence for a distinction to be drawn between core and peripheral teaching faculty. It also suggested a nuanced conceptualization of aspiring academics—one that factored in the adjunct's level of engagement in the private sector.

There were also valuable contributions made in relation to job satisfaction and turnover. As noted earlier, traditional tenure-line faculty have been the focus of earlier research. When non-tenure line faculty were included in these analyses, they were typically an afterthought and never disaggregated to the level of this study. The results of Chapter 3 showed that models could be improved by factoring in the unique patterns of career-enders. The structural equation model also permitted a nuanced investigation of how job satisfaction fits into the turnover process. Importantly, this study showed turnover intentions to operate principally through financial satisfaction channels and through “work and supports”—not through benefits or co-worker satisfaction as some would expect.

Finally, only rarely has the timing of academic turnover been a topic of inquiry in faculty research. By extracting information in panel data, this study was able to produce robust, nonparametric estimates of time to career attrition for both tenure-line and fixed-term faculty. Perhaps it is not surprising that adjuncts leave their academic careers at higher rates. However, the timing of this attrition was important to document and is an important point of future deliberation. It is also important to note that this study tested these hypotheses using actual turnover data—not “turnover intentions” as used in most faculty studies.

Practical implications

As argued earlier, a better typology means better science and better policy. Scientists, administrators, policy-makers and others rely on having honed conceptual tools so that their ideas are well-defined and clearly articulated. The most effective policy is one that correctly understands a problem at hand and can target, with great precision, the subjects of the intervention. By honing our understanding of adjunct types, this study has incrementally improved the conceptual tools necessary to do good academic and professional work.

The findings with regard to job satisfaction and turnover also have important practical implications. Most agree that employees have the right to agreeable work conditions whenever possible. However, it is important to stress the fact that creating

agreeable work conditions is also in the interest of most employers as well—certainly postsecondary institutions. Consistent faculty turnover is potentially a very large institutional cost as new teachers need to be hired, oriented, trained and managed. It would be wise, then, for administrators to pursue personnel strategies that minimize these costs. Chapter 4 demonstrated that, by the end of year four, 25% of faculty members with non-tenure track appointments leave their careers in academia (compared to only 7% of tenure-track appointees). This is clearly the kind of volatility that needs to be understood and dealt with by postsecondary administrators and human resource managers.

To curb or limit turnover, institutions should design policies that target faculty financial satisfaction and satisfaction with “work and supports.” There may be many reasons to pursue strategies impacting benefits or co-worker relationships, but not for the purposes of retention. Institutions may have their hands tied with regard to financial satisfaction, but there are probably creative ways to reallocate budgets to incentivize faculty commitment. In Chapter 3, I proposed channeling resources away from benefits (which are not linked to turnover) and towards financial support (which has the greatest impact on turnover). There may also be more cost-effective ways to improve adjunct faculty satisfaction with “work and supports.” Merely providing them with office space or access to office materials may be welcomed and appreciated by these faculty members. In any case, career-enders have unique circumstances and administrators should probably view them as short-term fixes—not long-term faculty contributors.

Future Work

The work of this dissertation has set the stage for a range of projects to further elucidate the work lives of non-tenure track faculty. The typology devised in this study can be fully employed across a range of important adjunct outcomes. How do different kinds of aspiring academics affect student learning? With extensive efforts outside of academia, are Journeyman Aspirants able to dedicate themselves to their classes as well as Academic Aspirants? Do full-time peripheral teaching faculty attrite from their positions at higher rates than core teaching faculty? These are empirical questions with promise of extending our knowledge to new domains.

Future work should also consider more complicated forms of institutional turnover and career attrition. This study simply examined institutional departure (Chapter 3) and career attrition (Chapter 4). However, mobility back and forth (“boomerang faculty”) is an important topic that has received very little research consideration. Research should also begin considering the destinations of adjuncts leaving their positions. How often do they leave for other institutions? For faculty leaving academic careers, do they land in more desirable circumstances? It is certainly a great possibility that their circumstances improve, given how highly skilled these professionals are and how valued their skill-sets are in the broader economy. Understanding where they land is an important component to fully evaluating the costs and benefits of our graduate programs and our system of contingent academic labor.