

The Academic Job Market in Public Affairs:

What Characteristics Are Desired?

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Abstract

This study reports the results of a survey of several hundred public affairs faculty concerning what they look for when evaluating candidates for academic positions. Although fit with program needs is the most important criteria followed by publications, there is a great deal of diversity on what faculty value in job candidates. Faculty from PhD granting institutions place more emphasis on research and publications while those at non-PhD granting programs focus more on department fit and teaching experience. Faculty with greater experience are more likely to emphasize letters of recommendation and the quality of the dissertation.

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PhD students seeking an academic job face a highly uncertain enterprise. The academic market has ebbs and flows with substantial variation in the number of positions open in a given year. The one perceived trend in the market is that the standards for tenure track positions are escalating with programs demanding not just completed PhDs but also publications (see the 2018 NASPAA Panel on Escalating Standards for Job Candidates), yet systematic evidence on the characteristics valued in the academic marketplace is lacking in public affairs. One can find studies of the academic job market in social work (Patti and Rauch 1978), political science (Fuerstman and Lavertu 2005), library science (Reser and Schuneman 1992), basic sciences (Waijjer et al. 2018), sociology (Misra, Kennelly, and Karides 1999), and economics (Carson and Navarro 1988), but none specifically on public administration. Existing work looks at the demand for public affairs PhDs (Rahm et al. 2015) and the standards for keeping a job, that is getting tenure (Coggburn, and Neely 2015), but not on what academic search committees seek in potential future faculty. This study reports on a survey of public affairs faculty asking what they look for when evaluating candidates for open positions. The study seeks to both inform PhD students on how to prepare for the academic job market and raise issues for faculty discussion on the demands of the market. It replicates a previous study in political science (Fuerstman and Lavertu 2005).

Data Collection

Public affairs positions, and their job demands, vary substantially; faculty might teach PhD students, MPAs or MPPs, or undergraduates. They might reside in an independent school

of public affairs, in a public policy program, in a public administration department, or within a political science department, among others. Some work in major research institutions; others are employed by teaching institutions with only modest research requirements. To fully capture this diversity, we opted to sample broadly. All tenure track faculty members listed in the contact directories of programs accredited by The Network of Schools of Public Policy, Affairs, and Administration (NASPAA) were asked to take part in this study. The respondent population was then subset into groups in order to conduct a comparative analysis of hiring priorities in programs with and without doctorate programs and among professors with more and less than 10 years of experience.

This study used the online survey platform Qualtrics. Qualtrics is designed as a customer experience management (CXM) system and offers a web-based tool to conduct survey research. In order to conduct as comprehensive an assessment as possible, the contact information for all tenure track professors in accredited programs was needed. Manually, this represents a laborious task as 2,398 tenure track professors are listed as faculty members with available contact information across 162 accredited programs. Automated web scraping was used to traverse program websites, locate the contact information page for an accredited program, and automatically extract professors' names, contact email, and position titles. Natural language processing was then used to automatically remove any adjunct professors, lecturers, and administrative staff prior to being saved. The underlying technology enabling this process is an open source web automation tool known as Selenium. Although normally used for functional and regression testing of website page structures and internal links, programmatic repurposing of this base capability enables the tool to search for specific text on

a webpage, click links, and extract web objects from the displayed page. For the purposes of this study, the R statistical computing platform and the package RSelenium were used to develop custom code to navigate a manually populated list of accredited program websites, traverse the site for the contact page, and extract all available contact information.

Survey Design and Participation Rate

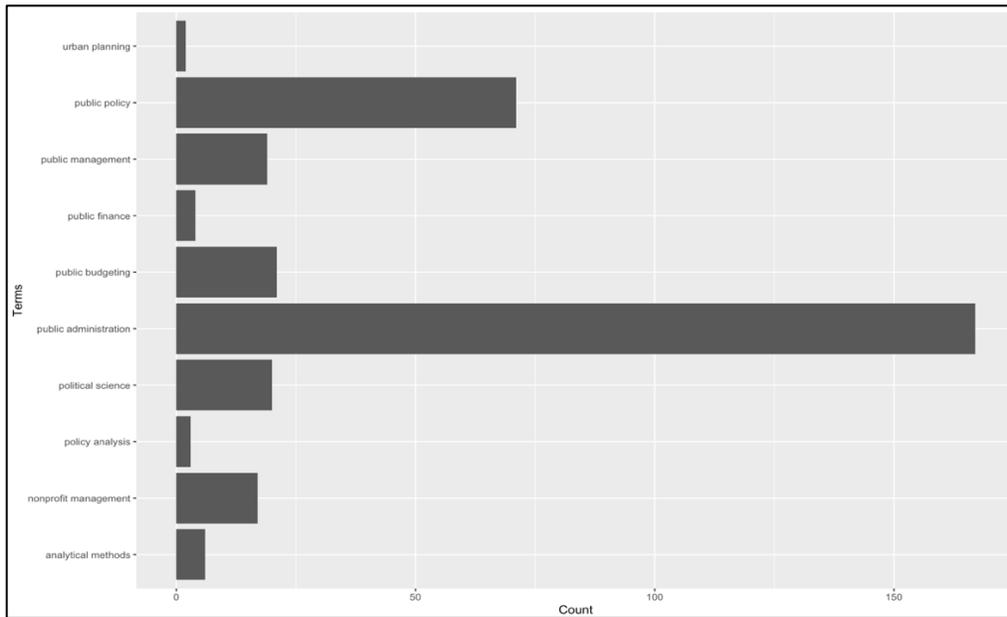
The survey included two multi-part ranking questions, each asking the respondent to rank aspects of a prospective faculty member's academic performance and program fit. Building on the research of Fuerstman and Lavertu (2005), candidate attributes included PhD program reputation, dissertation quality, fit with departmental needs, teaching experience, academic record, letters of recommendation, quality of writing samples, publications, conference presentations and awards. Other questions allow for the grouping of responses in the analysis process and request the respondent to list the degrees offered in their program, the focus of their specific research, and the number of years as faculty in a public affairs focused program.

Of the 2,398 emails collected, emails were successfully distributed to 2,299 faculty members. Over a two-month period, during which time two reminder emails were sent, 523 professors began the survey and 330 completed, a completion rate of 14.3%. We make no claim that the final group is a representative sample, only that it represents the opinions of a large number of public affairs professors who are employed in a diverse set of public affairs programs.

Descriptive Statistics of the Sample

As seen in figure 1, the vast majority of the 330 survey respondents focus their academic research in the fields of public administration (167/50.6%) and public policy (71/21.5%). Other research fields with substantial respondents include public management, public budgeting, political science, and nonprofit management.

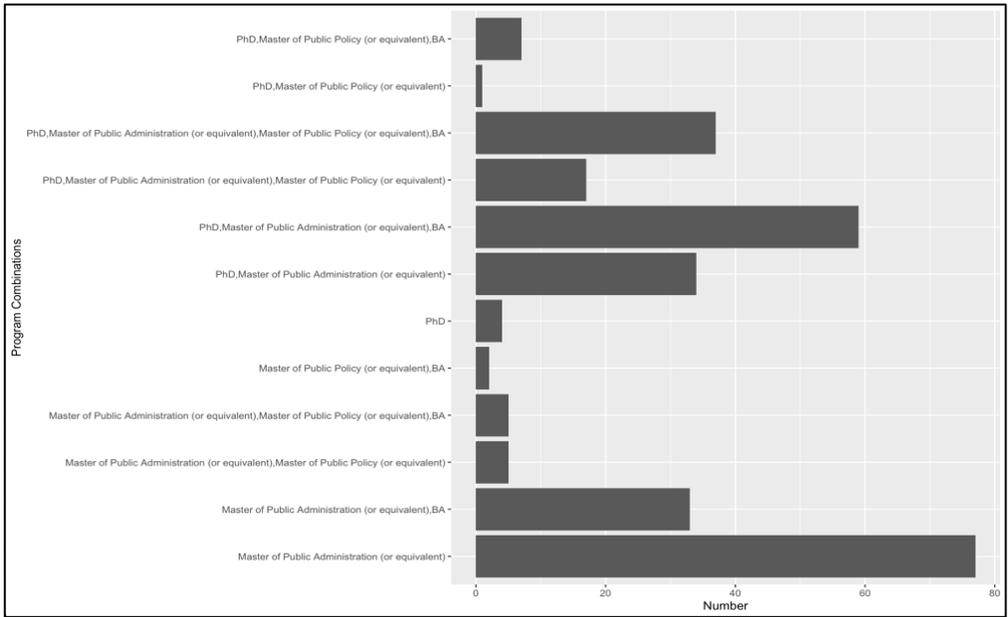
Figure 1: Fields of Respondent Study



Degrees Offered in Respondent Program

Figure 2 shows that respondents in this study come from a mixture of programs that offer Bachelors, Masters, and Doctoral Degrees. The most common program type is a Master of Public Administration (77 respondents) followed by programs offering Bachelors, Masters, and PhD degrees in Public Administration. Only one respondent listed themselves as faculty at a program that with Masters and PhD degrees in Public Policy and 2 listed as faculty in programs offering BA and Masters in Public Policy, suggesting this academic focus may be underrepresented in our respondent sample.

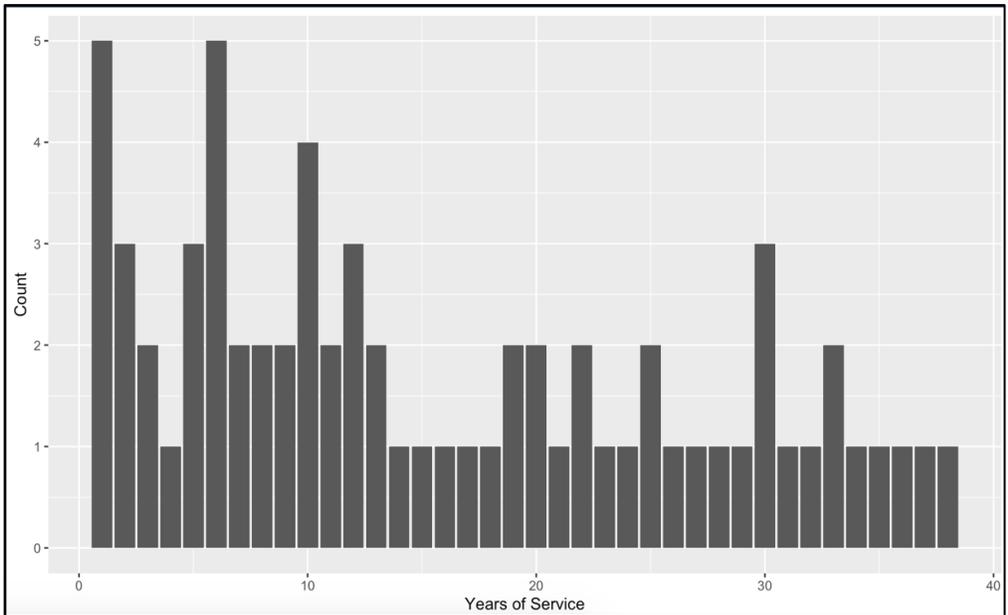
Figure 2: Degree Types in Respondent Programs



Respondent Experience

As seen in figure 3, a relatively broad distribution of experience levels was recorded by survey respondents. 126 respondents (38.2%) had more than 10 years of faculty experience while 204 (61.8%) had less than 10.

Figure 3: Respondent Experience Distribution



What Faculty Seek in a Job Candidate

Respondents were asked to rank order a series of candidate attributes by importance in their department's decision to grant applicant interviews. Respondents were asked to assign each item a unique ranking from 1 (most important) to 10 (least important). The ten criteria are fit with department needs, publications, quality of application, teaching experience, reputation of PhD granting department, recommendation letters, the quality of the dissertation, the candidate's academic record, the candidate's awards, and the candidate's conference presentations. A forced-choice rank-order process was used so that individuals could not rate all aspects as equally important.

Table 1 shows how the respondents rated the various criteria, listing them by the average rank order assigned to the criteria (column 1). Because the rank order can be affected by a small number of individuals who rank a criterion low, the table also shows the percentage of respondents who rank the criteria as the most important. The mean rankings indicate that there is no clear consensus as to the most important qualifications for a job candidate. Although fit with department needs is clearly the highest ranked and 45.9% of faculty ranked it as the most important, fully a quarter of respondents ranked it as unimportant when given the option (see the results of the second question below). Publications appear to be the other key criteria in rank order (and third in most important) reflecting recent changes in the marketplace where new PhDs might have several publications.

The only other consensus is that candidate awards and conference presentations do not appear to be crucial, ranking ninth and tenth overall with no respondent voting for either as the top priority. The remaining characteristics are clustered in the middle suggesting they play a

role in selection but are probably not determinative. Examining the second column with the percentages rated as the top priority, the order of preference shifts somewhat: from top to bottom Department Fit, Application Quality, Publications, Recommendation Letters, Reputation of PhD Department, Academic Record, Teaching Experience, and Dissertation Quality with Awards and Conference Papers rated last.

Table 1. Criteria Used to Evaluate Job Candidates: Forced Rank Order

Criteria	Rank	% Ranked #1
Department Fit	2.42	45.9
Publications	3.06	18.8
Application Quality	4.56	19.2
Teaching Experience	5.26	3.6
Department Reputation	5.44	7.5
Recommendations	5.64	12.5
Dissertation	5.76	2.8
Academic Record	6.33	5.3
Awards	8.15	0
Conference Presentations	8.39	0

The distribution of the responses suggests that while fit and publications are important, a wide variety of other characteristics are valued by some but not others. Since job candidates cannot know in advance how recruitment committees will be comprised and there is a great deal of uncertainty about factors other than fit and publications, what advice can be given job candidates overall? First, department fit can only be adjusted by the candidate at the margins in the short run. Fit with department needs often means the ability to teach a set of courses that are required for degree programs or for accreditation. PhD students pick teaching and research fields relatively early in their careers since credibility as a scholar of budgeting, human resources management, quantitative methods or other fields requires both course work in the

area and a demonstration of related research output.¹ While a job candidate can signal willingness to teach specific courses and job candidates clearly target cover letters and vitas for specific jobs, a search committee is unlikely to interview someone for a budgeting job if a candidate can present no evidence that he or she can teach classes in budgeting.

The relatively modest ranking for the reputation of the PhD granting department merits comment. Unlike many other fields, the public affairs market is not dominated by large PhD programs. PhD programs at highly ranked public affairs schools rarely have more than a few academic job candidates in a single year. The rankings given to fit and publications suggest that a well-qualified candidate from a second tier school is quite likely to get as much or more attention as a poorly qualified candidate from a highly rated institution.

Table 2 presents the percentage ranking the individual criteria as most important (that is, ranked number 1) for those respondents from PhD programs and those from non-PhD programs. A quick look at the table indicates while the two sets of faculty produce generally similar assessments, there are two clear differences. Faculty from PhD granting institutions are far more likely to rank publications as the top criterion (28.0% v. 8.5%) and be far less concerned about the fit of the candidate to the department's needs (35.7% v. 61.2%). These differences likely represent the institutional characteristics of the programs and possibly some selection bias in terms of job applications. First, research standards for tenure are generally perceived as higher in PhD granting programs, and the existence of a publication record

¹ Some PhD students do pick their areas of expertise strategically by paying attention to the relative supply and demand for faculty. Often this is done by adding a high demand area to a traditional specialization. Perhaps one of the first questions advisors should ask new PhD students is "which core MPA/MPP courses will you be gaining the ability to teach?"

provides a signal that a job candidate will be able to build a tenurable record. With lower teaching loads at PhD granting programs, the relative emphasis on research for tenure and promotion is likely to be higher. Second, public affairs programs without PhD programs are likely to be smaller, and many public affairs programs struggle to meet the five full time faculty required by NASPAA standards (<https://accreditation.naspaa.org/standard-2/>). Fit becomes more important with a faculty of five where one faculty vacancy might leave one or more core courses without an instructor than in a program with say fifteen full time faculty where there might be multiple options to cover a core course.

Table 2. PhD Programs Stress Publications More and Fit Less (Percent Ranked #1)

Criteria	PhD Programs	Non-PhD
Department Fit	35.7	61.2*
Publications	28.0	8.5*
Application Quality	12.6	12.4
Teaching Experience	9.9	7.0
Department Reputation	6.6	3.9
Recommendation Letters	4.4	1.6
Dissertation	1.6	5.4
Academic Record	1.1	0.0
Awards	0.0	0.0
Conference Presentations	0.0	0.0

* $P < .05$

What cannot be determined from the data is whether these differences reflect the characteristics of the applicant pool and how it might differ at these two sets of schools. It is possible, for example, PhD students self-select and are less likely to apply to jobs in departments with a PhD program if they lack publications. In such a case, programs can place a priority on publications simply because they get candidates who have publications. It is unlikely that any program would reject a candidate for having publications (or for any other positive

information about any of the criteria), but if few candidates have publications, they are less likely to be a deciding factor in granting an interview.

Table 3 divides the sample by faculty experience comparing the responses of those with ten years or more experience with those with less than ten years. Again the responses are very similar across the groups. Two significant differences appear. More senior faculty give a lower assessment on department fit (39.0% v. 50.2%) and a higher evaluation of teaching experience (12.7% v. 5.8%). What cannot be determined from the data is whether these differences result from the changing of preferences over a career as more senior faculty start down grading department fit and putting more emphasis on teaching experience or some other factors.

Table 3. Comparing Based on Teaching Experience (Percent Ranked #1)

Criteria	Years of Teaching Experience	
	10+ years	0-9 Years
Department Fit	39.0	50.2*
Publications	22.0	19.0
Application Quality	11.9	13.2
Teaching Experience	12.7	5.8*
Department Reputation	5.9	5.3
Recommendation Letters	4.2	2.6
Dissertation	2.5	3.7
Academic Record	1.7	0.0
Awards	0.0	0.0
Conference Presentations	0.0	0.0

* $p < .05$

The forced choice aspect of the rank ordered questions was designed to make respondents distinguish among a variety of desirable characteristics. We also asked respondents to evaluate 22 more detailed characteristics on a five point scale from 1 (most important) to five (least important). The results presented in Table 4 suggest that in terms of the mean rank for each variable that there is very little variation (ranging from 2.35 to 3.26)

with many faculty rating some factors very low while others rate them highly. The second column of table 4 which presents the percentage giving the highest rank appears to provide more variation and will be used to both assess the individual contributions and to show how the responses different among programs and faculty.

Table 4. Importance of Candidate Record: Five Point Scale (1 = most important)

Criteria	Average	% Most Important
Program Fit	2.35	56.9
Publications - Reputability of Publishing Journal	2.42	39.5
Application - Statement of Research Interest	2.45	29.2
Application - Cover Letter	2.52	26.3
Publications - Number of Publications	2.54	30.2
Application - Writing Sample	2.55	24.2
Application - Statement of Teaching Purpose	2.65	19.9
Letter of Recommendation - Advisor	2.67	22.3
Publications - Articles under Review	2.68	15.7
Teaching Experience	2.69	17.4
Letter of Recommendation - Faculty	2.69	20.6
Academic Record - PhD Granted	2.72	17.8
Dissertation - Progress	2.73	18.5
Dissertation - Contributions to Field	2.78	13.9
Publications - Sole Authored Publications	2.85	11.3
Honors and Awards	2.95	10.6
TA Experience	3.00	9.3
Conference Presentations	3.01	7.1
Applicant Department Reputation	3.02	8.5
Teaching Experience - Online	3.06	15.7
Academic Record - Course Selection	3.20	9.6
Academic Record - GPA	3.26	9.3

Table 5 rank orders the criteria with program fit again being the most important criterion in the opinion of the responding faculty (56.9%). The table also permits distinguishing among publication records. The most positive response is given to publications in journals with a high reputation with 39.5% (the actual journals were not defined and likely varied greatly

depending on subfield of the respondent and individual perceptions of the prestige of the journals). Top rankings for research/publications in descending order were given to the number of publications (30.2%), articles under review (15.7%), sole authored publications (11.4%) and conference presentations (7.1% rated last). With the exception of sole authored publications (see below), the logic of the order is difficult to question: publications in good journals > publications > papers under review > conference presentations. The relatively low ranking of sole authored publication is interesting because logically what a job candidate has published on their own is likely a better indicator of potential than publications in a team or with one's dissertation advisor. It may reflect that the question did not distinguish the quality of the journal where solo work was published or it might be the case that sole publication are relatively rare among PhD students.

Table 5. Percent Rating Criteria as Most Important: Ordered

Criteria	Percent
Program Fit	56.9
Publications - Reputability of Publishing Journal	39.5
Publications - Number of Publications	30.2
Application - Statement of Research Interest	29.2
Application - Cover Letter	26.3
Application - Writing Sample	24.1
Letter of Recommendation - Advisor	22.8
Letter of Recommendation - Faculty	20.6
Application - Statement of Teaching Purpose	19.9
Dissertation - Progress	18.5
Academic Record - PhD Granted	17.8
Teaching Experience	17.4
Teaching Experience - Online	15.7
Publications - Articles under Review	15.7
Dissertation - Contributions to Field	13.9
Publications - Sole Authored Publications	11.4
Honors and Awards	10.7
Academic Record - Course Selection	9.6

TA Experience	9.3
Academic Record - GPA	9.3
Applicant Department Reputation	8.5
Conference Presentations	7.1

Table 5 also reinforces that generally teaching experience is not as valued as research outputs. At the same time both teaching experience (17.4%) and on-line teaching experience (15.7%) were highly valued by a significant percentage of faculty, experience as a teaching assistant (9.3%) was less valued. We should note that the survey was completed well before the COVID-19 pandemic and the mass migration to on-line teaching; one might expect that ranking to increase. The evaluation of being a teaching assistant is likely complicated given that such experience might mean as little as grading homework for a class to as much as significant responsibility for teaching a portion of the class. Again, there is no claim that teaching experience is ever viewed as a negative, only that it is not given the appreciation of program fit and publications.

Table 5 also indicates that the quality of the application is perceived as important. Top ratings were given to the statement of research interests (29.2%), the cover letter (26.3%), the writing sample (24.1%), and the statement of teaching purpose (19.9%). These are all among the factors that are under the control of the job candidate and suggest that exercising careful quality control over the materials sent to the placement committee is important.

Two additional aspects of Table 5 merit comment. First, although one might expect that the dissertation advisor's letter might be highly influential, the rating of the advisor's letter of recommendation was only marginally higher than that of letters of recommendation in general. Second, again the low priority placed on the reputation of the applicant's department is

consistent with its low ranking on the forced choice question. We see this as a positive signal, that search committees are interested candidates with strong records regardless of the academic reputation of the degree granting program. This likely reflects a preference for outputs (publication, teaching experience) rather than processes.

Table 6 compares the responses based on whether the faculty were at PhD granting departments or non-PhD departments and reveals several statistically significant differences. Although many of these differences are still rather small, they present set of predictable differences in orientations by the two sets of the programs with the PhD programs emphasizing research and research potential and the other programs stressing teaching and related factors. PhD program faculty placed less emphasis on program fit (52.5% v. 64.5%) and more on publications in reputable journals (42.9% v. 33.9%), the writing sample (28.8% v. 20.2%), the contribution of the dissertation to the field (17.5% v. 9.7%) and on letters of recommendation (25.4% v. 18.5%) including that of the dissertation advisor (29.9% v. 21.0%). NonPhD faculty are more likely to stress teaching experience (29.8% v. 7.3%), the statement of teaching purpose (24.2% v. 13.6%), and TA experience (11.3% v. 5.6%). Other minor differences exist for articles under review, honors and awards, academic courses, and conference presentations, but generally the differences fit expectations with PhD programs focused more on research and less on teaching.

Table 6. Percent Rating Most Important by PhD versus nonPhD Program

Criteria	PhD Program	Non-PhD
Program Fit	52.5	64.5*
Publications - Reputability of Journal	42.9	33.9*
Publications - Number of Publications	31.6	32.3
Application - Statement of Research Interest	27.1	28.2
Letter of Recommendation - Advisor	29.9	21.0*

Application - Cover Letter	26.6	25.8
Application - Writing Sample	28.8	20.2*
Letter of Recommendation - Faculty	25.4	18.5*
Dissertation - Progress	21.5	21.0
Academic Record - PhD Granted	18.1	19.4
Application - Statement of Teaching Purpose	13.6	24.2*
Teaching Experience	7.3	29.8*
Publications - Articles under Review	12.4	19.3*
Dissertation - Contributions to Field	17.5	9.7*
Teaching Experience - Online	13.0	12.9
Publications - Sole Authored Publications	10.7	12.1
Honors and Awards	8.4	12.9*
Academic Record - Course Selection	11.9	6.5*
Applicant Department Reputation	8.5	9.7
Academic Record - GPA	8.5	8.9
TA Experience	5.6	11.3*
Conference Presentations	9.0	4.0*

* $p < .05$

Table 7 indicates that experience in the field matters less than whether the program offers as PhD. More senior faculty put more stress on letters of recommendation particularly by the dissertation advisor (33.3% v. 21.7%) and the contribution of the dissertation to the field (20.0% v. 10.6%). More junior faculty place more emphasis on on-line teaching experience (16.7% v. 7.5%), academic course selection (11.1% v. 7.5%), and the GPA of the candidate (10.6% v. 5.8%). In general, however, seniority does not appear to play a major role in how job candidates are evaluated on these criteria.

Table 7. Percent Rating Most Important by Experience as Professor

Criteria	10+ years	0-9 years
Program Fit	55.0	58.9
Publications - Reputability of Journal	37.5	40.6
Publications - Number of Publications	32.5	31.7
Application - Statement of Research Interest	25.8	28.9
Letter of Recommendation - Advisor	33.3	21.7*
Application - Cover Letter	25.8	26.7
Application - Writing Sample	24.1	26.1

Letter of Recommendation - Faculty	27.5	19.4*
Dissertation - Progress	25.0	18.3*
Academic Record - PhD Granted	19.2	18.3
Application - Statement of Teaching Purpose	15.8	19.4
Teaching Experience	15.8	17.2
Publications - Articles under Review	16.7	14.4
Dissertation - Contributions to Field	20.0	10.6*
Teaching Experience - Online	7.5	16.7*
Publications - Sole Authored Publications	11.7	11.1
Honors and Awards	8.3	11.7
Academic Record - Course Selection	7.5	11.1*
Applicant Department Reputation	8.3	9.4
Academic Record - GPA	5.8	10.6*
TA Experience	6.7	8.9
Conference Presentations	8.3	6.1

* $p < .05$

Discussion

This paper follows Fruerstman and Lavertu's research into the hiring preferences of Department Chairs in Political Science. Mirroring their results, we find that program fit is the most important factor considered in hiring within public affairs programs as well. While no qualification for new hires in public affairs gained an outright majority in rating for most important for all respondents, certain trends are important to note. Program fit was ranked most important by 45.9% of all faculty, by 39% of faculty with more than 10 years' experience and by 35.7% of faculty at PhD granting programs. Meanwhile, 50.2% of those with ten years or less experience and 61.2% at bachelor and master's degree programs ranked fit as most important. Meanwhile, we find that publications, specifically the reputability of the journal in which publications appear, remains important across all subsets of the sample. Finally, conference presentations, while important to development of academic research skills, are not considered critical to the decision to hire.

These findings highlight that virtually every attribute important to academic hiring decisions, other than the reputation of the PhD granting institution, is within the short or long-term control of a PhD candidate. Application quality, that is, the clarity of vita, the cover letter, the research, teaching and diversity statements are all factors where students can seek advice and craft documents that put them in the best possible light. In a competitive job market, nothing moves you to the reject pile faster than a badly presented vita, a poorly written cover letter, or an incoherent research statement.

Other factors on the list will take some time and advanced planning, and some might be given a lower priority. Note for example that while teaching experience is valued (ranked fourth overall), few faculty think of it as the most important priority, and a significant portion of hired faculty did not have college teaching experience (by which we mean full responsibility for a course) before taking a job. Similarly, the quality of the dissertation is not ranked highly (although one might think that it would be related to publications or future publications), giving support to the old adage that “the only good dissertation is a done dissertation.” At the same time, it is unclear how carefully search committees can judge the quality of dissertation since their judgement would be based solely on the candidate’s research statement and whatever information is in letters of recommendation (that are talking about a dissertation that will not be defended for several months).

The ability of the PhD candidates to exert control over attributes relevant to hiring decisions is of particular interest given contemporary events. The COVID-19 pandemic, ongoing as this article is drafted, has resulted in unprecedented unemployment filings and threatens any rapid recovery of a consumer economy. Economic recessions are characterized by drops in

demand for goods and services as well as increased demand for postsecondary education.

During the Great Recession college enrollment increased from 18.2 million to 21 million (Snyder and Dillow 2012). While the effects of COVID-19 on the educational sector and the overall economy are still unknown, employment opportunities for PhD candidates are likely to expand with increased enrollment in post-secondary educational institutions.

References

Carson, Richard, and Peter Navarro. (1988). A seller's (and buyer's) guide to the job market for beginning academic economists. *Journal of Economic Perspectives*, 2(2), 137-148.

Coggburn, Jerrell D. & Stephen R. Neely (2015). Publish or perish? Examining academic tenure standards in public affairs and administration programs. *Journal of Public Affairs Education*, 21(2), 199-214.

Fuerstman, Daniel, and Stephan Lavertu. (2005). The academic hiring process: A survey of department chairs. *PS: Political Science & Politics*, 38(4), 731-736.

Misra, Joya, Ivy Kennelly, and Marina Karides. (1999). Employment chances in the academic job market in sociology: Do race and gender matter? *Sociological Perspectives*, 42(2), 215-247.

Patti, Rino, and Ronald Rauch. (1978). Social work administration graduates in the job market: An analysis of managers' hiring preferences. *Social Service Review*, 52(4), 567-583.

Rahm, Dianne, Vicki Brittain, Christopher Brown, Charles Garofalo, Nandhini Rangarajan, Patricia Shields & Hyun Jung Yun. (2015). Exploring the demand for PhDs in public affairs and administration. *Journal of Public Affairs Education*, 21(1), 115-128

Reser, David W., and Anita P. Schuneman. (1992). The academic library job market: A content analysis comparing public and technical services. *College & Research Libraries*, 53(1), 49-59.

Snyder, Thomas D., and Sally A. Dillow. (2012). *Digest of Education Statistics 2011*. Washington DC: National Center for Education Statistics.

Waaiker, Cathelijn JF, Christine Teelken, Paul F. Wouters, and Inge CM van der Weijden. (2018). Competition in science: Links between publication pressure, grant pressure and the academic job market. *Higher Education Policy* 31(2), 225-243.