

**Quantitative Research in the *Australian Journal of Political Science***

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### **Abstract**

In this paper I examine the frequency, level of quantitative sophistication, author characteristics and institutional background, and number of citations to quantitative articles published in the *Australian Journal of Political Science* between 2006 and 2012.

Multivariate analyses indicate that authors of quantitative articles are more likely to be male than female, as are authors of non-quantitative journals articles. Quantitative research is also more likely to be conducted in collaboration, with senior academics over represented among authors. Article citations are most frequent for full professors and authors based at Group of Eight universities. Men are more likely than women to publish in the journal and to publish quantitatively sophisticated articles. However *quantitative* articles written by women tend to be cited more frequently than those written by men.

## **Introduction**

Bennett et al. (2003) found statistics to be ‘the most common method used’ (2003:377) in a survey of articles published in the top ten American political science, international relations and comparative politics journals. In this paper I consider how frequently articles based upon quantitative research appear in the *Australian Journal of Political Science* (AusJPS). On the face of it, the majority of articles in the AusJPS seem to have been written by men, but to what extent is this also the case for quantitative articles? Previous studies have shown that women tend to favour qualitative research strategies in other social sciences (e.g. Grant et al. 1987). In the UK, for example, ‘[T]he proportions using quantitative methods (by whichever definition) were...only very slightly higher among men’ (Payne et al. 2004: 160). In this paper I consider the extent that gender and other author characteristics are associated with the type of articles published in Australian political science, the importance of academic seniority in relation to the quantity and type of articles published, and the sophistication of quantitative research published in the journal.

While to an extent inspired by Bechhofer’s (1996) account of quantitative research in British sociology, this is to a large extent an inductive study structured around the orienting questions: who publishes in the journal, how often are its articles cited, what proportion of articles are quantitative and how are the characteristics of authors associated with publishing outcomes? The study, based upon analyses of 255 research articles published in the AusJPS between 2006 and 2012 is an attempt to address these questions.

The main research aims are to:

- 1. Gauge the level of quantitative (and survey based) articles in the AusJPS.*
- 2. Assess the level of quantitative sophistication in AusJPS articles.*
- 3. Identify the characteristics and institutional background of journal authors.*
- 4. Determine how author characteristics and institutional locations are associated with citation counts.*

## **Data and Method**

The data analysed here consist of 255 research articles and notes drawn from the Taylor and Francis online database from issue 43(1) published in 2006 to 47(4) in 2012. Commentaries are excluded. Independent variables include article type (i.e. 'quantitative', 'mixed', 'other'), number of authors (1 to 4), the academic level of sole or first authors, the quantitative data source (i.e. Australian, international, combination), whether survey data were analysed (yes/no), the lead author's institutional affiliation, the lead author's sex, the length of the article, the order in which the article appeared and the level of quantitative sophistication.

Quantitative articles containing univariate statistics, bivariate correlations or cross tabulations were deemed to be of 'low' sophistication. In an approach similar to Payne et al. (2004) who distinguished univariate, bivariate and multivariate statistics, articles using multivariate methods such as regression (e.g. OLS, logistic) or exploratory factor analyses were coded as 'medium' sophistication here. However, my approach of including advanced methods (e.g. multilevel modelling; structural equation modelling), is more stringent than Payne et al. (2004), and shows that only 4 such highly sophisticated articles were found in the seven year period in AusJPS.

Several dependent variables are analysed. The first is a dichotomous measure comprising all articles that contain quantitative data (n=102) contrasted with 'other' articles. The second dependent variable contrasts articles containing survey data (n = 40) with 'other' articles.

Continuous dependent variables were also constructed from citations to each AusJPS article from the Scopus and Google Scholar databases. Preliminary analyses suggested that first author gender, academic level, institution (GO8, other Australian, overseas), journal special editions, year of publication, article length (in pages) and a dummy variable to measure quantitative versus other articles would be included as independent variables in the regression models.

### **Research Articles**

As expected, there is a substantial gender divide in terms of the (sole or first) authorship of articles in the *Australian Journal of Political Science*, with around 76% of all articles written by men (Table 1). Most articles were sole authored (57%) or had two authors (34%) with a maximum of four authors in the issues examined. Just over one third were quantitative with only 4% of articles combining quantitative with other research strategies. Whether this constitutes a high or low proportion of quantitative articles depends upon the point of comparison, although based upon Bennett et al.'s (2003), findings, the journal appears to be less quantitatively focussed than, for example, the *American Journal of Political Science* or the *American Political Science Review*.

Only 16% of all articles in the journal draw upon survey data, while the quantitative sophistication measure indicates that 57% of quantitative articles apply only basic statistical methods. Overall, lecturers and full professors are published most frequently. However, as

shown below, this is not the case for quantitative articles. Finally, around 22% of all articles were written by overseas academics, with Group of Eight universities contributing 36% of articles and other universities the remainder.

**Table 1: All Australian Journal of Political Science Articles (%)**

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<i>Ist Author</i>	
Male	75.7
Female	24.3
n	(255)
Number of Authors	
1	56.5
2	33.7
3	8.2
4	1.6
n	(255)
<i>Academic Level</i>	
Level A	3.9
Level B	23.9
Level C	18.0
Level D	16.1
Level E	25.5
Other	2.4
Doctoral Candidate	10.2
n	(255)
<i>Institution</i>	
Group of 8 University/institution	36.1
Other Australian	44.0
Overseas	22.0
n	(255)
Special editions	25.9
Other editions	74.1
n	(255)
Type of Articles	
Quantitative	36.1
Other	60.0
Mixed methods	3.9
n	(255)
Survey data analysed?	
Yes	15.7
No	84.3
n	(255)
<i>Quantitative Sophistication</i>	
High	3.9
Medium	39.2
Low	56.9
n	(102)

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Source: *Australian Journal of Political Science* (2006-2012)

## Institutional Location

Table 2 displays frequencies for all articles by university affiliation. Griffith University tops the list of total publications with 22, followed by the Australian National University (ANU) on 20 and Sydney with 16. Griffith and ANU also head the quantitative and survey article list, each with 10 quantitative and 4 survey articles published respectively, although the University of New South Wales (1) and Flinders (0) are notable for disparities between total numbers of articles and quantitative/survey articles. Alternatively, first authors attached to Macquarie and Monash have relatively high proportions of quantitative to total articles published.

**Table 2: Articles by Lead Author's University (n)**

<i>Institution</i>	All	Quantitative	Survey
Griffith	22	10	4
ANU	20	10	4
Sydney	16	6	2
UNSW	11	1	0
UQ	11	4	1
Adelaide	10	3	0
Melbourne	9	3	2
UWA	8	4	3
UTas	8	3	3
Flinders	7	0	0
Macquarie	7	5	2
Monash	7	4	0
UNE	7	1	0
QUT	5	1	1
Subtotal	(148)	(55)	(22)
Other Australian	51	17	7
Overseas	56	30	11
Total	(255)	(102)	(40)

Source: *Australian Journal of Political Science* (2006-2012)



## **Quantitative and Survey Based Articles**

While Tables 1 and 2 provide an overview of lead author characteristics, the results in Table 3 suggest a somewhat different quantitative and survey article author profile. While 36% of all articles in the journal are quantitative, 46% of the articles published by male lead authors were quantitative, compared to only 23% for females. All articles with four authors are quantitatively focussed, although none of those analysed survey data. Associate professors (51%) are most likely to publish quantitative articles, followed by doctoral candidates (46%), with those based outside academia least likely to publish quantitative or survey based articles. The percentages publishing quantitative articles from Group of Eight universities (38%) are similar to other universities (35%), but authors from overseas (54%) are overrepresented.

Special editions of the journal are potentially important, as, for example, all articles in 47(1) 2012 had a quantitative focus. However, on the whole, special editions are *less* likely to include quantitative articles. There were some variations according to the year of publication, with the highest proportions of quantitative articles in 2012 and 2006 and a low point in 2007. Overall, the lead author profiles for quantitative and survey articles were somewhat similar, although author characteristic variations were less marked for survey articles.

**Table 3: Quantitative and Survey based articles in AusJPS (%)**

	Quantitative	Survey
<i>1st Author</i>		
Male	45.6	18.1
Female	22.6	8.1
Number of Authors		
1	36.1	14.6
2	39.5	16.3
3	57.1	23.8
4	100	-
<i>1st author Academic Level</i>		
Level A	30.0	20.0
Level B	39.3	16.4
Level C	32.6	4.3
Level D	51.2	19.5
Level E	40.0	20.0
Other	16.7	0
Doctoral candidate	46.2	19.2
<i>1<sup>st</sup> author Institution</i>		
Group of 8 University/institution	38.0	13.0
Other Australian	34.6	15.9
Overseas	53.6	19.6
Special editions	28.8	15.2
Other editions	43.9	15.9
2006	50.0	29.4
2007	25.7	8.6
2008	40.5	5.4
2009	35.1	10.8
2010	36.8	5.3
2011	32.4	16.2
2012	59.5	35.1
<i>Sample %</i>	<i>36.1</i>	<i>15.7</i>

Source: *Australian Journal of Political Science* (2006-2012)

## **Multivariate Analyses**

The results from binary logistic regression analyses are presented in Table 4. Statistical tests are shown, although as this is in effect a ‘population study’ of all research articles published in the journal between 2006 and 2012, the results may be interpreted as population parameters.

Even controlling for other independent variables, male lead authors are two and a half times (OR 2.5) more likely than females to publish quantitative articles, compared to other articles. Multiple authors are 50% more likely than sole authors to publish quantitative articles (OR 1.5), with overseas authors more than twice as likely as Australian affiliated authors to publish quantitative articles. Special editions, however, are far less likely to carry such articles (OR 0.4). There is also a positive effect for associate professors compared to other academic levels (OR 1.5). Very similar, although weaker effects are apparent for survey articles compared to other articles, as indicated by the magnitude of the  $R^2$  statistics. Finally, male authors are almost twice as likely as female authors to publish articles of medium or high sophistication rather than low. However, while associate professors are most likely to publish quantitative articles, they tend to publish articles that are not very quantitatively sophisticated. Alternatively, authors based at overseas institutions are highly likely to publish research based upon more sophisticated quantitative methods.

**Table 4: Quantitative and Survey based Articles (Odd Ratios)**

	Quantitative	Survey	Sophistication
<i>1st author Male</i>	2.5**	2.3†	1.9
1st Author Female (referent)	1	1	1
<i>Multiple Author Article</i>	1.5	1.1	1.2
Sole Author Article (referent)	1	1	1
<i>1<sup>st</sup> author Associate Professor</i>	1.5	1.3	0.2*
Other Level	1	1	1
<i>1<sup>st</sup> author University</i>			
Overseas University	2.3*	1.3	3.8**
Australian/NZ (referent)	1	1	1
<i>Special Editions</i>	0.4**	0.9	0.9
Normal Editions (referent)	1	1	1
Year of Publication	1.04	1.1	1.03
Nagelkerke $R^2$	.13	.04	.16
n	(255)	(255)	(102)

Notes: †  $p < .10$ ; \*  $p < .05$  \*\*  $p < .01$ . Dependent variables: Quantitative, 1 = quantitative articles; 0 = other articles. Survey, 1 = survey articles; 0 = other. Quantitative sophistication, 1 = medium/high; 0 = low.

Source: *Australian Journal of Political Science* (2006 - 2012)

## Citations

A key issue in the evaluation of journals, and of course for scholars when selecting an outlet for their research are the citations that journals attract (Butler and McAllister 2009, Lester 1990; Giles, Mizel and Patterson 1989). Citation counts based upon the Scopus database and Google Scholar search engine are considered here.<sup>i</sup> Scopus includes only citations by refereed academic sources, so the counts are much lower than the web-based Google Scholar. Nevertheless, the Pearson's correlation for the two citation variables is very high at .91. The

mean citation count for all articles published in the journal is 5.1 for Google Scholar and 1.8 for Scopus. For quantitative articles, the mean count is somewhat lower (Google 4.6 and Scopus 1.6 respectively) and lower still for survey articles (Google 3.6 and Scopus 1.4).

There are considerable variations in citations according to author characteristics (Table 5). After controlling for other factors, the OLS results show that full professors are cited much more frequently than other authors, 1.6 citations more with Scopus and 4.5 for the Google Scholar dependent variable. The case is similar for quantitative articles. Interestingly, on average female authors of quantitative articles score around 2 citations more than male authors on Google Scholar and 1.4 more as measured by Scopus. Authors from Group of Eight universities are also cited more often than other authors, while publishing in special editions appears to increase citations, particularly for quantitative articles. *Ceteris paribus* quantitative articles tend to cite slightly lower than other articles, while longer articles are cited more frequently.

**Table 5: Citations to *Australian Journal of Political Science* articles (OLS)**

	All Articles		Quantitative Articles	
	Google Scholar	Scopus	Google Scholar	Scopus
<i>Intercept</i>	21.0	7.2	18.3	6.3
<i>1st Author Female</i> 1st Author Female (referent)	0.4	0.5	1.9	1.4*
<i>1<sup>st</sup> author Full Professor</i> Other Level (referent)	4.5***	1.6***	3.2*	1.1*
<i>1<sup>st</sup> author's Group of 8 University</i> Other (referent)	0.9	0.5	1.4	0.1
<i>Special Editions</i> Normal Editions (referent)	0.6	0.1	2.1	0.4
<i>Length of article (pages)</i>	0.14	0.05	-	-
<i>Quantitative article</i> Other (referent)	-0.2	-0.2	-	-
<i>Sophistication Low</i> High/Medium (referent)	-	-	0.9	0.4
<i>Year of Publication</i>	-2.1***	-0.8***	-1.8***	-0.6***
Dependent Mean	5.1	1.8	4.6	1.6
$R^2$	.38	.32	.42	.41
n	(255)	(253)	(100)	(100)

Notes: \*\*\*  $p < .001$ . Dependent variables: Citations to AusJPS articles in Google Scholar and Scopus.

Source: *Australian Journal of Political Science* (2006 - 2012)

The 10 most highly cited authors based upon a variable constructed to measure Scopus citations (adjusted for the time elapsed since each article was published) are presented in Table 6.<sup>ii</sup> Brian Head leads the citation table with a score of 3.8 and 20 Scopus cites for his article ‘Community Engagement: Participation on Whose Terms?’ published in 2007, with ‘John Howard’s ‘Values’ and Australian Identity’ by Carol Johnson second. The proportion of Scopus citations to international journals in the final column also indicates that with one exception, at least 40% of the citations to these articles appeared in international journals. Two of these articles, by Grant et al. (2010) and Harris and Wyn (2009) were quantitative articles although neither utilised highly sophisticated data analytic methods.

**Table 6: Ten most cited articles in the *Australian Journal of Political Science* adjusted for year of publication**

					Score	Scopus cites	Internat. cites	Prop'n
	<i>Year</i>	<i>Is.</i>	<i>Authors</i>	<i>Author</i>				
1	2007	3	Head, B.	<i>Community Engagement: Participation on Whose Terms?</i>	3.8	20	17	0.80
2	2007	2	Johnson, C.	<i>John Howard's 'Values' and Australian Identity</i>	3.3	18	8	0.44
3	2010	3	Kane, J., Patapan, H.	<i>The Artless Art: Leadership and the Limits of Democratic Rhetoric</i>	3.1	7	3	0.43
4	2010	2	Macnamarra, J.	<i>The Quadrivium of Online Public Consultation...</i>	2.8	7	2	0.29
5	2009	4	Marsh, D.	<i>Keeping Ideas in their Place: In Praise of Thin Constructivism</i>	2.7	8	8	1.00
6	2007	2	Parkin, A., Anderson, G.	<i>The Howard Government, Regulatory Federalism and the Transformation ...</i>	2.6	14	3	0.21
7	2008	1	Vromen, A.	<i>Building virtual spaces: Young people, participation and the Internet</i>	2.5	12	10	0.83
8	2010	4	Grant, W. <i>et al.</i>	<i>Digital Dialogue? Australian Politicians' use of the Social Network Tool...</i>	2.5	5	5	1.00
9	2009	2	Harris, A., Wyn, J.	<i>Young People's Politics and the Micro-Territories of the Local</i>	2.3	8	4	0.50
10	2010	4	Grube, D.	<i>The Rhetorical Framing of Policy Intervention</i>	2.0	4	2	0.50

Source: *Australian Journal of Political Science* (2006-2012)



## Concluding Comments

Among other things, this study is an attempt to measure the scope and impact of quantitative political science research in Australia, to examine the characteristics of those who publish in the *Australian Journal of Political Science*, and publish quantitative political science research in particular. Proportionately, authors from overseas universities tend to publish more quantitative pieces than Australian based academics. This is similar to the predominance of overseas authors publishing quantitative research in British sociology (Payne et al. 2004). In terms of articles by institution, Griffith University affiliated authors outperform all Group of Eight universities with the most articles in the journal. ANU and Sydney are also highly represented, but UNSW far less so, particularly in terms of articles with a quantitative focus.

The lead authors of quantitative and survey based articles are much more likely to be male than female, mirroring the gender profile of authors in the journal overall, while quantitative research is more likely to occur in collaborative teams. The evidence also suggests that senior academics are over represented as first and sole authors of quantitative articles.

A limitation of this research is that by focussing upon only one journal, quantitative researchers who mainly or also target international or other Australian journals are underrepresented. The characteristics of the authors of quantitative articles published in AusJPS may therefore, not necessarily be representative of Australian quantitative political researchers more broadly. Further research is necessary to establish if this is the case.

While the focus here is upon *quantitative* articles in the AusJPS, the impression gained is that a relatively low level of *qualitative* research is occurring in Australian political science, somewhat similar to the situation noted by Bennett et al. (2003:377) in the United States, who

found an 'almost total absence of qualitative articles on American Politics in APSR...representative of the decline in such work in other top journals'. Again, further research is needed to determine whether qualitative political science in Australia has declined or tends to be historically low in this journal. Nevertheless, AusJPS articles appear to be both less quantitative and less quantitatively sophisticated in terms of methods than those that appear in the APSR or AJPS when these results are compared to Bennett et al.'s (2003) study.

Citations to AusJPS articles from Scopus and Google Scholar suggest that articles published by full professors are cited more frequently than those by other authors, as are authors from Group of Eight universities. Yet while men are more likely than women to publish in the *Australian Journal of Political Science* and also more likely than women to publish articles that are quantitatively sophisticated, *quantitative* articles that are written by women tend to be cited more frequently than those authored by men. Once again, this finding is deserving of elaboration through further research.

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<sup>i</sup> I am grateful to Ian McAllister for suggesting I examine citations in this study. Data on citations were collected in December, 2012.

<sup>ii</sup> To adjust for time since publication Scopus citations were divided by a variable coded as follows: 2012 = 0, 2011 = 1...to 2006 = 6. Issues: 1 = 0.75, 2 = 0.50, 3 = 0.25, 4 = 0. So for example, Issue 2, 2007 was scored 5.5. 'Prop'n' is the proportion of all citations appearing in international journals.