



ANDREW YOUNG SCHOOL  
OF POLICY STUDIES

**Graduate Education and Federal Career Success:**

**How Well Does the MPA Stack Up?**

Gregory B. Lewis

Georgia State University

[glewis@gsu.edu](mailto:glewis@gsu.edu)

(404) 651-4443

and

Seong Soo Oh

Georgia State University and Georgia Institute of Technology

We presented an earlier version of this paper at the National Association of Schools of Public Affairs and Administration annual conference, October 2005, Washington, DC. We are grateful to the Andrew Young School of Policy Studies for funding purchase of these data and to the U.S. Office of Personnel Management for providing them.

## **Biographical Statements**

Gregory B. Lewis is professor of public administration and urban studies at Georgia State University and director of the joint Ph.D. program in public policy of Georgia State and the Georgia Institute of Technology. His research focuses on the effects of race, sex, sexual orientation, and other personal and organizational characteristics on the careers of public employees and on public opinion on gay rights.

Seong Soo Oh earned his MPA degree from Seoul National University and is currently a doctoral student in the joint Georgia State University and Georgia Institute of Technology public policy program. His research interests are public management and public finance.

**Graduate Education and Federal Career Success:  
How Well Does the MPA Stack Up?**

**Abstract**

Using a one percent sample of federal personnel records for 1983 through 2003, we compare the career success of employees with master's degrees in public administration to those of employees with bachelor's degrees or graduate degrees in other fields – especially law, business administration, and the social sciences, the degrees most likely to compete for our students. Federal employees with master's degrees in any field tend to be one grade higher and to earn 13 to 16% more than comparable employees with bachelor's degrees. Although federal employees with law degrees earn substantially more than other graduate degree-holders, MPAs have salaries, grades, and supervisory authority comparable to those of MBAs and those with master's degrees in the social sciences.

## **Graduate Education and Federal Career Success: How Well Does the MPA Stack Up?**

Do master of public administration programs offer practical as well as intellectual rewards? Can we tell prospective students that MPA degrees will not only help them understand how government works, but help them get interesting, rewarding jobs that allow them to put their skills to use? This paper examines the practical value of the MPA degree in the largest single employer of MPAs, the federal civil service. Using a 1% sample of federal personnel records for 1983-2003, we compare the salaries, hierarchical status, and supervisory authority of graduate degree-holders in public administration, law, business administration, the social sciences, and other fields to those with bachelor's degrees. We first examine trends in the number of federal employees with graduate degrees and their distribution by field. We then compare mean salaries and grade levels and the percentage with supervisory authority across fields of graduate study. Next, we examine characteristics of MPAs that might be impeding their career success. Finally, we assess the impact of the MPA degree on salaries, grades, and supervisory status after controlling for those individual differences

### **Background**

The field of public administration cyclically loses confidence in itself, perhaps tied to enrollment declines in MPA programs. Vincent Ostrom's *The Intellectual Crisis of American Public Administration* (1974) inspired a symposium on "the crisis in public administration education" (Adams, 1982) and an update on the "intellectual crisis in public administration in the current epoch of privatization," in which Haque (1996) warned that the new public management and the global privatization movement might devastate demand for public administration

education by undercutting the credibility of public administration as both practice and academic discipline. With a rising ideology of the market and a focus on customer service and efficiency, he argued, business education appeared more valuable even to those who intended to go into the public service, echoing concerns expressed earlier by McCurdy (1978), Golembiewski (1979), and Thai (1982).

Though MPA enrollments rebounded in the aftermath of 9/11 and a faltering economy, lingering doubts about the value of the MPA degree remain. Addressing those doubts is difficult. Surveys of alumni (e.g., Ashmore, Lynch, & Threldkeld, 1981; Grode & Holzer, 1975) or those who hire them (e.g., Thompson, 1978) generally find that both groups are satisfied with our programs. These surveys typically examine graduates of a single program rather than a random sample of alumni of all MPA programs, however. The only evidence they provide that our graduates are doing better than they would have if they had not pursued a master's degree, or had pursued one in a different field, is respondents' own perceptions, which are potentially inflated by their stake in believing that their educational investment paid off. Further, response rates tend to be low, which may increase that inflation.

A stronger research design surveys both bachelor's and master's degree-holders, typically from a single university or in a single field of study, then regresses earnings on a variety of characteristics that influence earnings (e.g., gender, race, age, experience, and perhaps college major, college grades, SAT scores, and hours worked). Controlling for most of these variables, various scholars have estimated that a master's degree boosts expected salary 14 to 36 percent (Barkley, Stock, & Sylvius, 1999; Carlan, 1999; Tsui, 1998). Using the best data set (the 1993 National Survey of College Graduate (NSCG) conducted by the National Science Foundation) but almost no controls (age in broad categories), Hecker (1998) found that a master's degree

boosted median annual earnings by 12.8 and 18.7 percent for women and men, respectively, averaging across 150 majors or subfields and 125 occupations in a sample of 215,000. Using similar methods, several economists have determined that college graduates who majored in engineering, computer science, business, mathematics, and maybe science consistently have higher mean salaries than those majored in education, the humanities, agricultural and natural resources, communications, and the social sciences, except economics (Berger, 1988; Brown & Corcoran, 1997; Daymont & Andrisani, 1984; Gilbreath & Powers, 2006).

General population surveys include far too few MPAs to draw conclusions on the value of the degree, however. To increase his sample, Lewis (1987) applied a similar approach to a 1% sample of the federal, white-collar civil service, which probably has the highest concentration of MPAs of any large workforce. Though not a random sample of MPAs, much less of graduate degree-holders generally, it represents a large market for public administration education, and the one with the most accessible data. After controlling for differences in education, experience, race, and sex, Lewis (1987) found that MPAs earned as much as MBAs and those with graduate degrees in most other fields in 1982.

### **Data**

We update Lewis (1987), using a 1% random sample of full-time, college-educated, white-collar federal employees taken from the Central Personnel Data File (CPDF) at five-year intervals from 1983 to 2003 (U.S. Office of Personnel Management, 2004). The U.S. Office of Personnel Management (OPM) maintains the CPDF as the federal government's personnel records and draws 1% random samples annually for study purposes. To focus on employees most similar to our graduates and potential students, we restrict the sample to those with at least

a bachelor's degree. For those with graduate degrees, we identify whether their highest degree is have a master's degree, a professional degree, or a doctorate. For much of the analysis, we categorize the fields of study for graduate degree-holders into five groups: (1) public administration, (2) business administration, (3) law, (4) social science, and (5) other fields. For simplicity, we sometimes refer to those with graduate degrees in public administration, business administration, law, and the social sciences as MPAs, MBAs, lawyers and social scientists, respectively, although a few "MPAs" and "MBAs" actually hold doctorates and some "lawyers" and "social scientists" hold jobs unrelated to their fields of study.

### **Basic Patterns**

**The Number of MPAs.** Educational levels are rising in the federal service. The percentage of civil servants with graduate degrees rose by half over the last two decades, from 9.8% in 1983 to 14.9% in 2003 (Table 1). Although MPA programs are holding our own in this market, business schools are doing far better. In our sample, the percentage of graduate degree-holders who had studied public administration increased from 3.6% to 4.3%, but the change is not statistically significant. Likewise, the percentage with law degrees is unchanged. The rise in the percentage in business administration (from 11.9% to 16.8%) is highly significant, however. MBAs outnumbered MPAs over 3 to 1 in 1983 and nearly 4 to 1 by 2003.

Nearly one-third of federal employees with master's degrees earn them after entering federal service. Together business and public administration accounted for half the master's degrees earned in the federal service. Indeed, half of the MBAs and 44% of MPAs earned their degrees while already federal employees. The MPA is still losing to the MBA in attracting federal employees interested in earning a master's degree, however; in-service MBAs outnumbered in-service MPAs 3.5 to 1.

**The Relative Status of MPAs.** Employees with graduate degrees do substantially better than other college graduates in the federal service (Table 2). In 2003, they earned an average salary of \$81,000, 20% more than those with just a bachelor's degree, and had a mean grade of 12.7, 1.3 grades higher than that of college graduates. Over one-quarter of them were supervisors or managers, compared to less than one-fifth of college graduates.

MPAs fare as well as other graduate degree-holders, except lawyers. In 2003, federal employees with law degrees earned 19% more and were 1.2 grades higher than the average graduate degree-holder, but were somewhat less likely to hold supervisory authority. Otherwise, mean salaries, mean grades, and percentages in supervisory positions did not vary much across the other fields of study.

**Individual Characteristics.** MPAs differ from other graduate degree-holders in several ways that might be pulling down mean salaries and grades (Table 3). In 2003, 42% of federal MPAs were women and 29% were minorities, somewhat higher than the percentages for graduate degree-holders generally (35% and 21%, respectively). MPAs were also somewhat younger than other graduate degree-holders, though they had more years of federal service, suggesting that MPAs chose federal careers earlier. (MBAs had the most federal experience.) Graduate degree-holders in both public and business administration almost universally had master's degrees, whereas three-quarters of lawyers had professional degrees and one-fifth of graduate degrees in social science and the residual category were doctorates. MPAs and MBAs were also twice as likely as others to have earned their degrees after entering federal service and had earned their degrees more recently than others, even though they had been in the federal service longer.

Almost all MPAs and three-fifths of MBAs and social scientists held administrative positions, whereas three-quarters or more of lawyers and graduate degree-holders in the residual fields of study held professional positions. On average, professional positions pay better and have higher average grades, though they are less likely to have supervisory authority than administrative positions. Three-quarters of MPAs worked for domestic agencies, whereas nearly half of MBAs worked for the Department of Defense, an interesting change since 1983, when two-thirds of both groups worked for DoD. As domestic agencies tend to pay better than DoD (Lewis, 1997), MPAs have probably gotten the better deal, but this suggests that business schools largely control a potential market for expanding our programs.

### **Isolating the Impact of the MPA Degree**

**Method.** We regress salary, grade, and supervisory authority on fields of study, controlling for level of education, federal service, age, race, and sex. Because we use the natural logarithm of salary, the regression coefficients roughly represent proportional rather than dollar differences in salaries. To make their meaning clear, we exponentiated them, subtracted 1, and multiplied times 100, converting the regression coefficient to an expected percentage difference in salary. We use logit analysis on supervisory status, a dummy variable coded 1 for those whose position is classified as supervisory or managerial.

We measure education with three dummy variables for level -- coded 1 for those with master's, professional, and doctoral degrees, respectively -- and four field of study dummy variables for graduate-degree holders only -- coded 1 for those with graduate degrees in public administration, business administration, law, and the social sciences. Because the sample is restricted to college graduates, the reference group for the first group of dummy variables is

employees with bachelor's degrees, and the reference group for the second group of dummy variables is graduate degree-holders in fields other than public or business administration, law, or the social sciences. Thus, in the salary regression, the coefficient on **Master's Degree** is the percentage difference in expected salary between those with master's degrees in the residual category and comparable employees with bachelor's degrees. The coefficient on **Public Administration** is the percentage difference in expected salary between those with graduate degrees in public administration and comparable employees with the same graduate degree in the residual field of study. To determine whether there was a penalty for earning a graduate degree after entering federal service, we added a dummy variable coded 1 for graduate degrees earned while already a federal employee, plus an interval-level measure of the number of years since the degree was earned.

Race and gender were added as a set of nine dummy variables. Each coefficient shows the expected difference between that group and white males with the same level of education, federal experience, and age. Federal experience and age (which serves as a proxy for pre-federal work experience) are entered in both years and years-squared, to capture the tendency for salaries and grades to rise faster earlier in one's career. Although we ran models for all five years, we report only the 2003 results; key findings do not vary across years.

**Findings.** In Table 4, the **Master's Degree** coefficient in the **Salary** model shows that federal employees with master's degrees in the residual fields (not public or business administration, law, or the social sciences) tended to earn 14% more than comparable employees with bachelor's degrees. A professional degree or doctorate in the residual fields raised expected salaries by 34% to 37% relative to college graduates. Lawyers earned another 14% more than other professional degree-holders (about 48% more than college graduates).

Otherwise, field of study made little difference. The **Public Administration**, **Business Administration**, and **Social Science** coefficients are all positive (giving slight evidence of a pay advantage relative to the residual category), but small and statistically insignificant. Whether one pursued graduate work in public administration, business administration, the social sciences, or the residual category mattered little – all tended to earn 15 to 17% more than comparable employees with bachelor's degrees.

Graduate degrees earned after entering federal service have less impact on salaries than pre-service degrees. Expected salary rises an additional 0.2% for each year one has had one's degree, and in-service degrees appear to raise expected salaries by about 5 percentage points less than pre-service degrees held the same length of time. For instance, the model suggests that in 2003 a new pre-service master's degree raised expected salary by 13.8% relative to a comparable employee with only a bachelor's degree, whereas a new in-service master's degree raised it only 9.1% (13.8 – 4.7). A pre-service degree probably pays off in the grade at which a new hire enters federal service and has a cumulative impact over time. Employees who earn their degrees in-service may not see a payoff as rapidly, because appropriate promotion opportunities may not be available immediately. They may also focus less on their jobs during the period they are taking classes and may not be promoted as rapidly while they are in school as equally talented employees who are not in graduate programs. Nonetheless, the return on an in-service master's degree is still substantial, and employees are still earning their salaries while in school.

Patterns for grade level are very similar. A master's degree boosts expected grade by 1.1 relative to a college graduate, a professional degree or doctorate boosts it by 2.0 to 2.3 grades, and a law degree raises it by an additional 0.9 grade. Again, the **Public Administration**, **Business Administration**, and **Social Science** coefficients are positive but statistically

insignificant. An in-service degree did not raise expected grade as much as a pre-service degree, but the number of years one had held the degree did not seem to matter.

Patterns are slightly different for supervisory status, which appears to be largely a function of experience and age rather than education, which influences supervisory status primarily through elevating employees into higher-grade positions. Comparing employees in the same grades, graduate degree-holders were significantly less likely than college graduates to be supervisors. This was especially true for those with doctorates or law degrees, though that disadvantage disappears if grade level is dropped from the model. Oddly, social scientists were more likely than other graduate degree-holders at the same grade level to have supervisory authority.

**Master's Degree-holders Only.** In Table 5, we restricted our sample to employees with master's degrees and divided field of study much more finely. We distinguished MBAs with accounting or finance specializations from other MBAs, and economists, political scientists, and sociologists from other social scientists, in each case expecting that the former would be doing better than the latter. And we divided the residual category of majors into twenty majors, leaving only those in interdisciplinary studies, theology, philosophy, and social work in the reference group.

MPAs were earning about 11% more and were .8 grade higher than comparable employees in this reference group. Master's degree-holders in five fields (economics, computer science, communications, engineering, and political science) had higher expected salaries, but only the economics, computer science, and engineering differences were statistically significant. A master's degree in engineering also had a significantly higher payoff than an MPA in 1988, 1993, and 1998; and the computer science degree had a significantly higher payoff in 1988 and

1998; but the payoff to an economics major is significant only in 2003 (and at the .10 level in 1998). Generalist MBAs had virtually the same expected salaries and grades as MPAs in all five years, with accountants and finance experts never faring significantly better than generalist MBAs. Thus, the only fields where a master's degree appears to yield higher salaries (computer science and engineering) are not obvious competitors with public administration. In all years, the coefficient on either **Degree Earned While in Federal Service** or **Years Since Graduate Degree Earned** is statistically significant (the former positive and the latter negative), indicating that the advantage to a master's degree grows over time.

### **Conclusion**

MPAs are doing well in the federal service. Federal employees with master's degrees earn 14% more and are a full grade higher in the federal hierarchy than comparable employees with bachelor's degrees. The field of study of the master's degree makes little difference. Although master's degrees in computer science, engineering, and mathematics appear to have higher payoffs, MPAs are doing as well as MBAs (including accountants and finance experts) and social scientists (with the possible exceptions of economists and political scientists). The skills MPA programs teach and the credential they provide are as valuable in the federal service as our natural competitors. Because we cannot identify the schools at which employees earned their degrees, we cannot say whether particular curricula or programs advance federal careers more. The similarity of earnings, grades, and supervisory authority across master's degrees in administration and the social sciences, however, suggests that curricular changes at the margins will have little impact on the value of an MPA degree in the public service.

The MPA degree has as much to offer current and future federal employees as any of our near-competitors. Though an MBA or an MA in economics may be more portable, allowing

employees greater access to private sector jobs, we found no evidence that employees with MBAs or master's degrees in economics were any more likely to leave their federal jobs than those with MPAs (in separate, unreported analyses). Federal employees tend to be in their federal careers for the long haul; the value of competitive degrees outside the public service should not impact educational decisions of current or future federal employees. Master's degrees earned in-service appear to raise salaries nearly as much as pre-service degrees that have been held as long, but the salary boost appears to rise substantially with the length of time one has had the degree, indicating that now is the time to begin a master's program for anyone planning to earn a degree. Federal employees who can earn an MPA degree part-time in three or four years can expect to earn about 15% more per year for the remainder of their careers.

The decline in enrollments that MPA programs experienced in the 1990s disappeared after September 11 and the downturn in the economy. The impending wave of federal retirements suggests the demand for MPA programs will increase as the federal labor market opens up. Half the federal employees with MPAs and MBAs earned their degrees in-service, suggesting a strong desire for continuing education among employees climbing the federal administrative ladder. Nearly four times as many chose to pursue MBAs rather than MPAs, however, with the discrepancy particularly strong in the Defense Department, even though MPAs and MBAs had nearly identical earnings in DoD. MPA programs are not capturing our natural markets. We need to harness the evidence of our graduates' success and develop new marketing strategies for both in-service and pre-service students.

## References

- Adams, G. B. (1982). The Crisis in Public Administration Education: A Symposium. *Southern Review of Public Administration*, 6(2), 131-136.
- Ashmore, T., Lynch, S., & Threldkeld, S. (1981). P.A. Programs in the Southeast: AN Alumni and Student Perspective. *Southern Review of Public Administration*, 5(2), 211-229.
- Barkley, A. P., Stock, W. A., & Sylvius, C. K. (1999). Agricultural Graduate Earnings: The Impacts of College, Career, and Gender. *American Journal of Agricultural Economics*, 81(4), 785-800.
- Berger, M. C. (1988). Predicted Future Earnings and Choice of College Major. *Industrial and Labor Relations Review*, 41(3), 418-429.
- Brown, C., & Corcoran, M. (1997). Sex-Based Differences in School Content and the Male-Female Wage Gap. *Journal of Labor Economics*, 15(3), 431-465.
- Carlan, P. E. (1999). Occupational Outcomes of Criminal Justice Graduates: Is the Master's Degree a Wise Investment?\*. *Journal of Criminal Justice Education*, 10(1), 39-55.
- Daymont, T. N., & Andrisani, P. J. (1984). Job Preferences, College Major, and the Gender Gap in Earnings. *The Journal of Human Resources*, 19(3), 408-428.
- Gilbreath, K., & Powers, S. (2006). Starting Salaries of College Graduates. *Journal of Legal Economics*, 13(2), 79-95.
- Golembiewski, R. T. (1979). The Near-Future of Graduate Public Administration Programs in the U.S.: Some Program Minima, Their Common Violation, and Some Priority Palliatives. *Southern Review of Public Administration*, 3(3), 323-359.
- Grode, G., & Holzer, M. (1975). The Perceived Utility of MPA Degrees. *Public Administration Review*, 35(4), 403-412.
- Haque, M. S. (1996). The Intellectual Crisis in Public Administration in the Current Epoch of Privatization. *Administration & Society*, 27(4), 510-536.
- Hecker, D. E. (1998). Earnings of College Graduates: Women Compared with Men. *Monthly Labor Review*, 121(3), 62-71.
- Lewis, G. B. (1987). How Much is an MPA Worth? Public Administration and Federal Career Success. *International Journal of Public Administration*, 9(4), 397-416.

- Lewis, G. B. (1997). Guns, Butter, and Federal Careers: Growth, Decline, and Personnel in Defense and Domestic Agencies. *Journal of Public Administration Research and Theory*, 7(1), 59-84.
- McCurdy, H. E. (1978). Selecting and Training Public Managers: Business Skills versus Public Administration. *Public Administration Review*, 38(6), 571-578.
- Ostrom, V. (1974). *The Intellectual Crisis in American Public Administration*. Tuscaloosa: University of Alabama Press.
- Thai, K. V. (1982). Teaching Public Budgeting and Financial Management: A Symposium. *Southern Review of Public Administration*, 6(3), 263-271.
- Thompson, F. J. (1978). Is University Training "Practical"? Perspectives of Public Personnel Officials. *Public Administration Review*, 38(1), 82-84.
- Tsui, L. (1998). The Effects of Gender, Education, and Personal Skills Self-Confidence on Income in Business Management. *Sex Roles*, 38(5), 363-373.
- U.S. Office of Personnel Management. (2004). *One Percent Sample of Central Personnel Data File*. Washington, D.C.: U.S. Office of Personnel Management.

**Table 1. Distribution of Graduate Degrees by Field, 1983-2003**

	<b>1983</b>	<b>1988</b>	<b>1993</b>	<b>1998</b>	<b>2003</b>
Public Administration	3.6	4.5	4.3	3.8	4.3
Business Administration	11.9	14.3	14.8	16.0	16.8
Law	11.9	11.4	11.6	12.8	11.5
Social Science	8.8	7.3	7.8	8.4	8.6
Other	63.8	62.6	61.4	59.0	58.8
Total	100.0	100.0	100.0	100.0	100.0
N =	1,267	1,520	1,731	1,659	1,691
Percent of white-collar employees	9.8	11.1	12.3	14.3	14.9

**Table 2. Career Success of Graduate Degree Holders by Major (2003)**

	<b>Mean Salary</b>	<b>Mean Grade</b>	<b>Supervisory Authority (%)</b>
Public Administration	78,417	12.6	26.4
Business Administration	79,272	12.6	31.0
Law	96,293	13.9	23.1
Social Science	79,716	12.7	33.6
Other	79,069	12.5	23.5
Graduate Degree	81,047	12.7	25.7
Bachelor's Degree	67,124	11.3	18.8

**Table 3. Mean Characteristics of Graduate Degree Holders by Major, 2003**

	<b>Public Admin.</b>	<b>Business Admin.</b>	<b>Law</b>	<b>Social Science</b>	<b>Other</b>	<b>Total</b>
Male (%)	58.3	66.6	66.7	69.2	65.0	65.5
White (%)	70.8	77.8	80.5	79.5	79.7	79.1
Federal service (mean years)	17.5	18.5	14.9	15.2	15.6	16.1
Age (mean years)	46.0	49.6	46.3	46.5	49.5	48.8
Degrees earned in-service (%)	52.8	52.1	12.8	19.3	20.5	26.3
Years since degree (mean)	14.8	16.1	17.3	17.2	18.6	17.8
Professional degree (%)	0.0	1.4	75.9	2.7	6.0	12.8
Doctorate (%)	1.4	0.0	6.2	18.5	20.1	14.2
Administrative occupation (%)	86.1	61.6	18.5	62.3	22.2	34.6
Professional occupation (%)	12.5	34.5	80.5	36.3	74.5	62.5
Domestic agencies (%)	73.6	51.8	88.2	83.6	75.9	73.8
Sample size	72	284	195	145	979	1675

**Table 4. Impact of Graduate Degree and Field of Study,  
College Graduates Only, 2003**

	<b>Salary (Percentage Difference)</b>	<b>Grade Level</b>	<b>Supervisory Authority</b>
Master's Degree	13.8** (6.83)	1.129** (8.11)	-0.431 (1.94)
Professional Degree	34.2** (9.26)	2.037** (8.72)	-0.327 (0.99)
Doctorate	37.2** (13.29)	2.282** (13.05)	-0.996** (3.73)
Degree Earned While in Federal Service	-4.7** (2.85)	-0.360** (2.89)	0.338* (2.08)
Years Since Graduate Degree Earned	0.2* (2.04)	-0.001 (0.10)	0.013 (1.56)
Public Administration	3.3 (0.96)	0.270 (1.10)	-0.017 (0.05)
Business Administration	1.2 (0.63)	0.131 (0.93)	0.105 (0.59)
Law	13.7** (4.52)	0.861** (4.12)	-0.927** (3.30)
Social Science	2.4 (0.99)	0.243 (1.38)	0.516* (2.31)
Years of Federal Service	2.9** (17.58)	0.169** (14.19)	0.054** (2.79)
Years of Federal Service Squared	-0.03** (7.03)	-0.002** (6.13)	-0.001 (1.73)
Age	2.2** (6.54)	0.182** (7.39)	0.160** (3.40)
Age Squared	-0.03** (7.26)	-0.002** (8.45)	-0.001** (3.11)
Asian Male	3.4 (1.53)	0.088 (0.56)	-0.340 (1.41)
Black Male	-2.7 (1.49)	-0.111 (0.84)	-0.093 (0.50)
Hispanic Male	-3.8 (1.69)	-0.330 (1.96)	0.219 (0.93)
Native American Male	-16.1** (3.34)	-1.233** (3.17)	0.541 (0.98)

Asian female	-6.5** (2.64)	-0.511** (2.78)	-0.756* (2.19)
Black female	-12.4** (8.61)	-0.892** (7.87)	-0.567** (2.95)
Hispanic female	-10.9** (4.05)	-0.834** (3.96)	0.093 (0.27)
Native American female	-17.2** (3.51)	-1.485** (3.74)	0.607 (0.89)
White female	-8.4** (9.36)	-0.563** (8.13)	-0.012 (0.12)
Grade Level			0.667** (20.05)
Constant		6.064** (11.65)	-14.441** (12.49)
Observations	4909	4957	4957
Adjusted R <sup>2</sup>	0.40	0.30	
Adjusted Count R <sup>2</sup>			.18

t- or z-statistics in parentheses; \* p<.05, \*\* p<.01

**Table 5. Grades and Salaries of Master's Degree Holders, 2003**

	<b>Salary (Percentage Difference)</b>	<b>Grade Level</b>
Public Administration	11.1* (2.23)	0.797* (2.45)
Accounting or Finance	-2.4 (0.43)	-0.009 (0.02)
Other Business Administration	10.6* (2.52)	0.746** (2.70)
Economics	34.9** (3.45)	1.844** (3.06)
Political Science	19.0** (2.62)	1.356** (2.95)
Sociology	5.4 (0.69)	0.376 (0.72)
Other Social Science	4.7 (0.98)	0.465 (1.44)
Agriculture and Natural Resources	-3.9 (0.80)	0.071 (0.21)
Architecture and Environmental Design	6.4 (0.85)	0.402 (0.80)
Area Studies	17.6 (1.70)	1.222 (1.85)
Biological Sciences	-1.4 (0.29)	0.016 (0.05)
Communications	21.0* (2.09)	1.546* (2.45)
Computer and Information Science	30.2** (4.35)	1.665** (3.97)
Education	-5.7 (1.27)	-0.337 (1.05)
Engineering	20.6** (4.45)	1.112** (3.82)
Fine and Applied Arts	-1.2 (0.11)	-0.588 (0.78)
Foreign Languages	-7.1 (0.73)	-0.106 (0.15)
Health Professions	4.4 (0.98)	0.430 (1.41)
Home Economics	-5.4 (0.51)	-0.041 (0.05)
Letters	4.5 (0.70)	0.535 (1.24)

Library Science	-9.5 (1.56)	-0.735 (1.66)
Mathematics	19.1** (2.78)	1.324** (3.05)
Military Science	20.2 (1.21)	1.496 (1.42)
Physical Sciences	7.1 (1.34)	0.440 (1.25)
Psychology	-3.0 (0.53)	-0.010 (0.02)
Degree Earned While in Federal Service	-0.8 (0.34)	-0.017 (0.10)
Years Since Graduate Degree Earned	0.6** (4.15)	0.031** (2.86)
Years of Federal Service	2.0** (6.45)	0.093** (4.41)
Years of Federal Service Squared	-0.02* (2.33)	-0.001 (1.54)
Age	3.8** (5.53)	0.261** (5.67)
Age Squared	-0.04** (6.13)	-0.003** (6.35)
Asian Male	1.2 (0.26)	0.191 (0.61)
Black Male	-1.2 (0.33)	0.050 (0.20)
Hispanic Male	-1.7 (0.36)	-0.074 (0.23)
Native American Male	-8.4 (1.02)	-0.424 (0.71)
Asian Female	-2.9 (0.63)	-0.317 (0.98)
Black Female	-7.9* (2.55)	-0.511* (2.30)
Hispanic Female	-5.1 (0.83)	-0.367 (0.85)
Native American Female	-32.4* (2.12)	-2.497* (2.02)
White Female	-4.4* (2.38)	-0.305* (2.36)

Observations

1187

1190

Adjusted R<sup>2</sup>

0.39

0.27

Standard errors in parentheses; \* p<.05, \*\* p<.01