



TEXAS A&M UNIVERSITY
The Bush School
of Government & Public Service

Employer Skills & Curriculum Orientation Report

Abbey Smith
Carly Elliott
Jake Bronson
Tori Chandler
Ryleigh Rains
Carling Repass
Addison Walker
Renee Zwahl
"We Got the Skillz"

Under the direction of Dr.
Joanna N. Lahey, Associate
Professor Department of
Public Service and
Administration of
Texas A&M University

Thank you to Matt Vinson
for research assistance

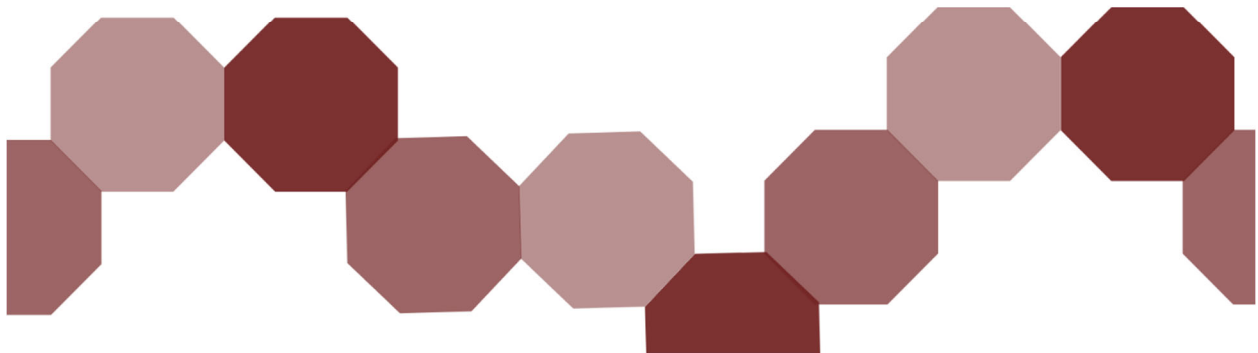


Table of Contents

Executive Summary	2
Introduction	2
Methodology	2
Results & Analysis	4
Discussion	52
Conclusion	57
References	58
Appendices	59

Executive Summary

The purpose of this report is to provide recommendations for potential Bush School curriculum changes based on the skills most requested by industry employers. The following report provides evidence of compliance with the Network of Schools of Public Policy, Affairs, and Administration (NASPAA). Data were compiled and analyzed to answer the following question: “What knowledge, skills, and competencies do people graduating with a Master’s in Public Service and Administration (MPSA/MPA) need in order to be competitive applicants when applying for careers in public service?” Job advertisements within the public policy, non-profit, and public management industries were collected and analyzed in alignment with the curriculum offerings in the Master of Public Service and Administration Program at the Bush School.

Introduction

This report, requested by the Head of the Public Service and Administration (PSAA) department, Dr. Lori Taylor, serves to inform the Bush School Curriculum Committee on the skills and competencies requested and required in job advertisements relevant to Bush School graduates of the Master of Public Service and Administration program. It highlights what employers want and expect from graduates of graduate level public administration programs. The job advertisements included in the analysis are those that would be sought after by Bush School graduates on any of the three tracks, including Public Policy Analysis, Public Management, and Nonprofit Management. This report has two purposes; the first is to provide an analysis of skills requested by relevant employers to drive future curriculum decisions. The second is to provide assurance to the faculty that the current Bush School curriculum is meeting the high standards set forth by NASPAA. This report outlines the hard and soft skills included in 235 job advertisements, with an analysis by track. Based upon findings, it also provides recommendations and suggestions for future curriculum offerings. See Appendix A for the charge memo foundational to this research.

Methodology

Problems & Solutions

After identifying the question for the client and creating a draft process to answer the question, the research team came up with a list of initial concerns:

- Categorizing the data
- Creating a clear system for coding
- What to do when the same skill is described differently
- Double job postings on different websites
- Aligning team members on how to interpret the variables when coding

To address these concerns, the team created specific criteria to define each variable, tracked each job advertisement in a shared folder, and reviewed common coding mistakes to clarify various interpretations, making adjustments accordingly.

Job Sites & Keywords

Job sites and keywords were chosen after consulting with second-year MPSA students currently applying for jobs. These sites and keywords served as the foundation for job searches to help ensure equal representation of each track. To find jobs that correlated to the Nonprofit Track,

the research team searched niche websites in addition to the sites used for the other tracks. Each team member searched a different job site to mitigate overlap.

Job Sites

Public Policy & Public Management Tracks

- Indeed
- Idealist
- USAjobs
- ICMA
- Glassdoor
- Symplicity

Nonprofit Management Track

- Association of Fundraising Professionals
- Chronicle of Philanthropy
- National Association of Independent Schools
- Higher Education Research Consortium
- American Alliance of Museums
- National Council of Nonprofits
- American Society for Association Executives
- Philanthropy News Digest Jobs
- Philanthropy Southwest
- Council on Foundations Career Center

Job Keywords

Below is a list of sample keywords used throughout the project to find relevant job ads for each track.

Sample of Keywords:

Public Policy & Public Management Tracks:

- Analyst
- Public Affairs
- Legislative
- Budget
- Program Manager

Nonprofit Management Track:

- Coordinator
- Social Impact
- Volunteer
- Donor
- Community

Creating Variables

After individually surveying various job advertisements, the research team began to create a framework for naming and coding variables. An initial variable list was compiled and used as a basis for each individual team member to use in independently coding 25 job advertisements, 10 of which were identical. Reconvening after coding the 25 job advertisements, the team was able to determine what modifications needed to be made to the initial variable list. Furthermore, it provided the opportunity to compare and contrast each person's thought process for coding the variables and refine the variable list to best answer the client's question. After solidifying the necessary variables, the final variable list was created. The team re-coded the 15 shared job advertisements using the new variable list included in our final sample.

Process

Each team member collected data on 30 different job advertisements from assigned job sites to create a sample reflective of jobs available for students graduating with a Master in Public Service and Administration degree.

Steps for collecting data:

1. Search for a job advertisement that:
 - a. Includes a keyword identical or similar to a keyword on the shared list
 - b. Comes from the individual's assigned job site
 - c. Primarily require 0-3 years of experience, if possible
 - d. Requires a bachelor's at a minimum
2. Fill out a google form indicating:
 - a. Job title and number
 - b. Job track (can be multiple)
 - c. Skills required in the job advertisement (using checkboxes or 0,1)
 - d. Additional notes/comments
3. Include number, title, link, and photo of job ad
 - a. Add pdf of job description to database
 - b. Ensure no doubles
4. Analyze data
 - a. Create charts that demonstrate frequency
 - b. Analyze for each track
5. Compile information and analysis in a report

Results & Analysis

The research team utilized a detailed and uniform process to ensure quality information could be gleaned from the data collected. For all variables, we only coded the skill as present if it was explicitly mentioned in the job advertisement. We did not make assumptions. For example, a

city manager would likely need finance skills, but if the job advertisement did not explicitly say it required finance skills, it was coded as not required.

To categorize soft skills, we used a three-pronged categorical approach. Succi & Canovi (2020) published a framework of categorization for soft skills including three categories: methodological, social, and personal. The research team used this framework to code soft skills from the job advertisements. Each job advertisement varied in what soft skills it required, with some requiring none, and others requiring elements from all three categories. The exact specifications of the skills can be seen in Appendix A.

For analysis of the data, the team created different types of graphs, such as pie charts and histograms, to show the courses, hard skills, and soft skills employers are looking for and provide comparison between them. Listed below is each variable coded during the data collection process, such as track, course, hard skills, soft skills, and all other basic competencies, with additional comparative information on frequency within each track.

Skillz Group Job Advertisement Coding Survey

Table 1

n=235	Frequency
<u>Track</u>	
NPM	104
PM	73
PPA	108
<u>Years of Experience</u>	
0	65
1 to 3	125
4 to 6	45
6+	4
<u>Degree</u>	
Degree Unspecified	37
Bachelor	149
Master	64
PhD	1
<u>Soft Skills</u>	
Methodological	202
Social	174
Personal	130
Unspecified	16

Software Skills

Unspecified	131
Microsoft Suite (exc. Excel)	76
Excel	44
Other	37
CRM	19
R	9
Stata	8
SPSS	4
SAS	3
Python	3
C++	1
Tableau	1

Language

No Language	214
Spanish	14
Other	5
French	3
Arabic	1
Russian	1
Chinese	0
Hindi	0
Japanese	0

Course/Certification Requirement

Econ	4
Finance	2
Quant	2
Program Eval	0
Project Mgmt Cert	0

Specialty WritingSkills

None	153
Data/Analytical Report	51
Policy Brief	36
Other	33

Policy Memo	20
White Paper	4
Infographic	5

Specialty Knowledge

None	55
Policy Knowledge	73
Other	70
Government Process	59
Nonprofit	24
Advocacy	18
Defense	14
Health	13
Environment	7
Cybersecurity	7
Homeland	6
Technology	4
Immigration	3
Lobbying	3
Energy	2
INGOs	1

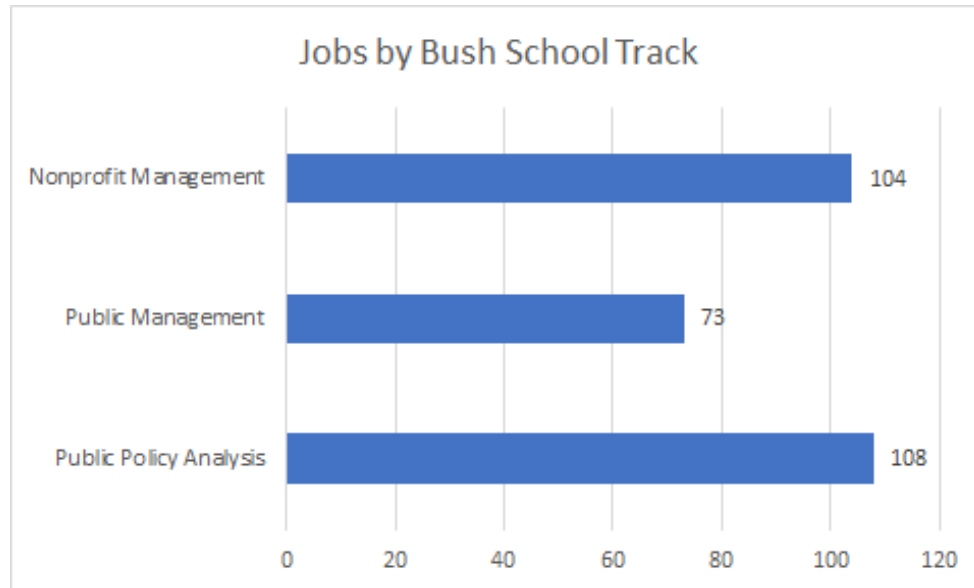
Miscellaneous Skills/Requirements

Advanced Written Skills	178
External Relations	153
Research Skills	147
Management	138
Internal Relations	132
Data Skills	118
Presentation Skills	90
Finance Skills	82
Grant Skills	62
Organizational Strategy	54
Program Eval	49
Fundraising	47
Social Media	36
Security Clearance	33
Contract Skills	13

Bush School Track

Three binary variables represented each of the three tracks at the Bush School. The research team coded 108 job advertisements for the Public Policy Analysis track, 104 job advertisements for the Nonprofit Management track, and 73 job advertisements for the Public Management track. In total, 235 job advertisements were coded, with some advertisements coded for more than one applicable track. Below, Figure 1 shows the frequency of jobs coded for each track. For a full list of tracks and track information, see Appendix B.

Figure 1



Years of Experience

The variable for years of experience is a categorical variable that represents years of experience required in job advertisements within four (4) ranges: No experience, minimum experience (1-3 years), moderate experience (4-6 years), and advanced experience (6+ years).

Figure 2 gives a comparison of experience level found in the sample. Of 235 job advertisements, 65 (27.7%) job advertisements required no work experience, 125 (53.2%) job advertisements required minimal experience (1-3 years), 41 (17.5%) job advertisements required moderate experience (4-6 years), and 4 (1.7%) job advertisements required advanced experience (6+ years).

Broken down by track, the following percentages represent how many job advertisements required minimal experience (1-3 years): 60.6% Nonprofit Management (Figure 3), 49.3% Public Management (Figure 4), 45.4% Public Policy Analysis (Figure 5).

As a team, the goal was to identify jobs requiring no experience or minimal experience to best capture the perceived experience level of graduating Bush School students. This gives a possible explanation for the high number of jobs requiring only 1-3 years of experience.

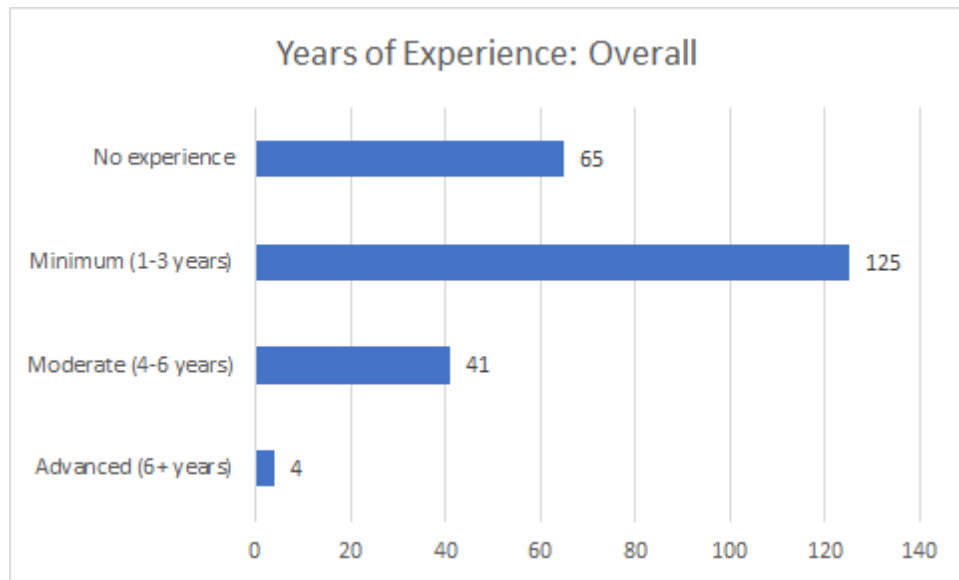
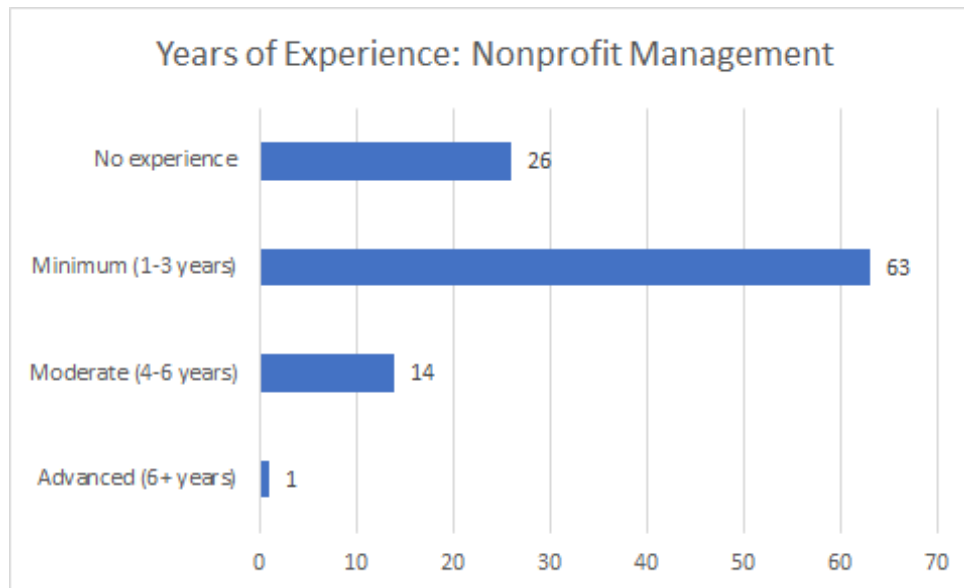
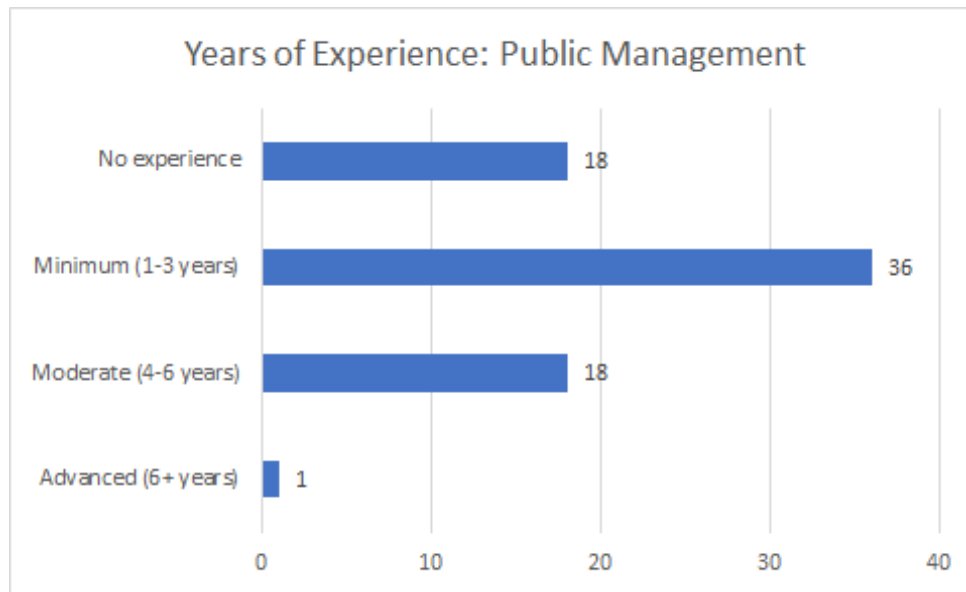
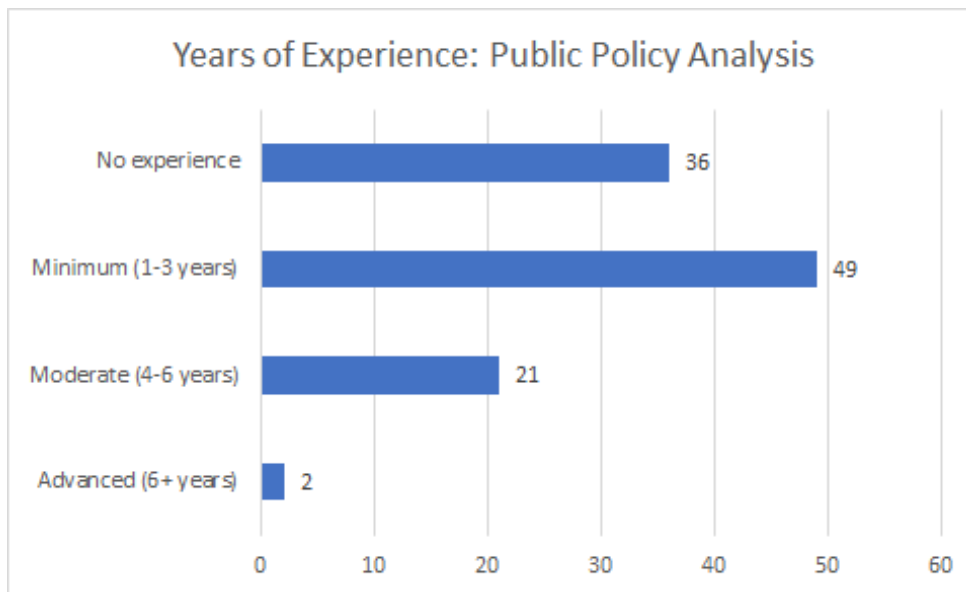
Figure 2**Figure 3**

Figure 4**Figure 5**

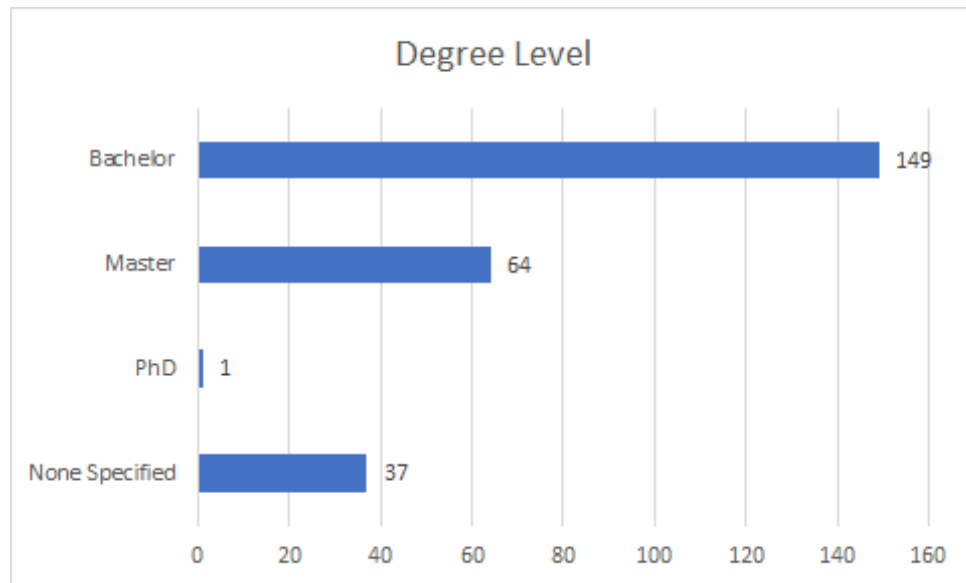
Degree Level

The various degree levels specified in job advertisements were individually coded as binary variables. If a job advertisement stated “bachelor’s degree required, master’s preferred”, both master and bachelor were selected. Job advertisements that did not specify what level of education was required were coded as “none specified.” Many federal government job advertisements do not specify a level of education on the advertisement, they simply specify the General Schedule (GS) grading scale. Thus, the degree level for these job advertisements was often coded as “none specified.” 37 (15.7%) jobs did not specify what level of education was required, 64 (27.2%) jobs mentioned a master's degree and 149 (63.4%) jobs mentioned a bachelor’s degree. 1 job advertisement mentioned but didn’t require a PhD.

Job advertisements that mentioned a master's degree, separated by Bush School track: 19.2% (20 out of 104) Nonprofit Management, 27.4% (20 out of 73) Public Management, and 35.2% (38 out of 108) Public Policy Analysis.

Figure 6 gives a comparison of the degree level acceptable to employers. 1 job advertisement mentioned that either a PhD with no experience or a master's degree with 1 year of experience was acceptable.

Figure 6



Soft Skills:

The research team coded the presence and absence of three different categories of soft skills including: methodological skills, personal skills, and social skills. These came from a soft skills framework developed by Succi & Canovi (2020). Examples of personal skills included in the framework are commitment to work, life balance skills, learning skills, and creativity/innovation skills. Examples of social skills included in the framework are communication skills, conflict management and negotiation skills, and leadership skills. Examples of methodological skills included in the framework are analysis skills, continuous improvement skills, decision making skills, and management skills. Table 1 in Appendix E shows the soft skills framework used for categorization.

Figure 7 shows the frequency of soft skills in all job advertisements in the sample, with social skills requested in 174 (74.0%) job advertisements, methodological skills requested in 202 (86.0%) job advertisements, and personal skills requested in 130 (55.3%) job advertisements. 16 (6.8%) job advertisements did not specify soft skills.

Figure 8 shows the frequency of soft skills requested in job advertisements for the Nonprofit Management track. 86 (82.7%) job advertisements requested social skills, 84 (80.8%) job advertisements requested methodological skills, 68 (65.4%) job advertisements requested personal skills, and 6 (5.8%) job advertisements did not specify soft skills.

Figure 9 shows the frequency of soft skills requested in job advertisements for the Public Management Track. 50 (68.5%) job advertisements requested social skills, 60 (82.2%) job advertisements requested methodological skills, 31 (42.5%) job advertisements requested personal skills, and 10 (13.7%) job advertisements did not specify soft skills.

Figure 10 shows the frequency of soft skills requested in job advertisements for the Public Policy Analysis Track. 70 (64.8%) job advertisements requested social skills, 102 (94.4%) job advertisements requested methodological skills, 60 (55.6%) job advertisements requested personal skills, and 4 (3.7%) job advertisements did not specify soft skills.

Figure 7

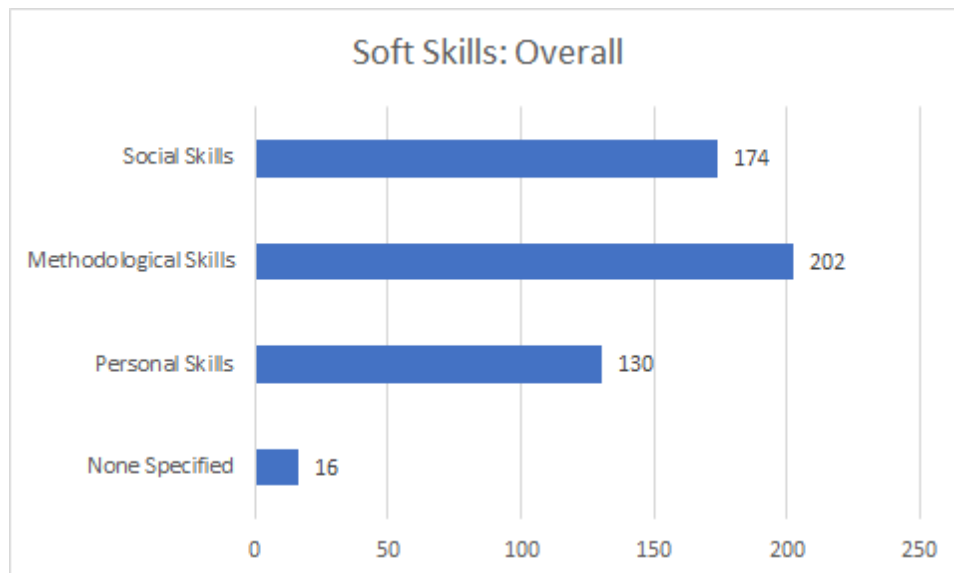


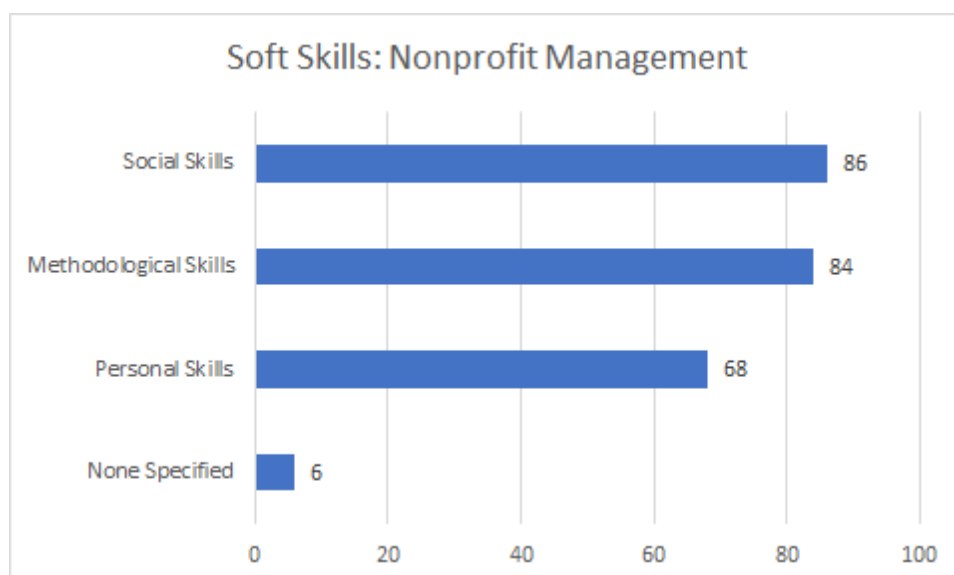
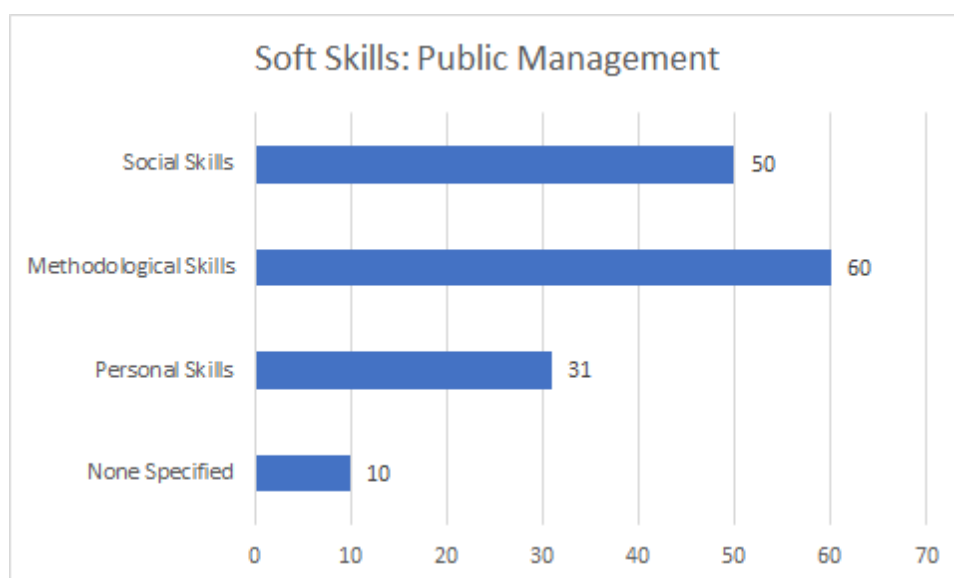
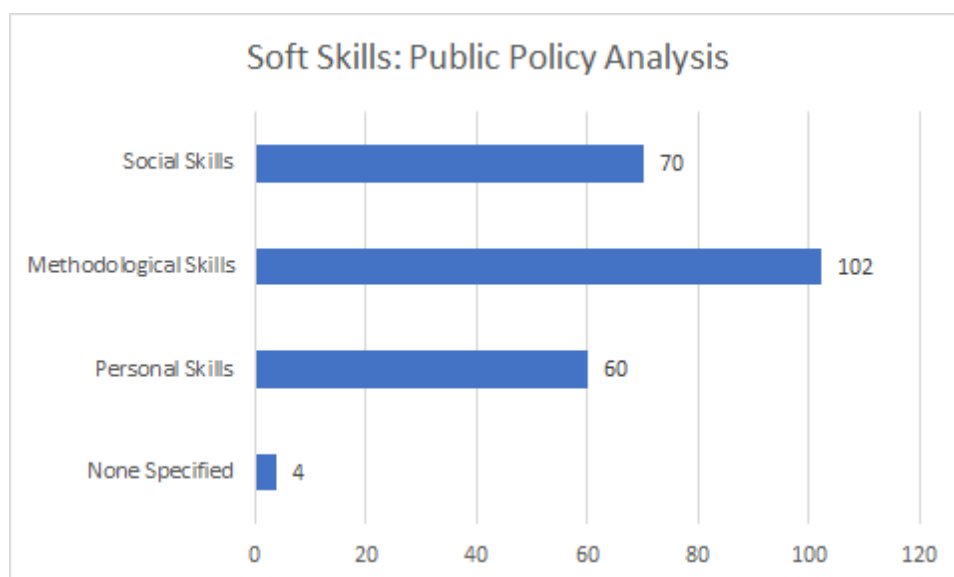
Figure 8**Figure 9**

Figure 10

Competency of Software Skills

The research team coded what software skills were mentioned in job advertisements. The results are broken into two parts; Figure 11 shows the overall frequency of software skills in all 235 job advertisements and Figures 12-14 show the frequency of software skills by track. Microsoft Excel is its own category apart from the Microsoft Office Suite. 131 out of 235 jobs (55.7%) did not specify software skills in the job advertisement. 76 (32.3%) job advertisements requested skills in Microsoft Suite, excluding Excel, and 44 jobs (18.7%) specifically requested skills in Microsoft Excel. 9 jobs requested skills in R, 8 jobs requested skills in Stata, and 3 jobs requested skills in Python.

The “other” software programs include chart/diagram software (2), donor software (2), design software (2), government cloud software (2), expense/admin software (2), Adobe (2), relational database management software (2), grant management software (2), email marketing platform (1), event registration platform (1), media monitoring software (1), fleet management software (1), HTML coding (1), CAD (1), nonprofit management software (1), WordPress (1), information technology (1), talent/recruiting software (1), cloud compliance tracking software (1), and Google Suite (1). Appendix F provides a table of the “other” software skills.

Figure 11

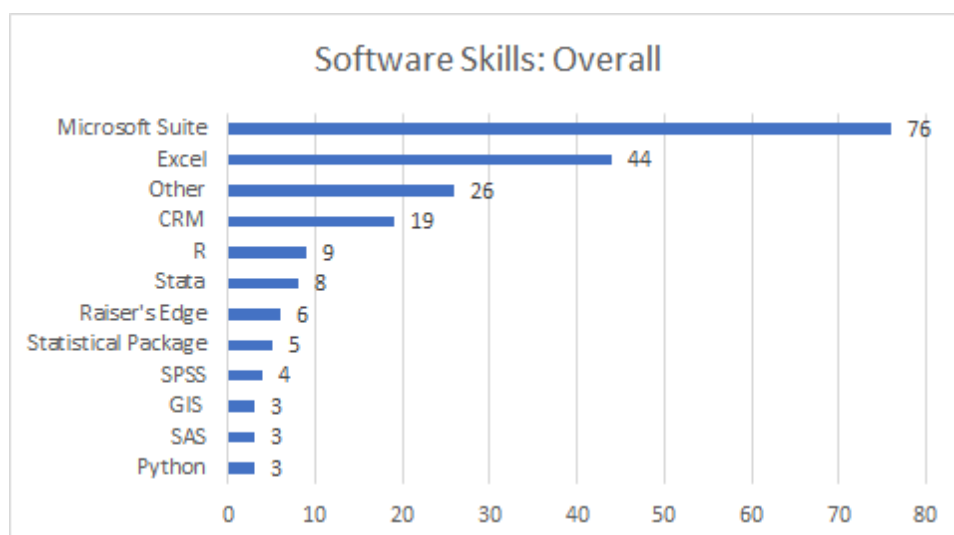


Figure 12

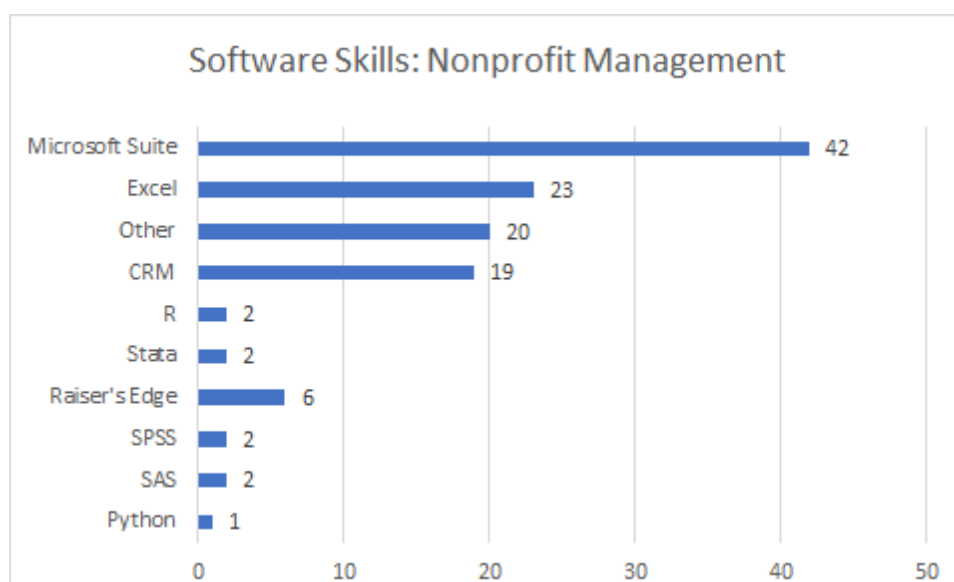
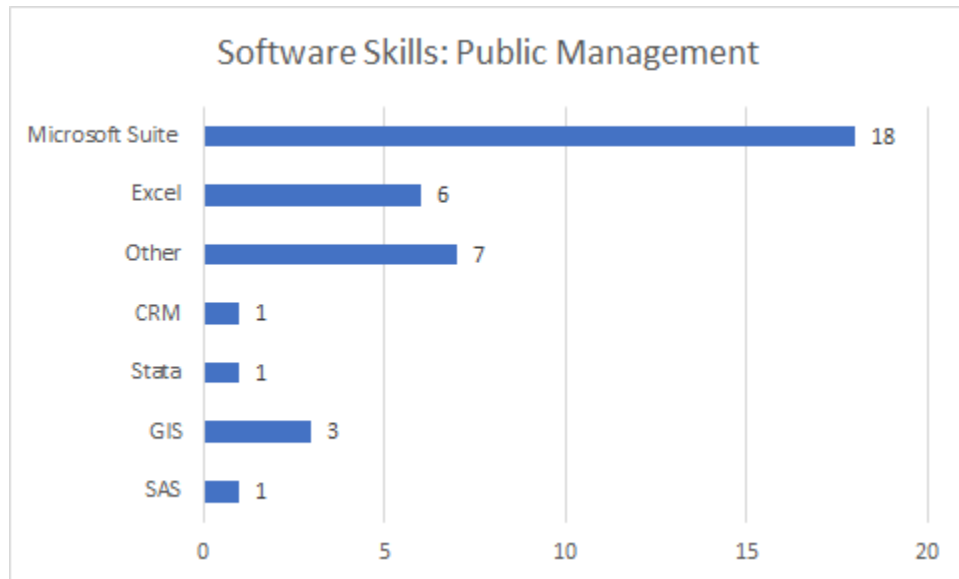
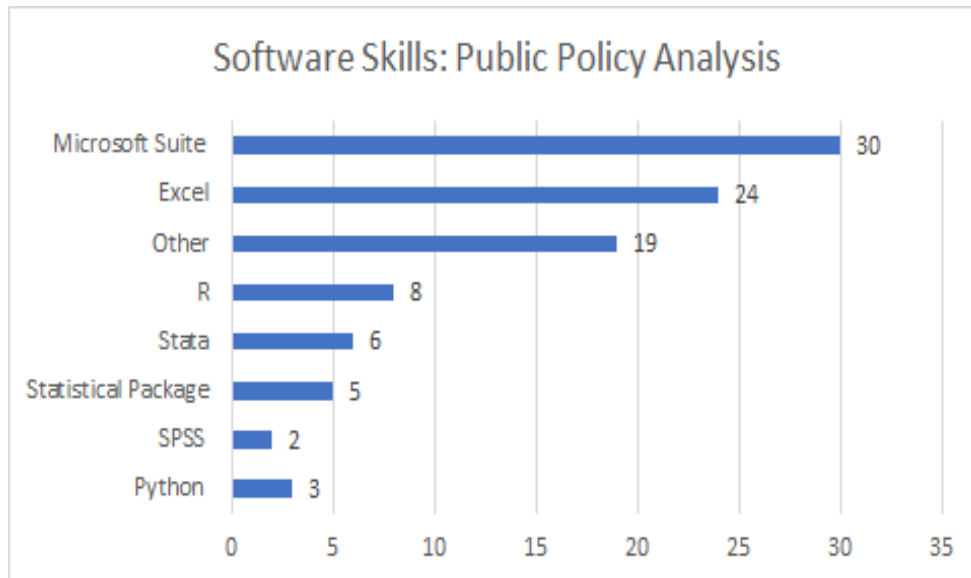
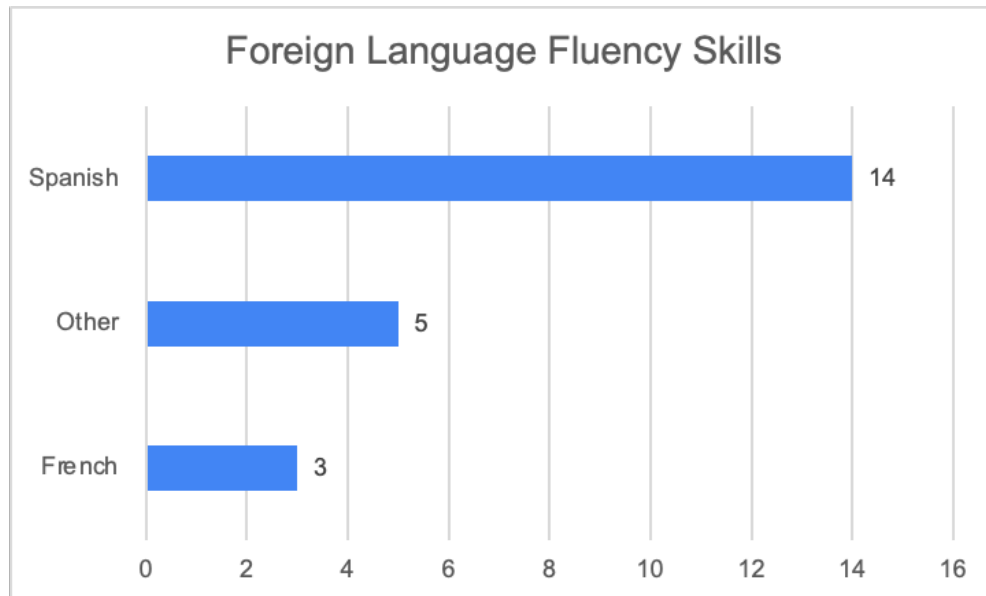


Figure 13**Figure 14**

Foreign Language

Foreign language fluency and skills were coded as present if they were mentioned in any way in a job advertisement. 214 jobs (91.0%) job advertisements did not mention a foreign language. Figure 15 indicates 14 job advertisements mentioned Spanish language skills and 3 job advertisements mentioned French language skills. 1 job advertisement mentioned Arabic and 1 job advertisement mentioned Russian. The “other” languages include American Sign Language, Somali, Indo-Pacific foreign languages, Albanian, and “any foreign language acceptable.” The majority of jobs advertisements in the sample did not require foreign language skills. Notably, only one job in the sample was located internationally.

Figure 15

Security Clearance

The variable for security clearance indicates whether a job advertisement requires a security clearance. This variable was included since there was a perception among team members that many federal government jobs require applicants to have or obtain a security clearance. Figure 16 indicates 33 (14.0%) job advertisements in the sample require a security clearance. Figures 17-19 indicate whether a job advertisement requires a security clearance, separated by Bush School track.

- Figure 17 *Nonprofit Management*: 2.9% (3 out of 104)
- Figure 18 *Public Management*: 13.7% (10 out of 73)
- Figure 19 *Public Policy Analysis*: 21.3% (23 out of 108)

For all tracks, a substantial minority require a security clearance. 39 job advertisements in the sample were at the federal government level.

Figure 16

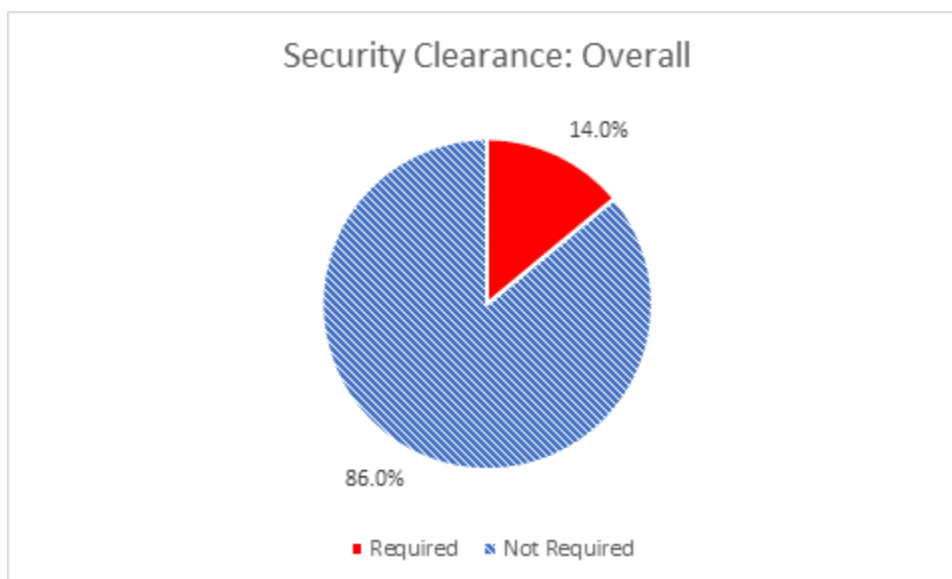


Figure 17

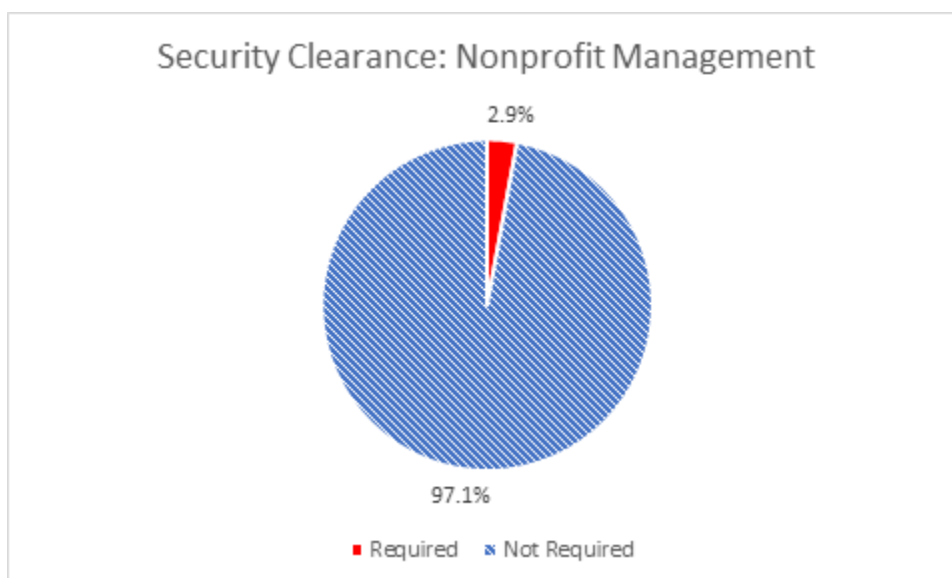
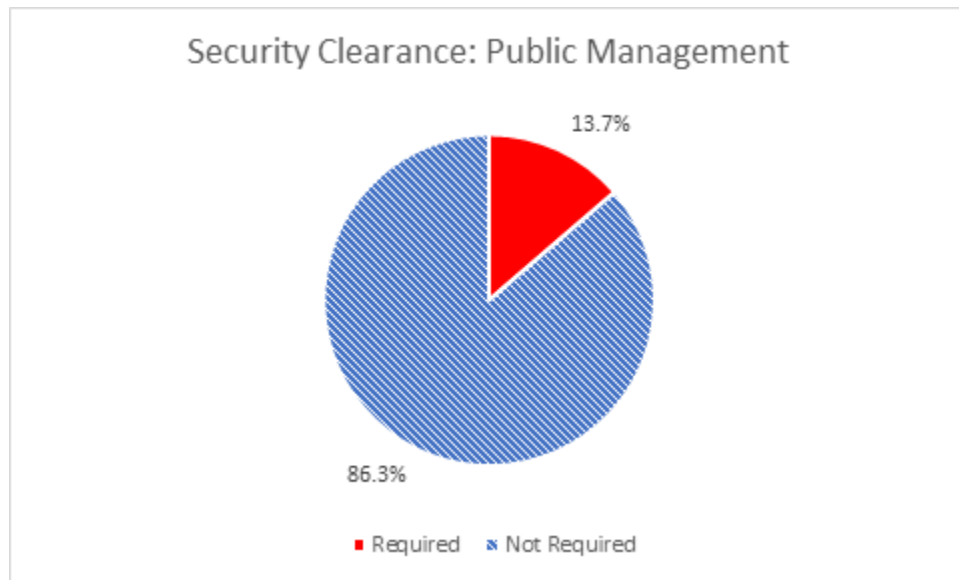
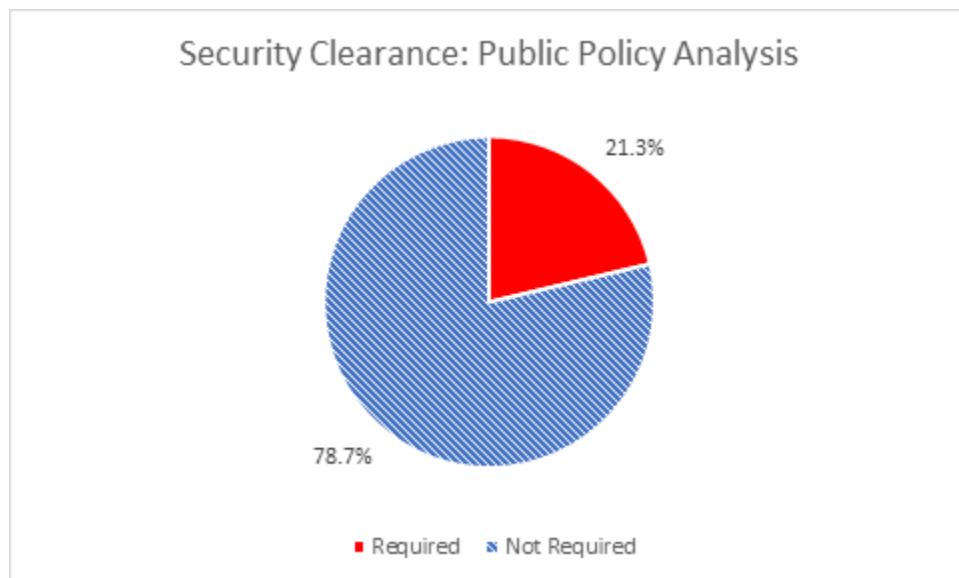


Figure 18**Figure 19****Data Skills**

The variable for data skills includes data skills related to data mining, data analysis, and data entry. Figure 20 indicates 118 (50.2%) job advertisements in the sample require data related skills. Figures 21-23 indicate the presence of data skills in job advertisements in the sample, separated by Bush School track:

- Figure 21 *Nonprofit Management*: 36.5% (38 out of 104)
- Figure 22 *Public Management*: 46.6% (34 out of 73)
- Figure 23 *Public Policy Analysis*: 64.8% (70 out of 108)

Of note, the spectrum of data entry to data analysis can be broad, and the variable was recorded as present if there was any mention of data skills in the job advertisement.

Figure 20

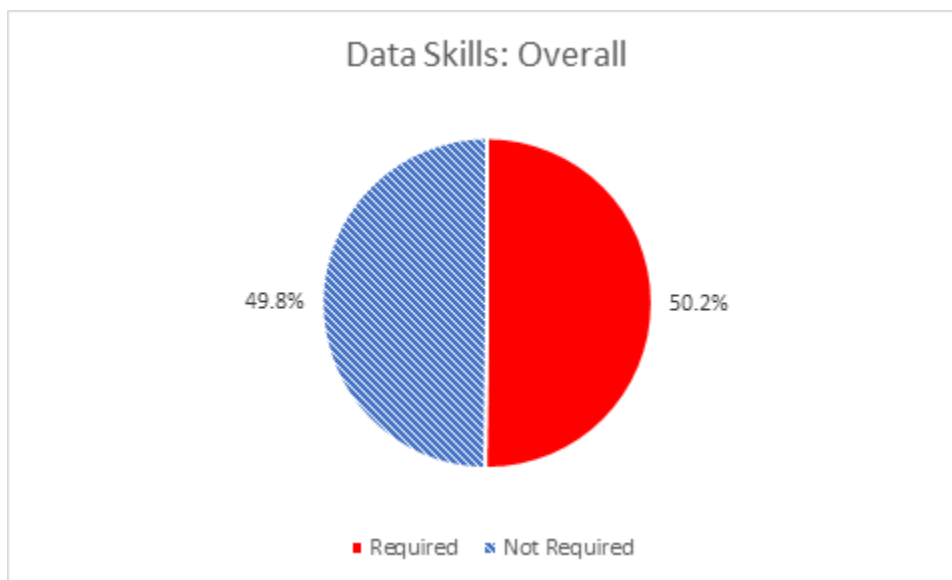


Figure 21

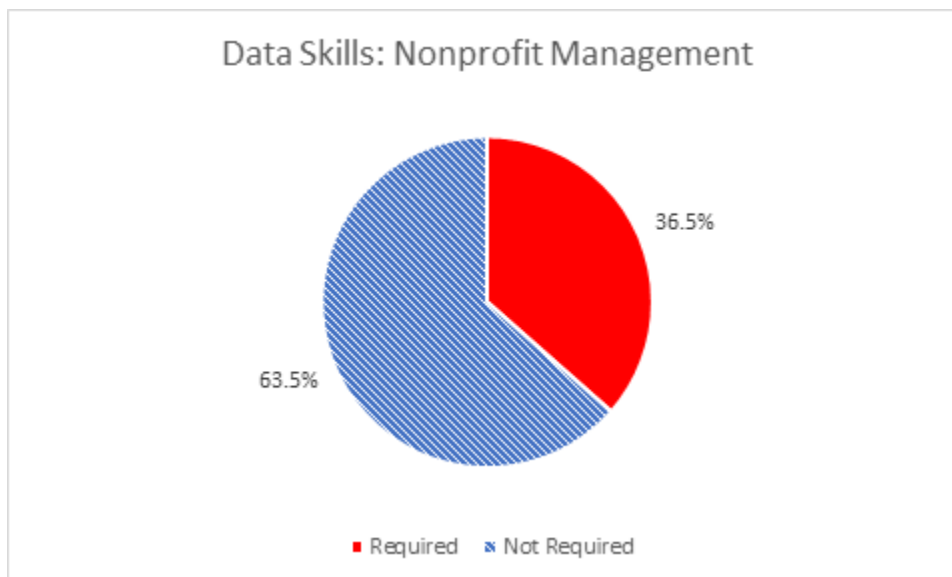
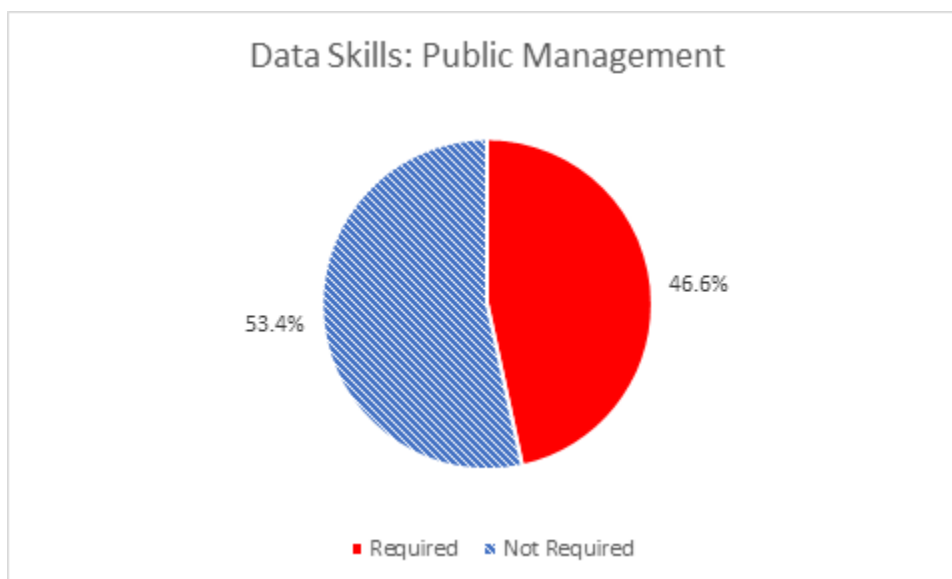
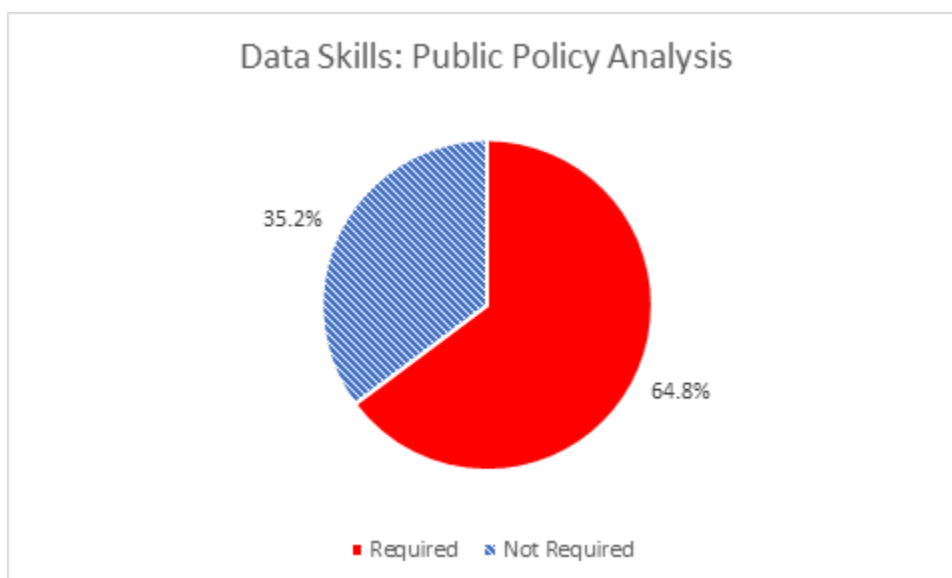


Figure 22**Figure 23**

Grant Skills

The variable for grant skills includes grant writing and grant management skills. Figure 24 indicates 62 (26.4%) job advertisements in the sample require grant related skills. Figures 25-27 indicate the presence of grant skills in job advertisements in the sample, separated by Bush School track:

- Figure 25 *Nonprofit Management*: 42.3% (44 out of 104)
- Figure 26 *Public Management*: 23.3% (17 out of 73)
- Figure 27 *Public Policy Analysis*: 14.8% (16 out of 108)

Based on the data, this skill is favored for students primarily on the Nonprofit Management track.

Figure 24

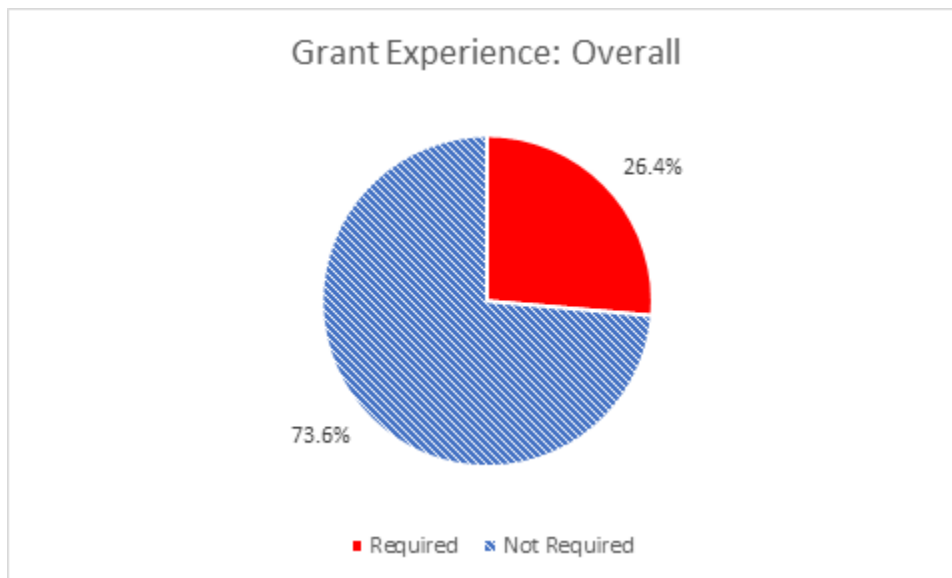


Figure 25

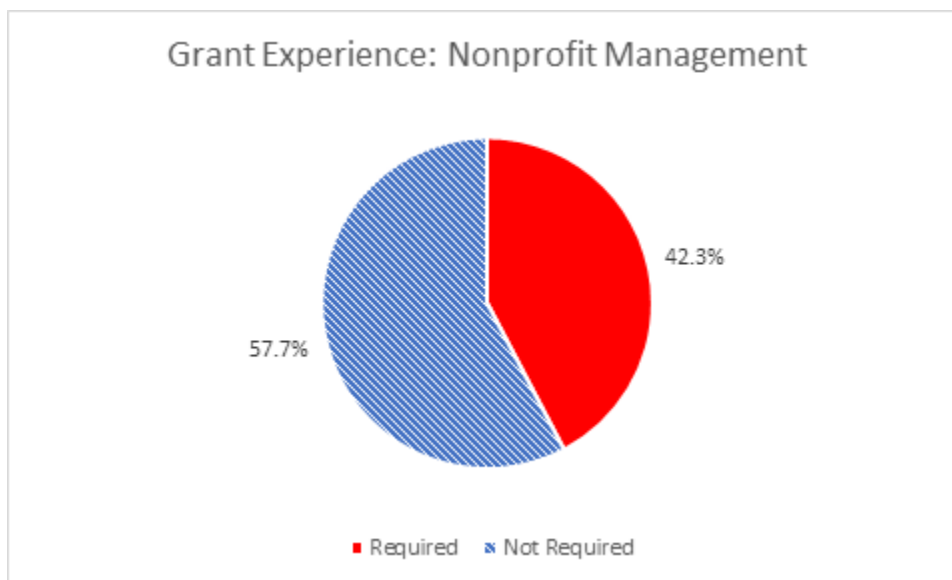
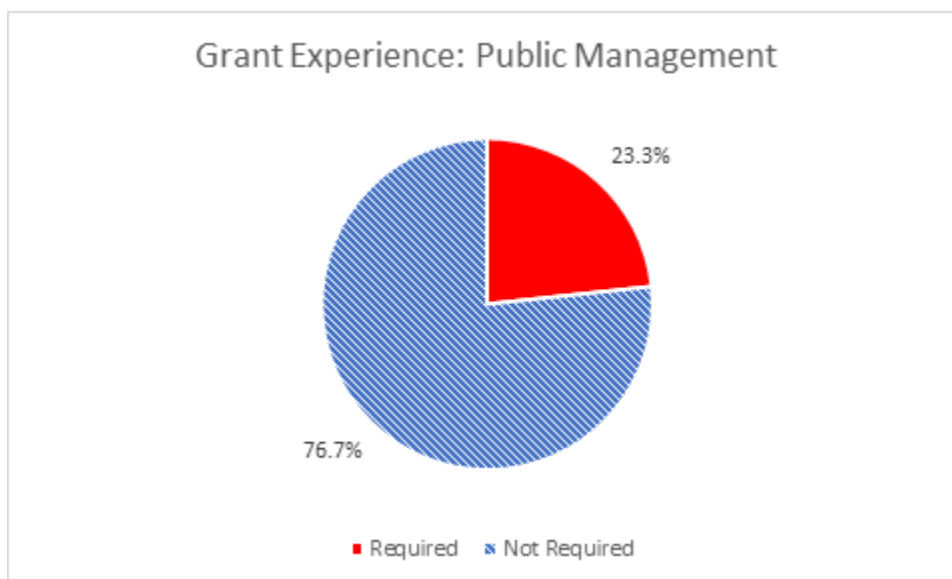
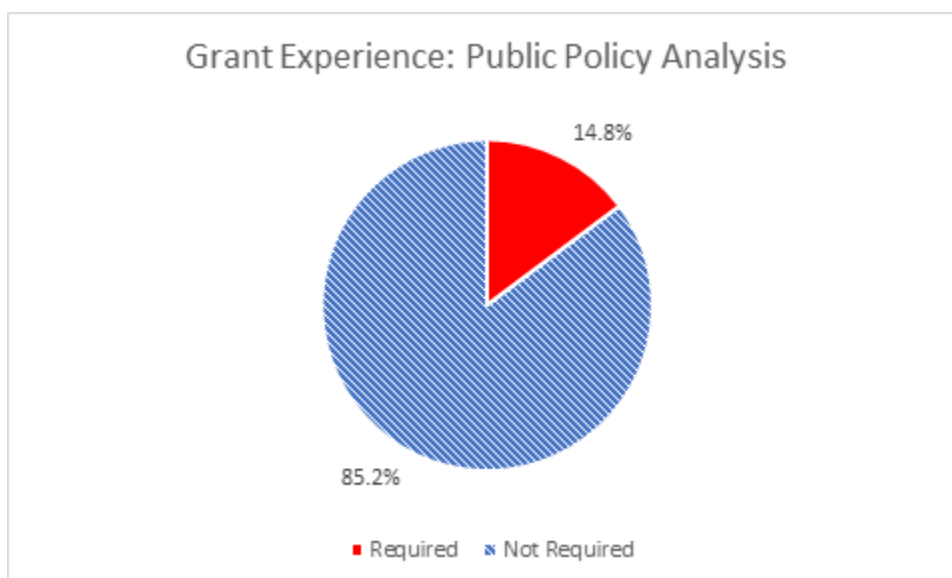


Figure 26**Figure 27**

Finance Skills

The variable for finance skills includes skills related to budgeting, budget planning, forecasting, and tax knowledge. Figure 28 indicates 82 (35.0%) job advertisements in the sample require some form of finance skills. Figures 29-31 indicate the presence of finance skills in job advertisements in the sample, separated by Bush School track.

- Figure 29 *Nonprofit Management*: 29.8% (31 out of 104)
- Figure 30 *Public Management*: 48.0% (35 out of 73)
- Figure 31 *Public Policy Analysis*: 29.6% (32 out of 108)

Based on the data, finance skills are favored for students primarily on the Public Management track.

Figure 28

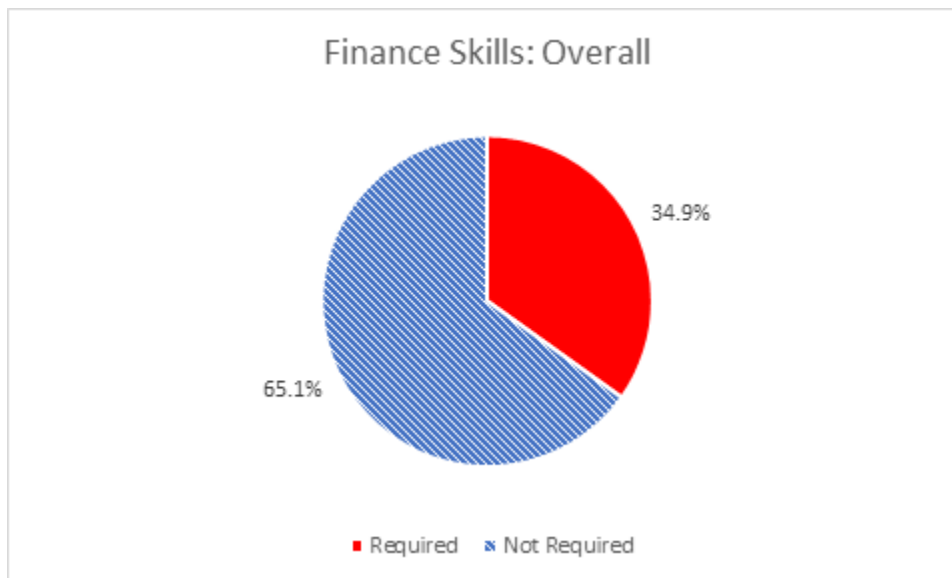


Figure 29

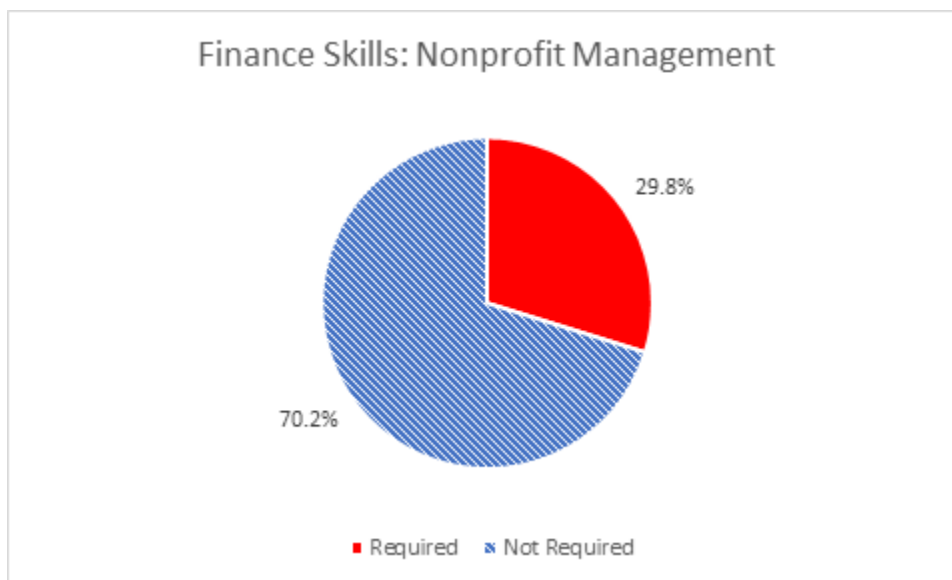
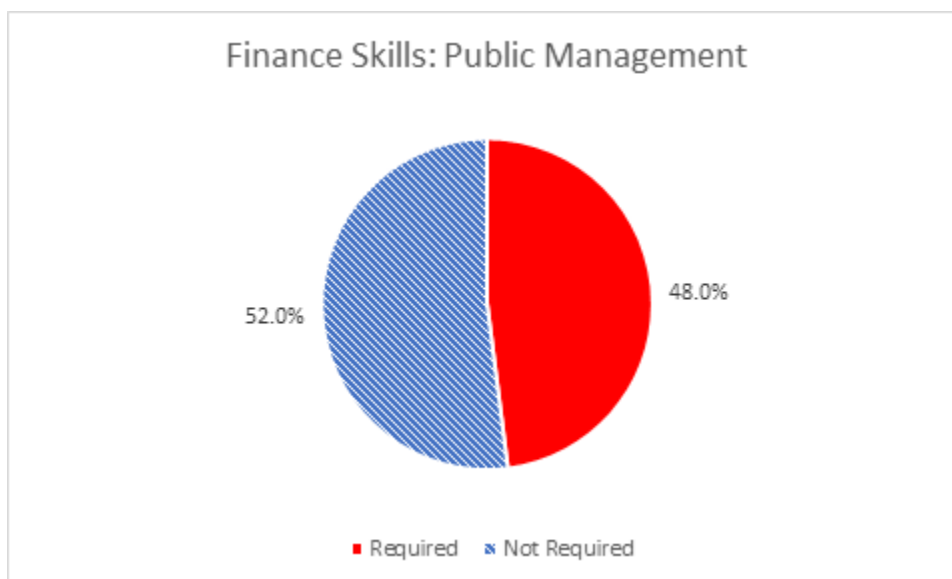
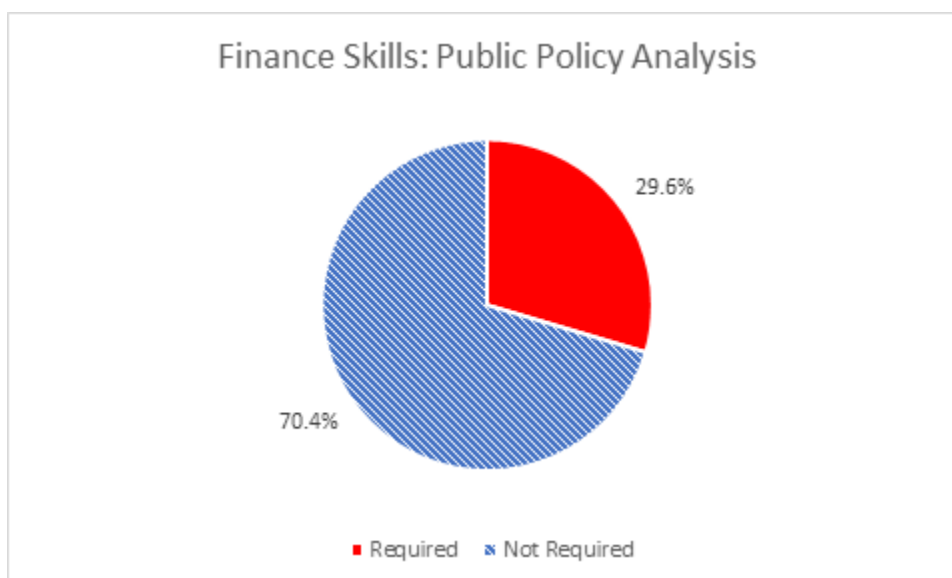


Figure 30**Figure 31**

Advanced Written Communication

The variable for advanced written communication includes any mention of good or advanced writing or written communication skills. Other variables captured specific written communication skills such as report writing or policy memo writing, whereas this variable captured only the presence of strong writing skills in a job advertisement. Figure 32 indicates 178 (75.7%) job advertisements in the sample require some form of advanced written communication skills. Figures 33-35 indicate the presence of advanced written communication skills in the job advertisements, separated by Bush School track:

- Figure 34 *Nonprofit Management*: 70.2% (73 out of 104)
- Figure 35 *Public Management*: 68.5% (50 out of 73)
- Figure 36 *Public Policy Analysis*: 86.1% (93 out of 108)

The majority of job advertisements in the sample require advanced writing skills, with variation in the specific type of writing that may be required.

Figure 32

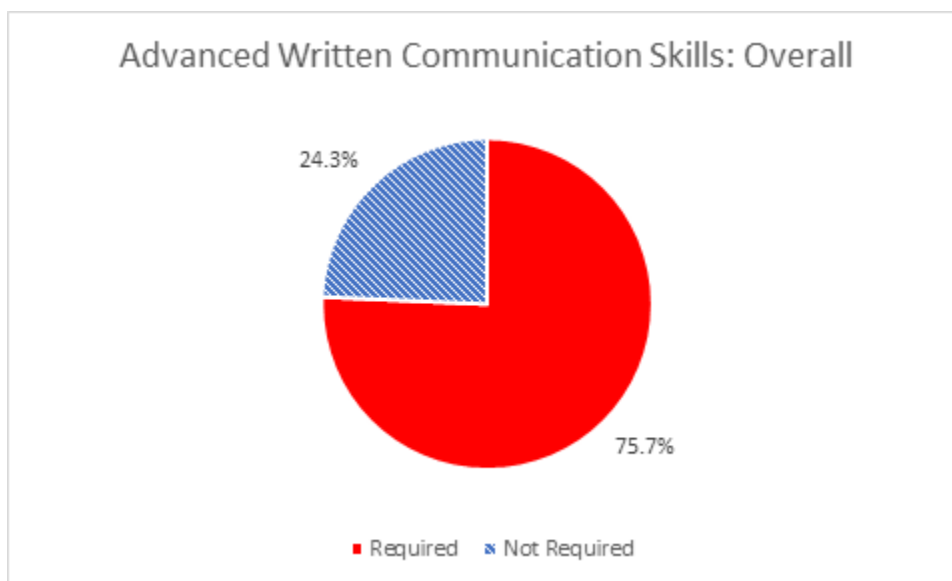


Figure 33

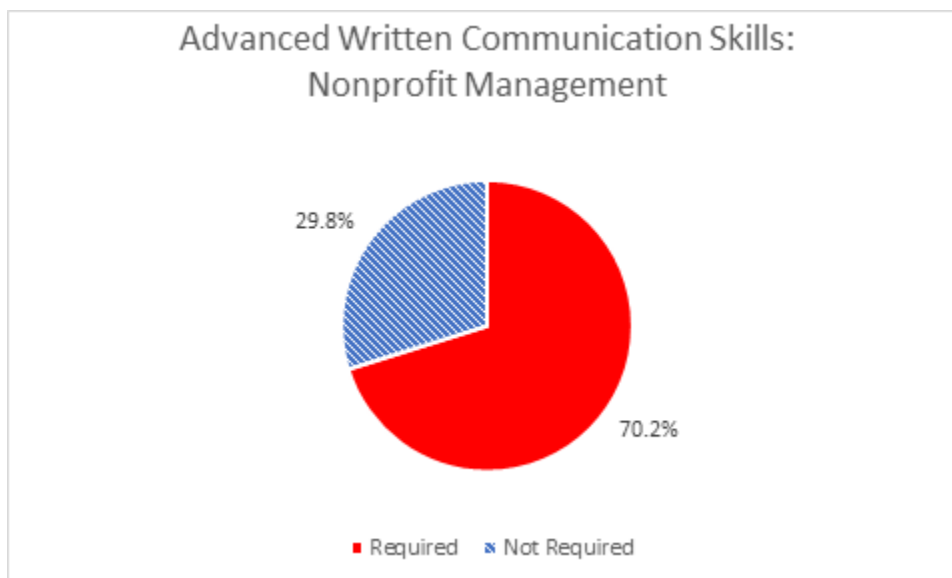


Figure 34**Figure 35**

Specialty Writing Skills

The variable for specialty writing skills includes any mention of specific writing skills in the job advertisement. Data, analytical, and quantitative report writing was the most frequently requested form of specialty writing in job advertisements in the sample, with 44 out of 235 jobs mentioning it. The job advertisements for the Public Policy Analysis track (Figure 38) had the greatest frequency of specialty writing skills, with 31.5% (34 out of 108) mentioning data, analytical, and quantitative report writing, 28.7% (31 out of 108), mentioning policy brief writing, and 18.5% (20 out of 108) mentioning policy memo writing. 142 jobs did not require a specific writing skill.

The “other” specialty writing skills include budget proposals (3), and issue briefs (3), reports (1), position papers (1), letters of intent(1), membership appeals (1), creative writing(1), deeds/rehab proposals (1), congressional testimony(1), policy recommendations (1), hearing books (1), national news releases (1), and RFQ/RFP (1). See Appendix G for a table of the “other” specialty writing skills.

Figure 36

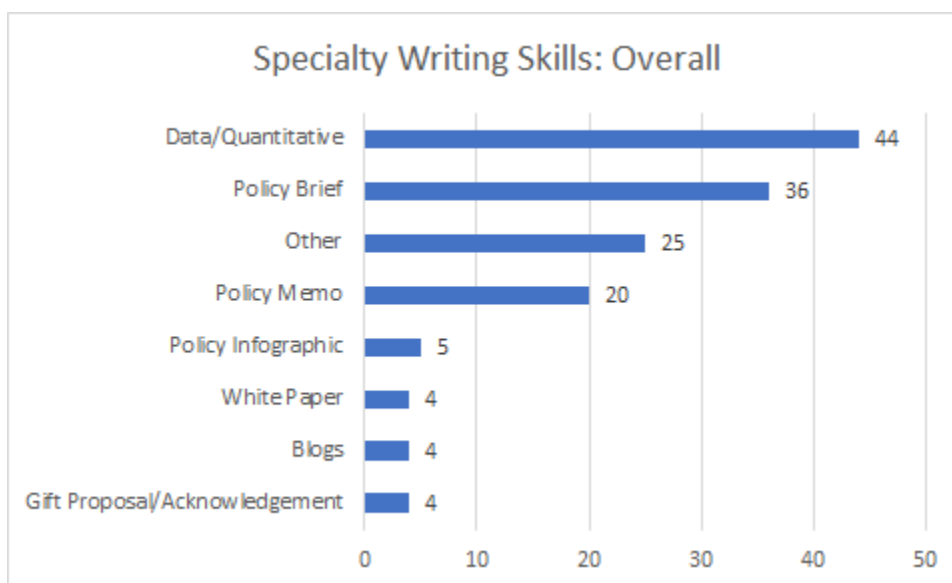


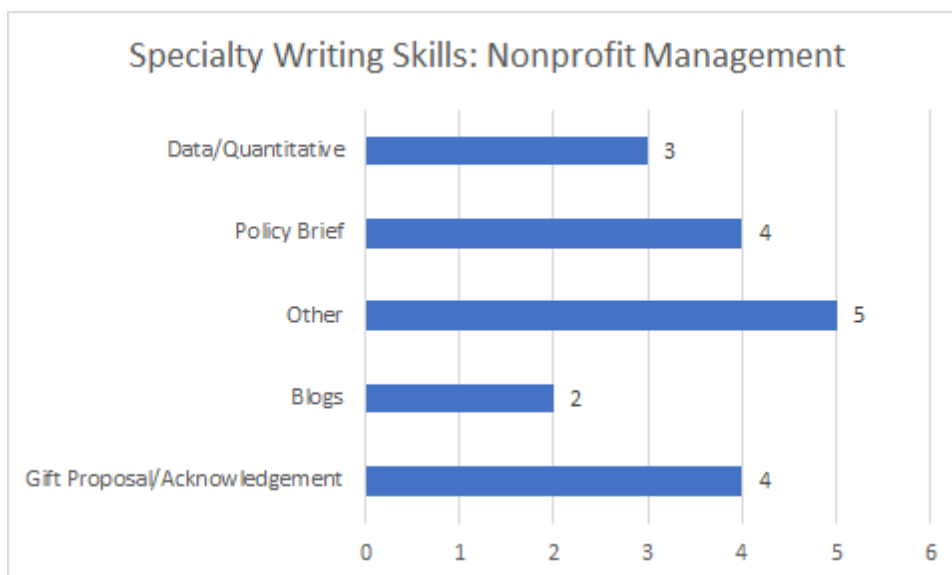
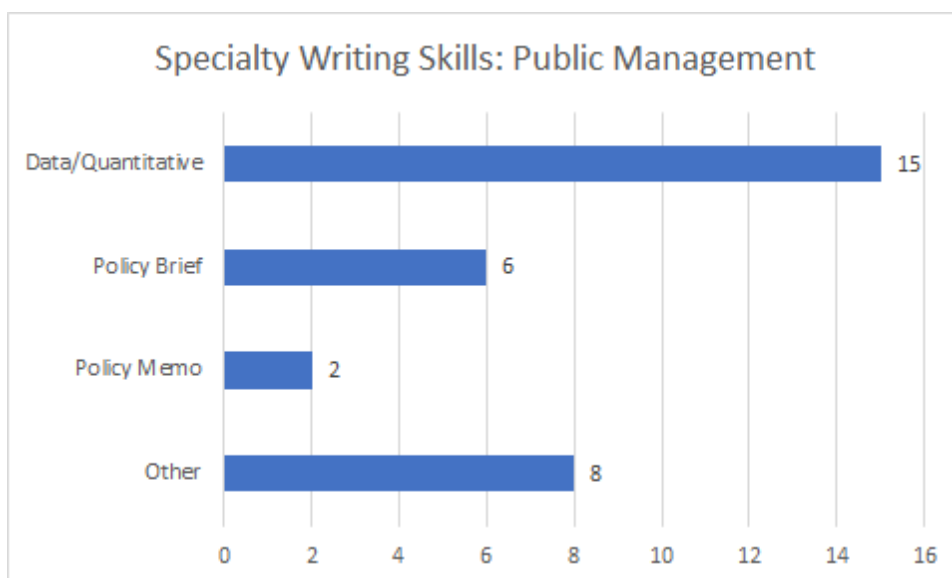
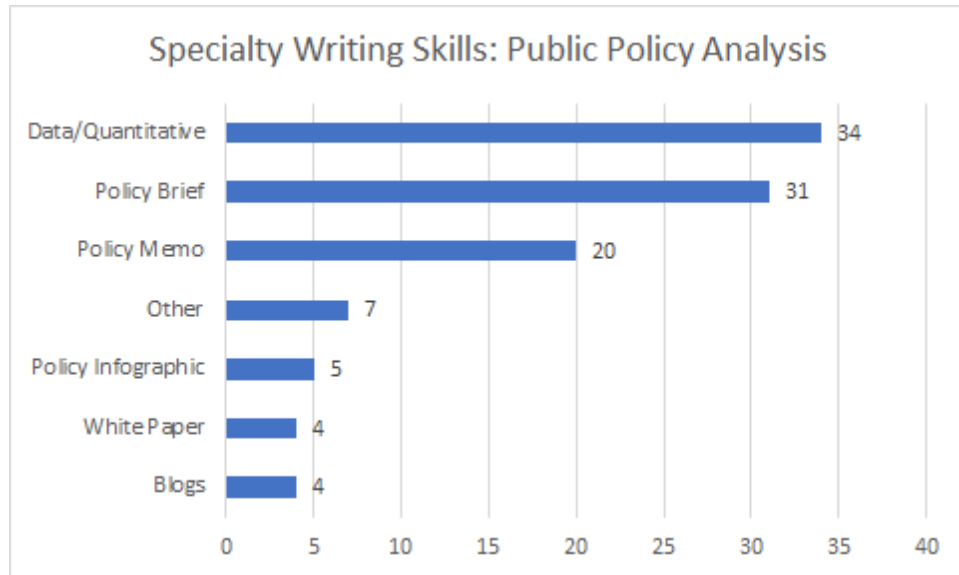
Figure 37**Figure 38**

Figure 39

Presentation Skills

The variable for presentation skills includes skills related to both the development and action of presenting. Figure 40 indicates 90 (38.3%) job advertisements in the sample require presentation skills. Figures 41-43 indicate the presence of presentation skills in the job advertisements, separated by Bush School track:

- Figure 41 *Nonprofit Management*: 32.7% (34 out of 104)
- Figure 42 *Public Management*: 42.5% (31 out of 73)
- Figure 43 *Public Policy Analysis*: 42.6% (46 out of 108)

In the sample, presentation skills are required in comparable amounts between the Public Management track and Public Policy Analysis tracks.

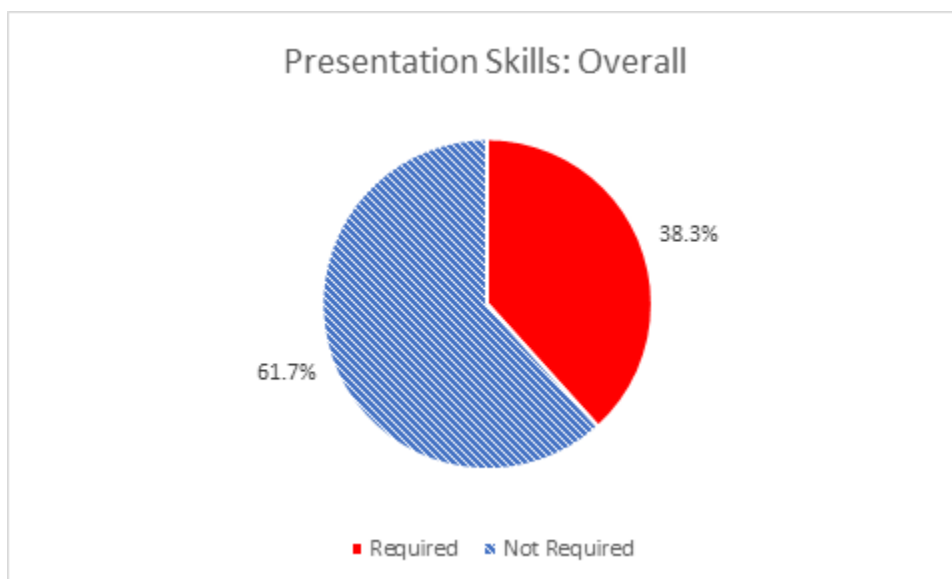
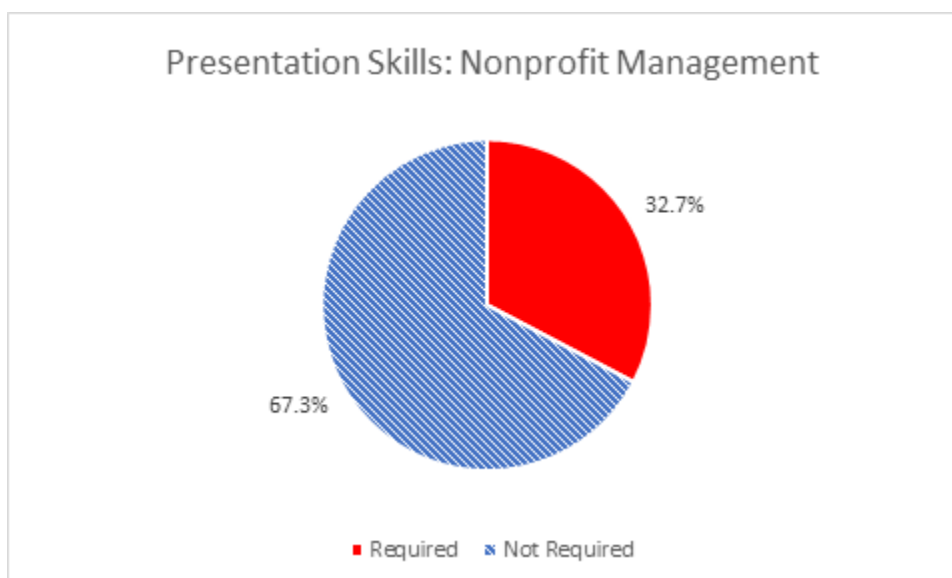
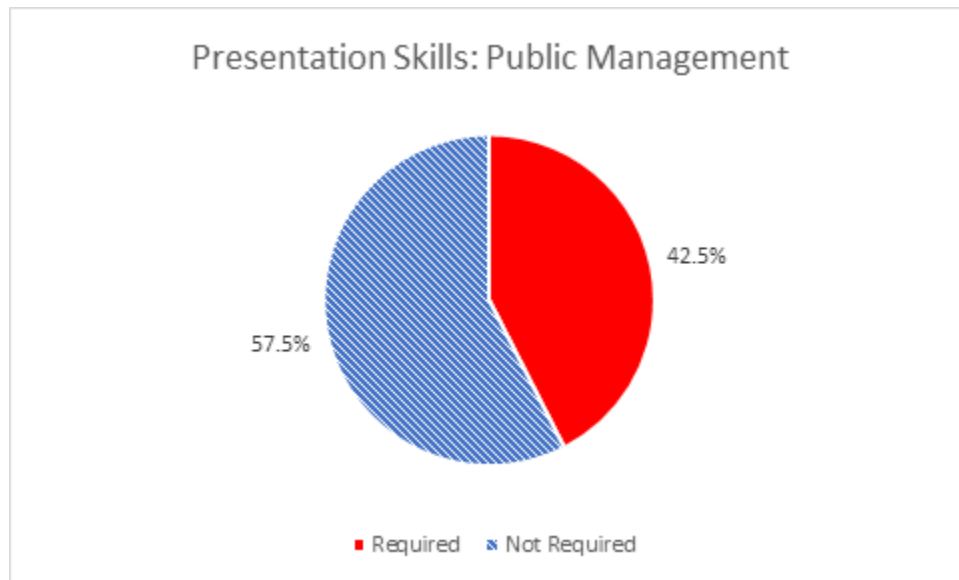
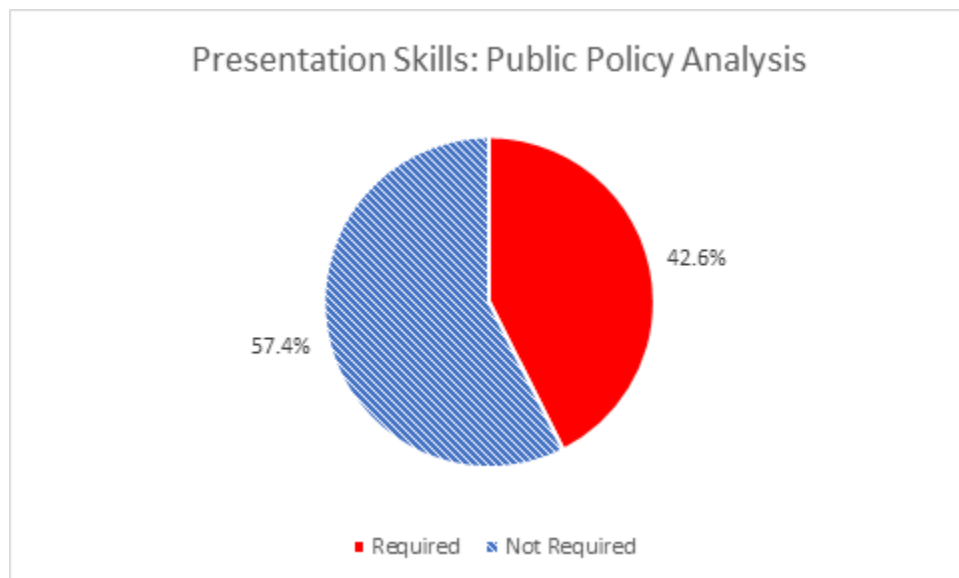
Figure 40**Figure 41**

Figure 42**Figure 43**

Research Skills

The variable for research skills encompasses research and reporting on research skills. Figure 44 indicates 147 (62.6%) job advertisements in the sample require research and report skills. Figures 45-47 indicate the presence of research and/or report skills in the job advertisements, separated by Bush School track:

- Figure 45 *Nonprofit Management*: 50.0% (52 out of 104)
- Figure 46 *Public Management*: 56.2% (41 out of 73)

- Figure 47 *Public Policy Analysis*: 79.6% (86 out of 108)

Research and/or reporting on research skills were required in the majority of all job advertisements as well as within each track. Notably, this variable includes a variety of forms of research, from data intensive research and reporting to donor research.

Figure 44



Figure 45

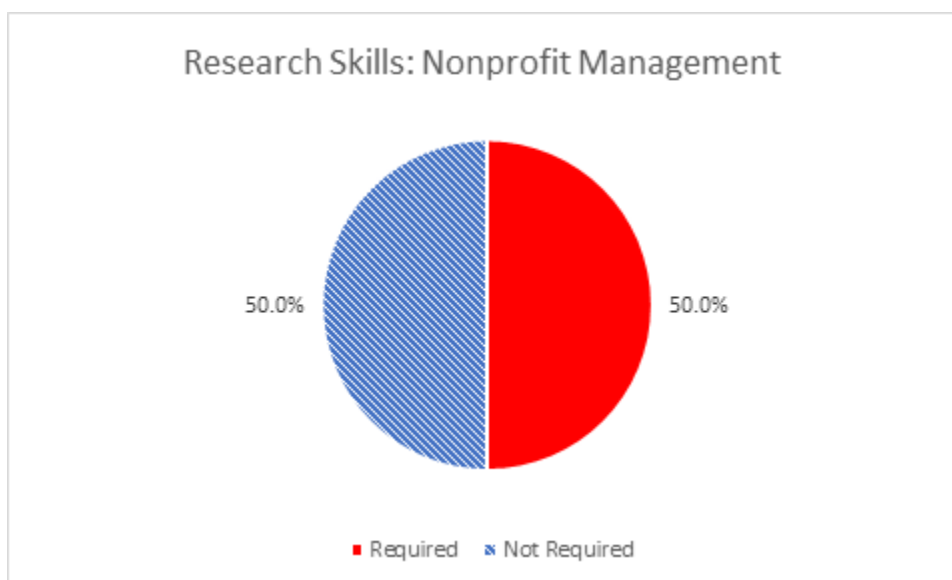
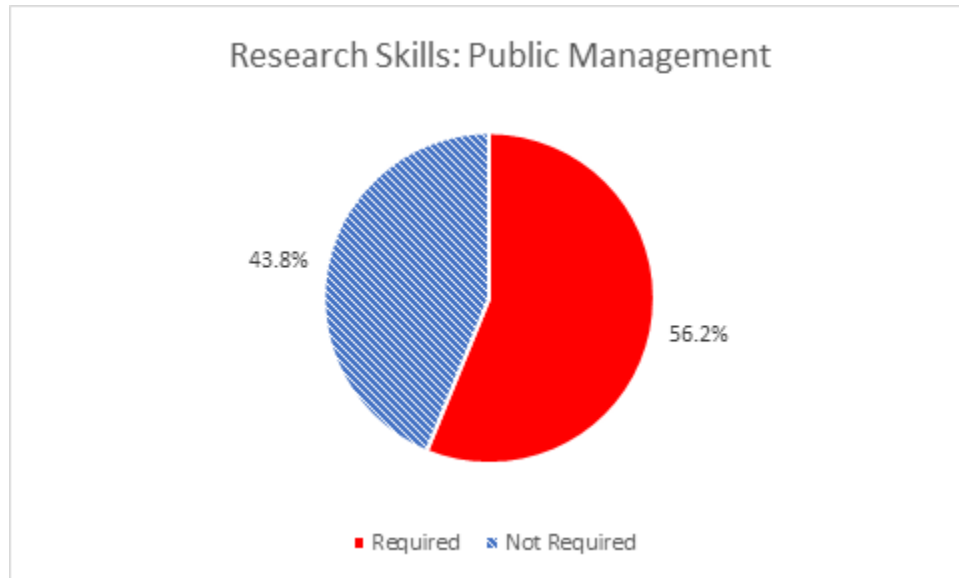
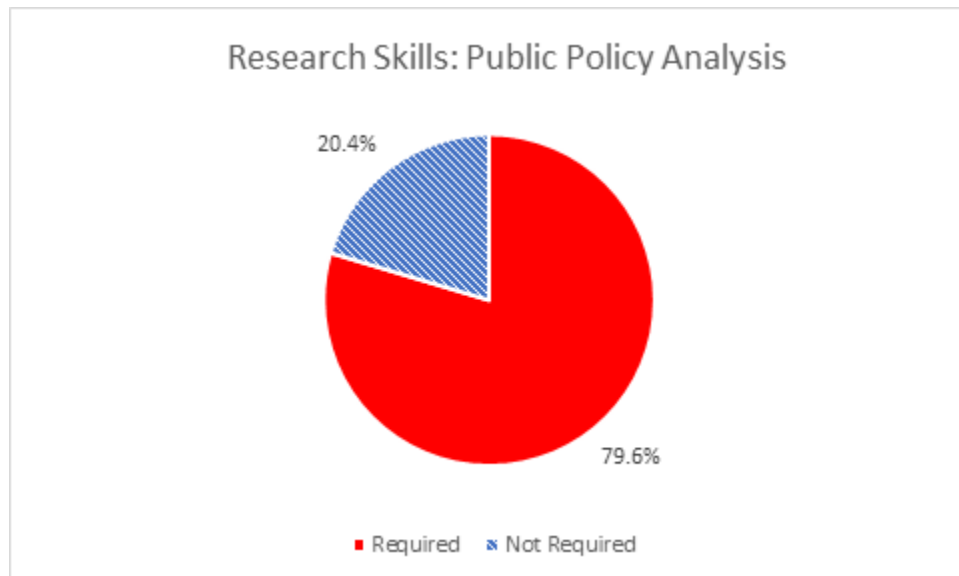


Figure 46**Figure 47**

Contract Skills

The variable for contract skills includes any form of contract skill, including contract management, contract negotiation, and contract writing. Figure 48 indicates 13 (5.5%) job advertisements in the sample require contract experience or contract skills. Figures 49-51 indicate the presence of contract skills in the job advertisements, separated by Bush School track:

- Figure 49 *Nonprofit Management*: 4.8% (5 out of 104)
- Figure 50 *Public Management*: 12.3% (9 out of 73)

- Figure 51 *Public Policy Analysis*: 3.7% (4 out of 108)

Of all binary variables included in the data set, the variable for contract experience was present the least in all job advertisements in the sample.

Figure 48

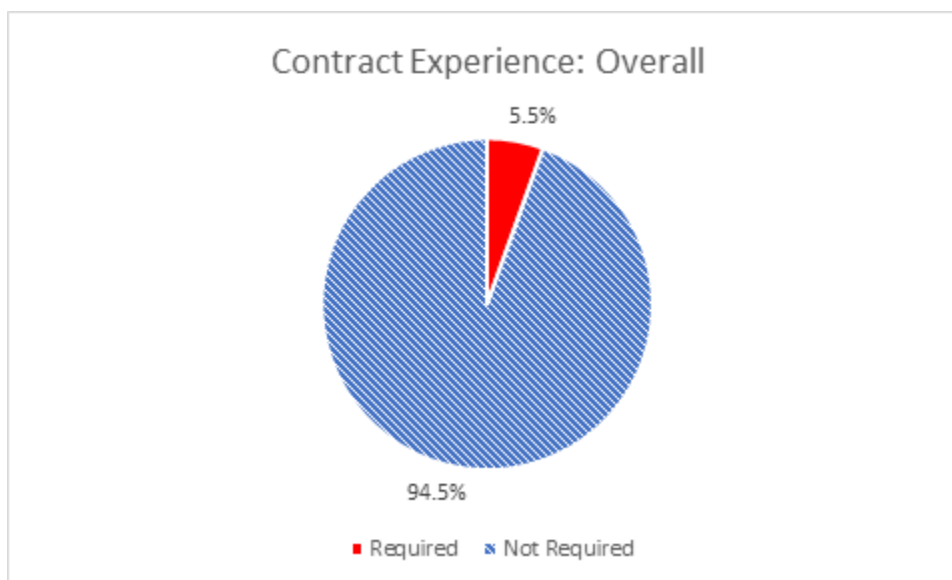


Figure 49

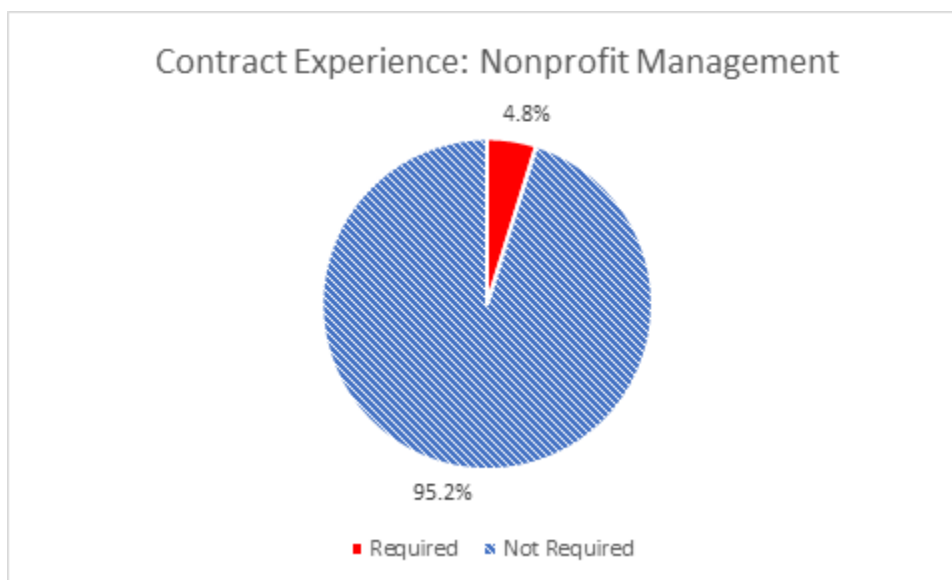
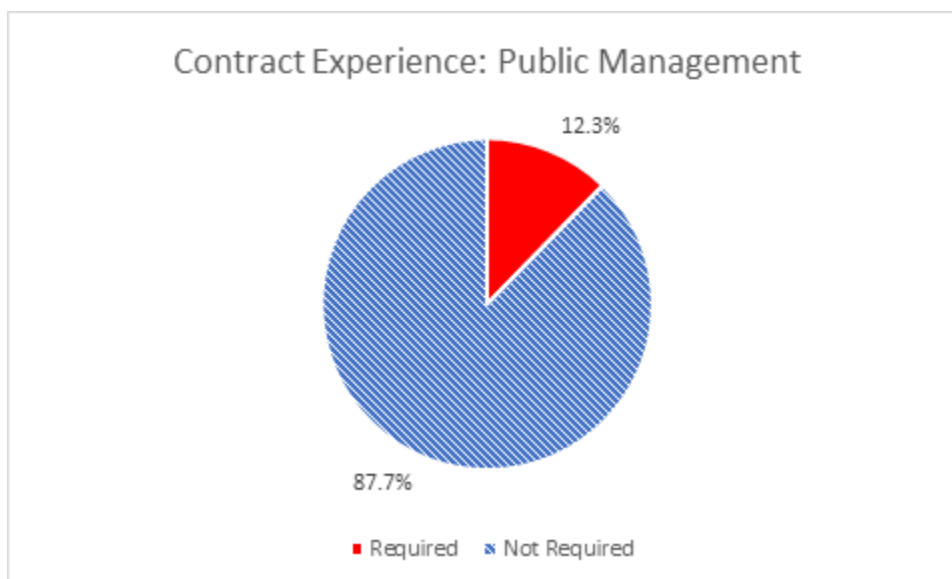


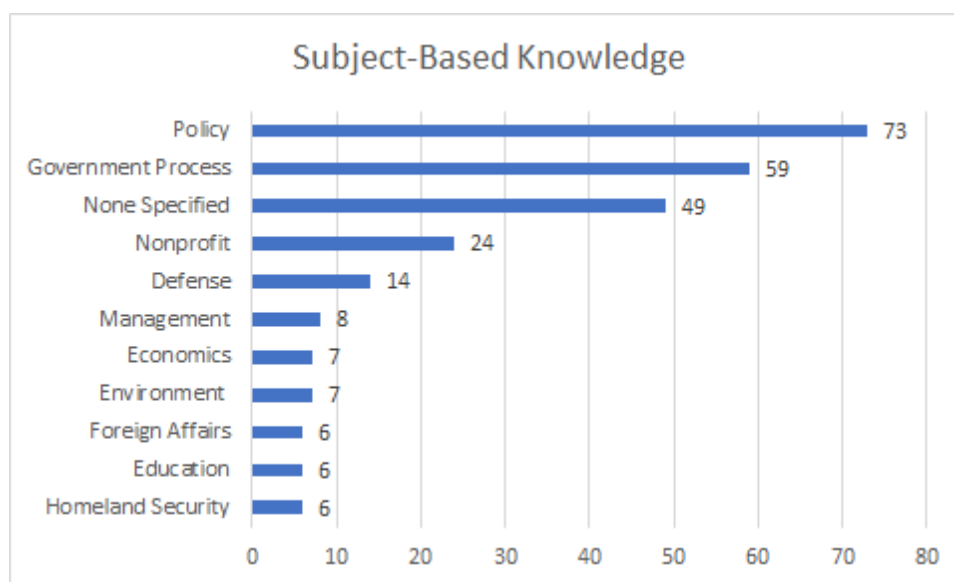
Figure 50**Figure 51**

Subject-Based Knowledge

Various areas of subject-based knowledge were included in the data collection. In job advertisements in the sample, policy knowledge was mentioned in 73 (31.1%) jobs and government process knowledge was mentioned in 59 (25.1%) jobs. Additionally, 24 (10.2%) jobs wanted applicants with nonprofit knowledge and 18 (7.7%) jobs wanted applicants with advocacy knowledge.

Appendix H includes a list of the “other” subject-based knowledge including race issues/discrimination(5), community development/urban planning(5), war studies/veteran affairs(4), volunteer management industry(3), human trafficking sexual assault prevention(3), art history/museum history(3), fundraising/major gifts(2), marketing(2), emergency preparedness/EMS(2), climate(1), events(1), tax policy(1), media(1), engineering(1), food safety(1), social justice(1), qualitative and quantitative methods(1), and animal welfare(1).

Figure 52



Social Media

This variable for social media includes any form of social media experience or skill including content creation, social media analytics, and copywriting. Figure 53 indicates 36 (11.1%) job advertisements in the sample require social media experience or skills. Figures 54-56 indicate whether social media skills were required by job advertisements, separated by Bush School track:

- Figure 54 *Nonprofit Management*: 18.3% (19 out of 104)
- Figure 55 *Public Management*: 6.9% (5 out of 73)
- Figure 56 *Public Policy Analysis*: 5.6% (6 out of 108)

This variable was most prevalent among Nonprofit Management job advertisements.

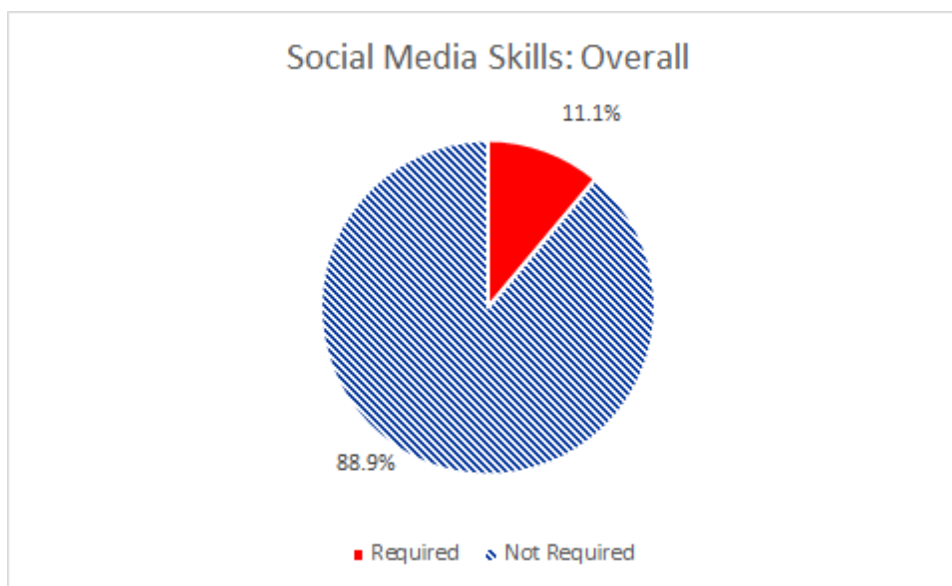
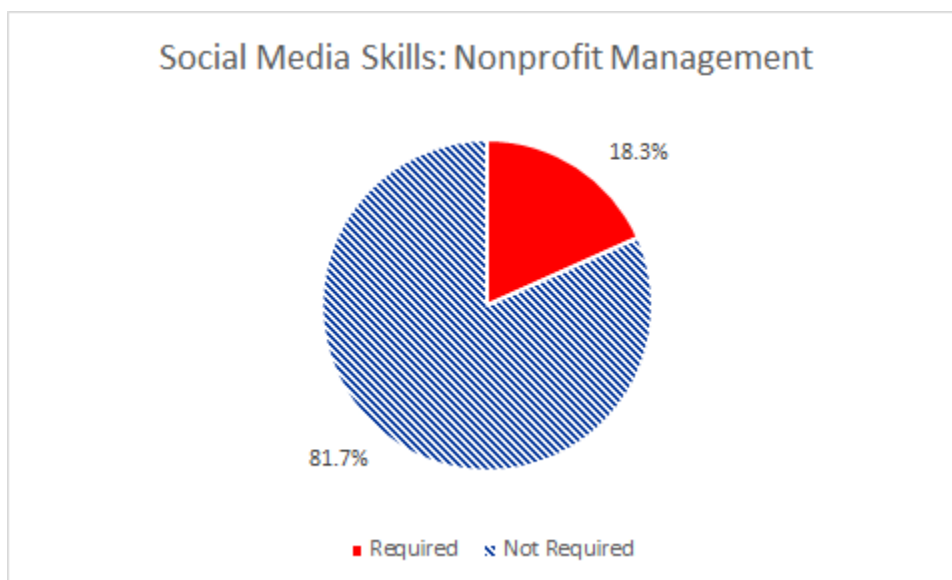
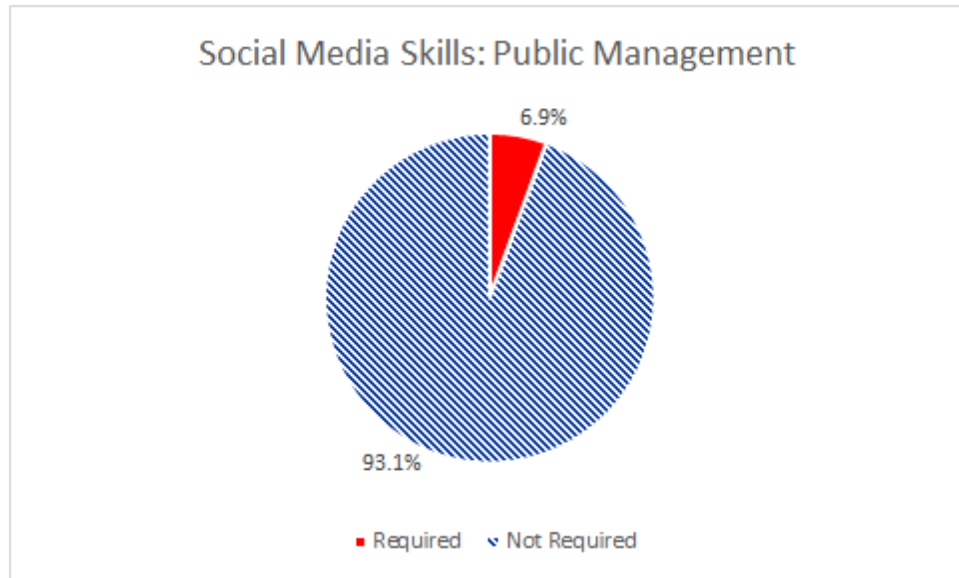
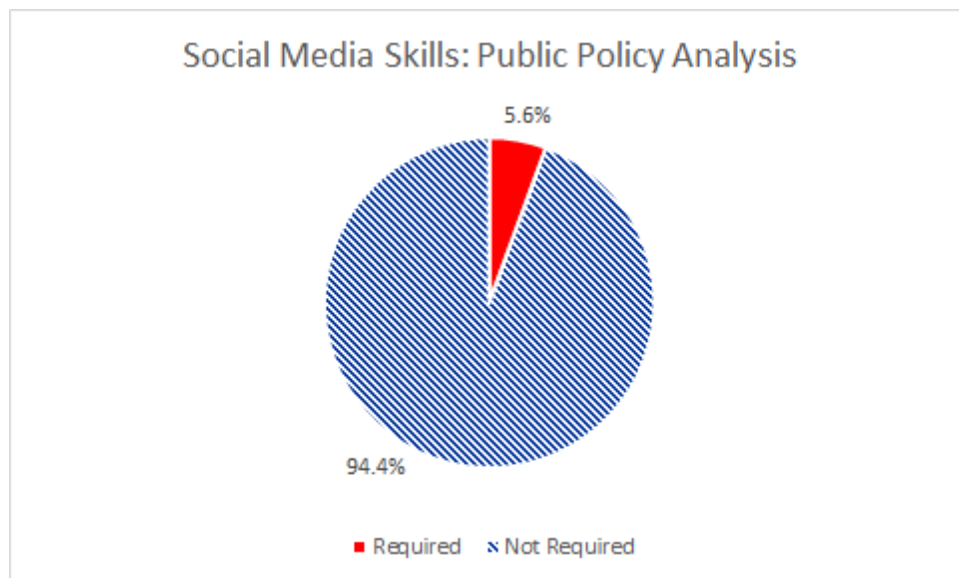
Figure 53**Figure 54**

Figure 55**Figure 56**

Internal Relations

The variable for internal relations includes skills related to managing people, internal communications, event planning, and other related skills. Figure 57 indicates 132 (56.2%) job advertisements in the sample require internal relations skills. Figures 58-60 indicate whether internal relations skills were required by job advertisements, separated by Bush School track:

- Figure 58 *Nonprofit Management*: 53.9% (56 out of 104)
- Figure 59 *Public Management*: 79.5% (58 out of 73)
- Figure 60 *Public Policy Analysis*: 51.9% (56 out of 108)

This variable was prevalent in the majority of job advertisements in the sample, with close to 80% of public management job advertisements requiring internal relations skills.

Figure 57

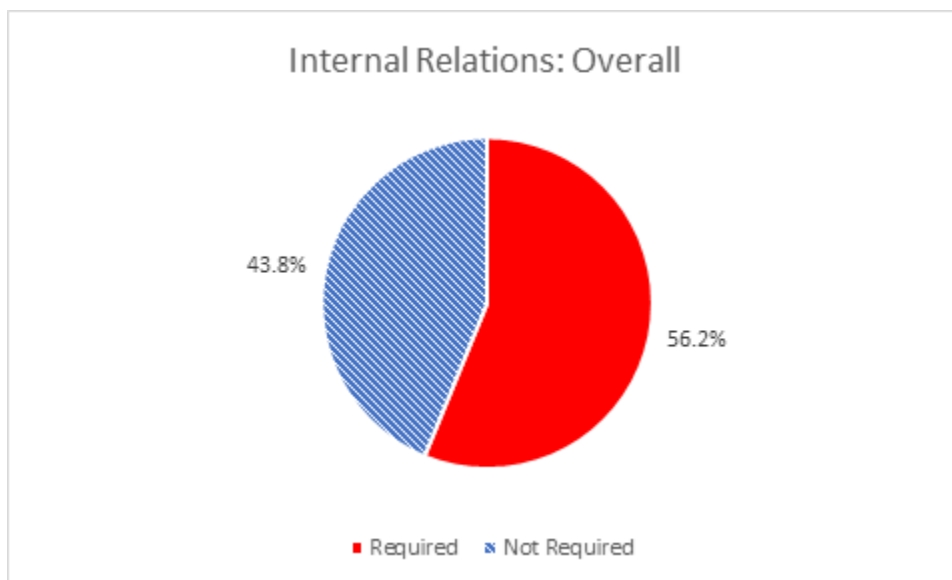


Figure 58

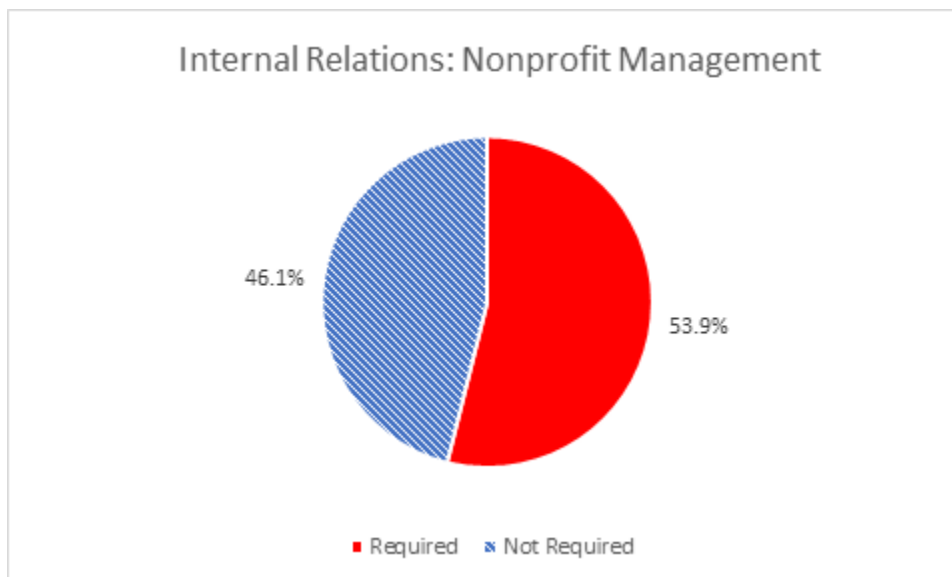
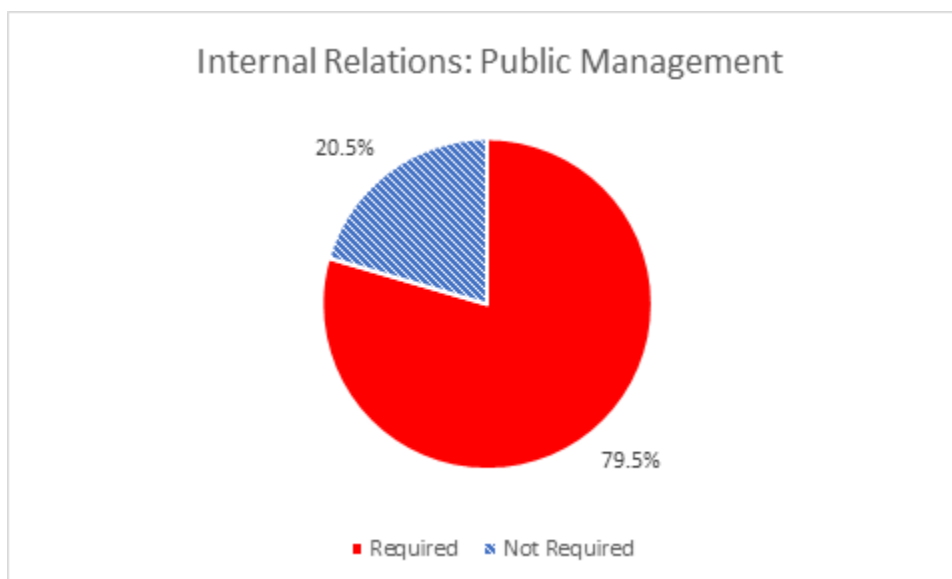
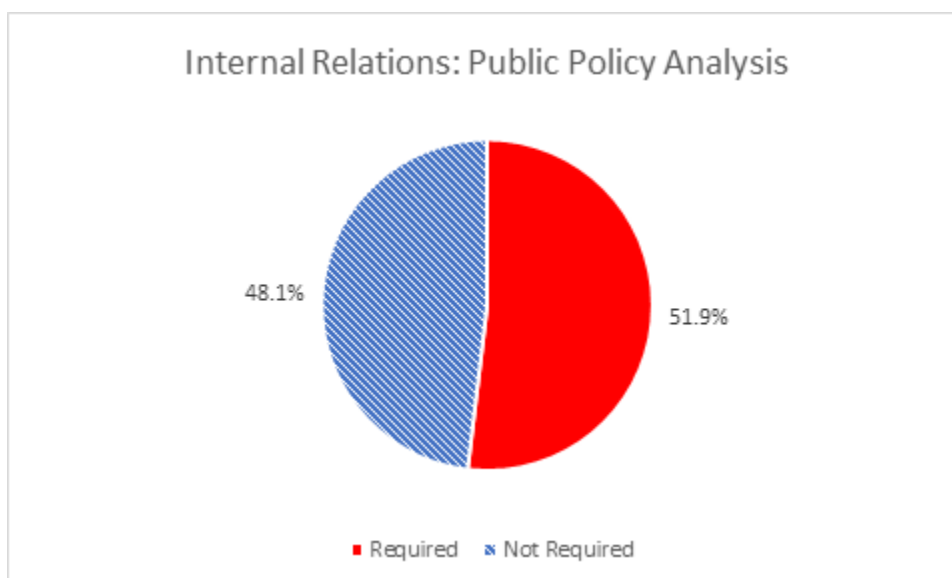


Figure 59**Figure 60**

Non-People Management

The variable for non-people management includes skills related to project management and program management. The research team coded this variable as present if the job advertisement included the word “management.” Examples include project or program management, resource management, and budget management. Figure 61 indicates 138 (58.7%) job advertisements in the sample require non-people management skills. Figures 62-64 indicate whether non-people management skills were required by job advertisements, separated by Bush School track:

- Figure 62 *Nonprofit Management*: 52.9% (55 out of 104)
- Figure 63 *Public Management*: 78.1% (57 out of 73)
- Figure 64 *Public Policy Analysis*: 53.7% (58 out of 108)

This variable was prevalent in the majority of job advertisements in the sample, with the greatest prevalence among Public Management job advertisements.

Figure 61

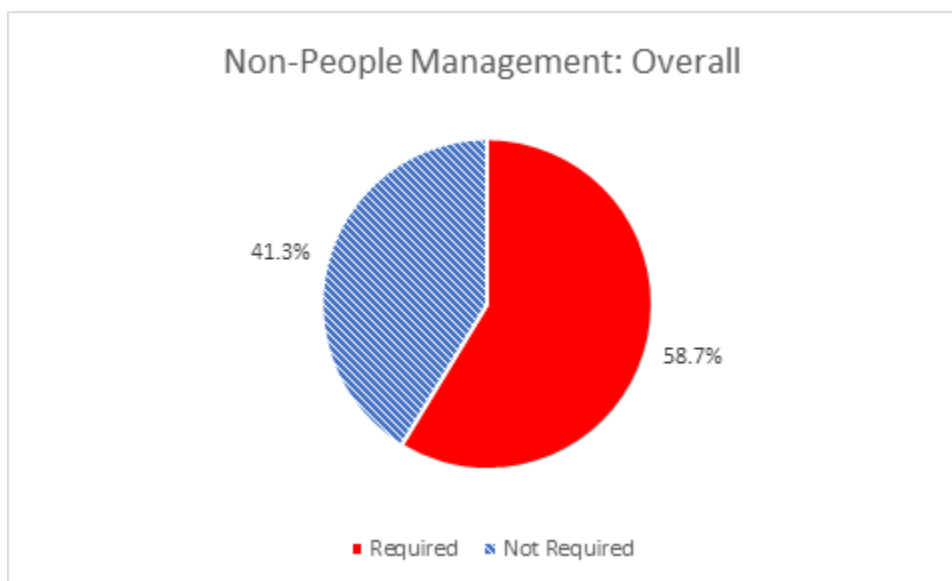


Figure 62

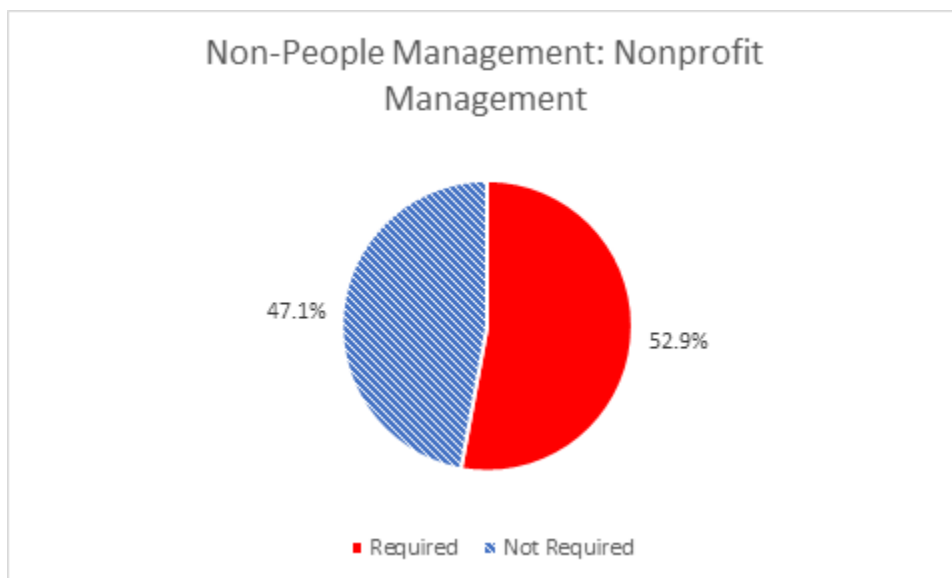
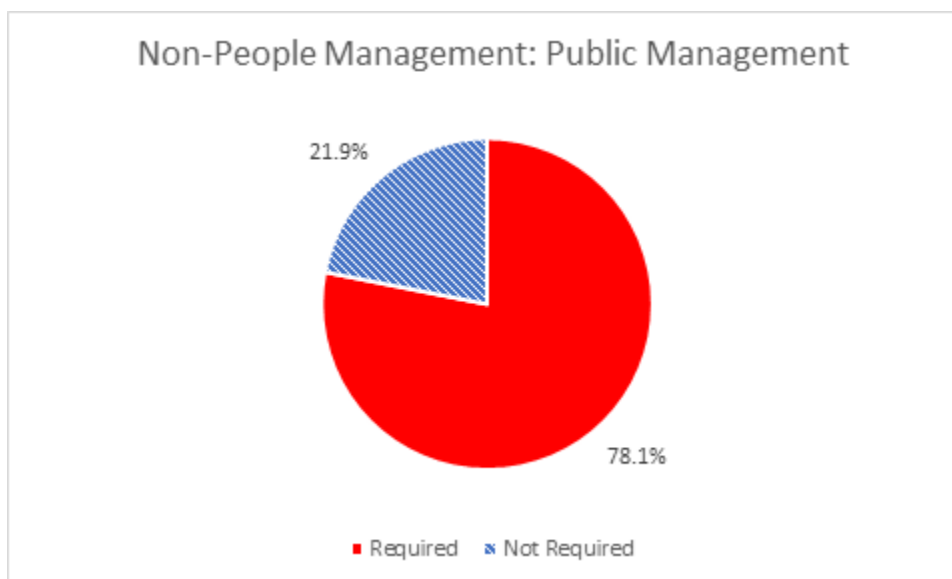
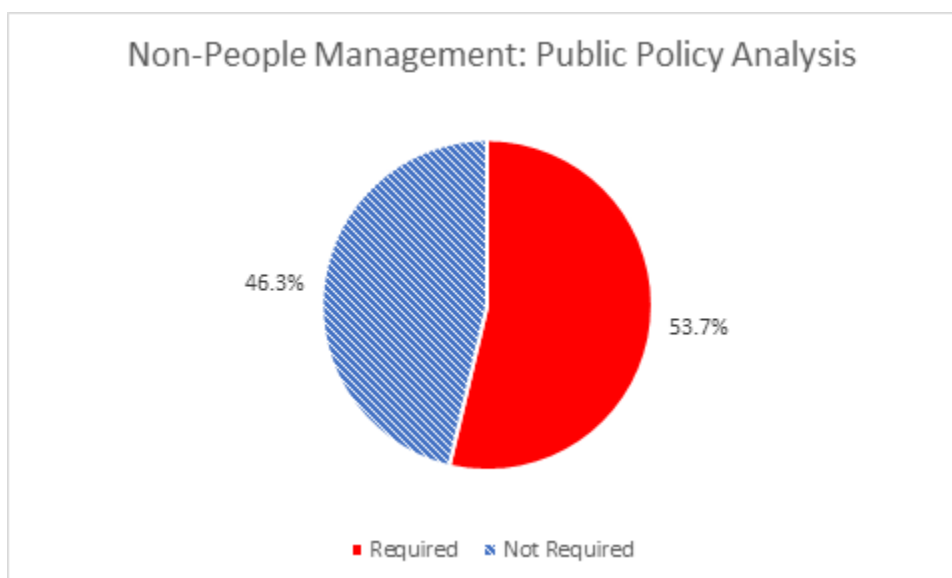


Figure 63**Figure 64**

External Relations

The variable for external relations includes skills primarily related to community relations, interagency partnerships, external partnerships and client-coordination. Figure 65 indicates 153 (65.1%) job advertisements in the sample require external relations skills. Figures 66-68 indicate whether external relations skills were required by job advertisements, separated by Bush School track:

- Figure 66 *Nonprofit Management*: 70.2% (73 out of 104)
- Figure 67 *Public Management*: 74.0% (54 out of 73)
- Figure 68 *Public Policy Analysis*: 50.0% (54 out of 108)

This variable was prevalent in the majority of job advertisements in the sample, with the greatest prevalence among Public Management and Nonprofit Management job advertisements.

Figure 65

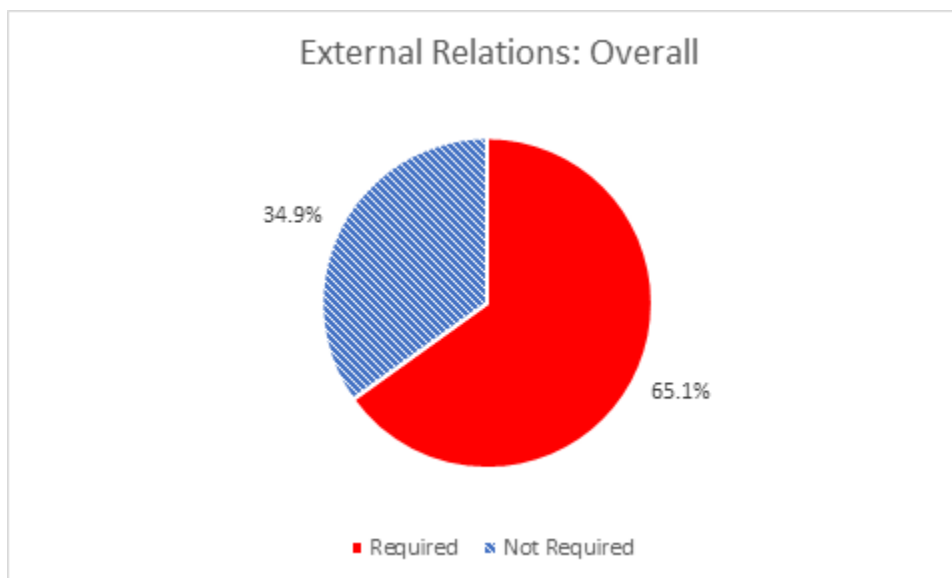


Figure 66

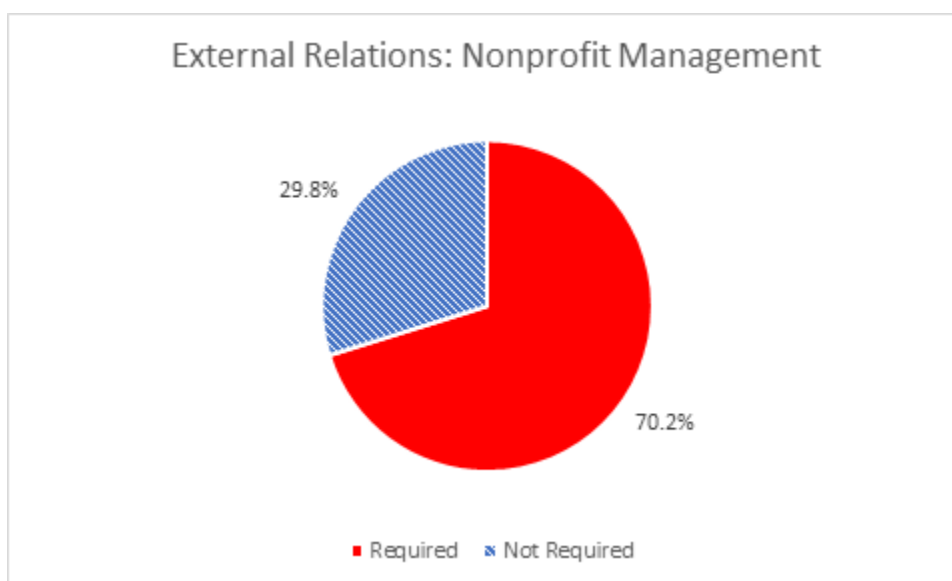
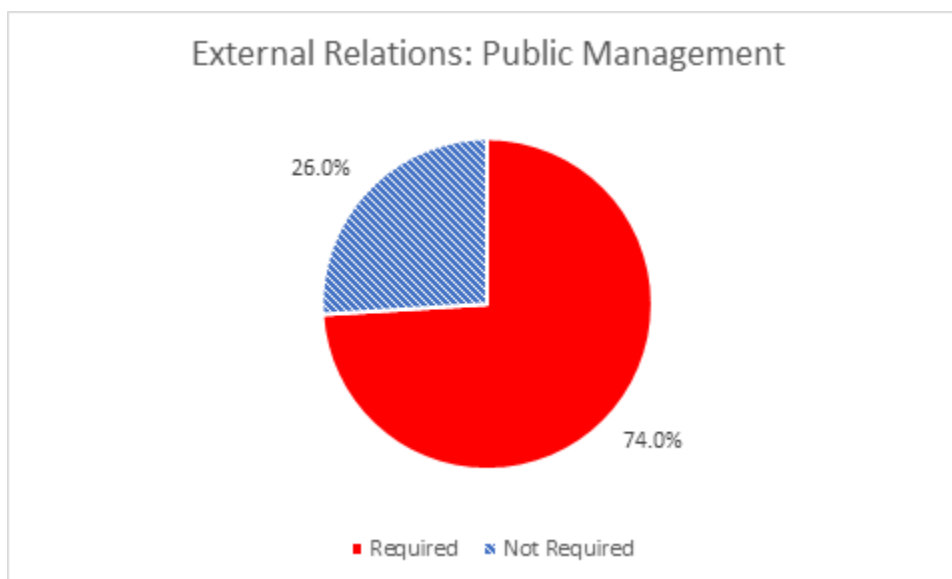
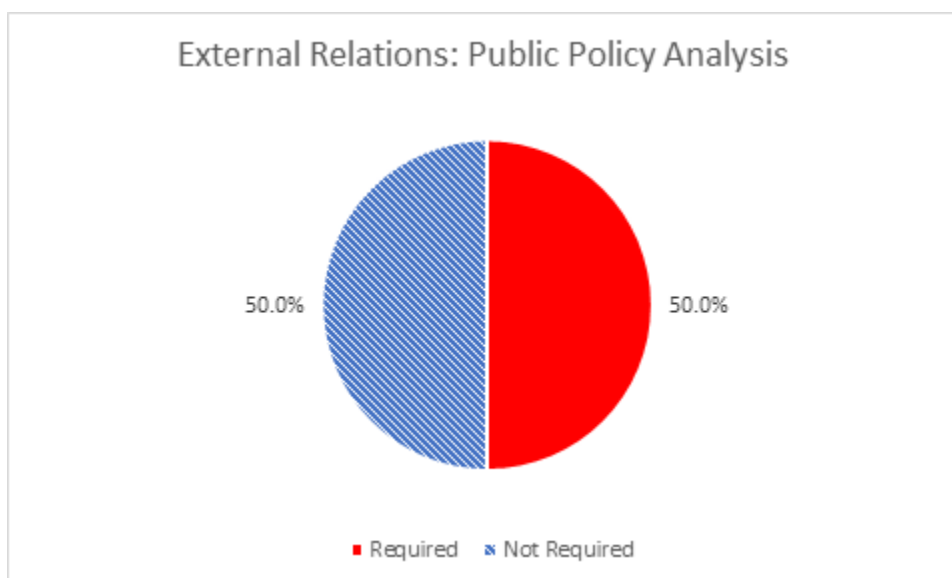


Figure 67**Figure 68**

Fundraising

The variable for fundraising includes skills primarily related to fundraising, donor relations, and board relations. Figure 69 indicates 47 (20.0%) job advertisements in the sample require fundraising skills. Figures 70-72 indicate whether fundraising skills were required by job advertisements, separated by Bush School track:

- Figure 70 *Nonprofit Management*: 39.4% (41 out of 104)
- Figure 71 *Public Management*: 6.9% (5 out of 73)
- Figure 72 *Public Policy Analysis*: 6.5% (7 out of 108)

This variable was found in a substantial minority of Public Management and Public Policy Analysis job advertisements but had near 40% prevalence among Nonprofit Management job advertisements.

Figure 69

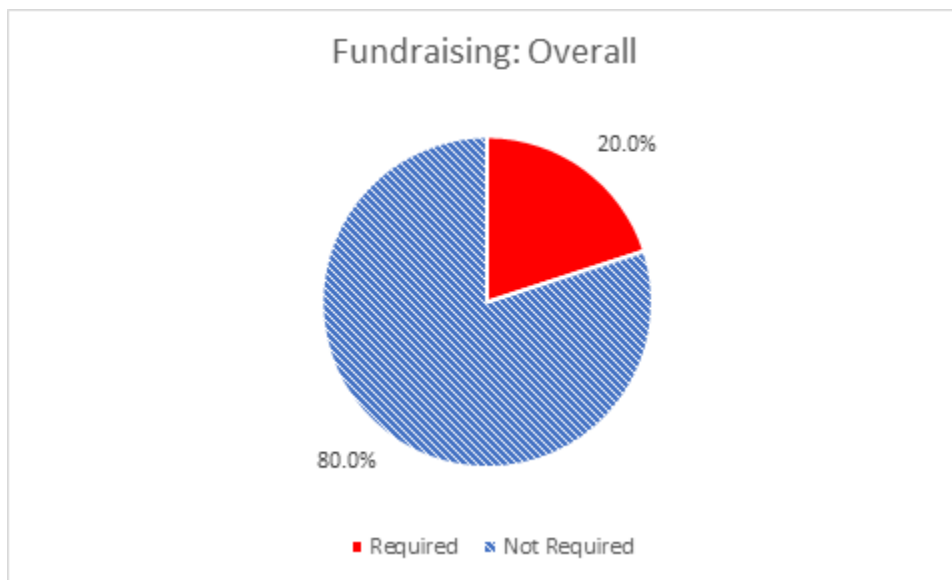


Figure 70

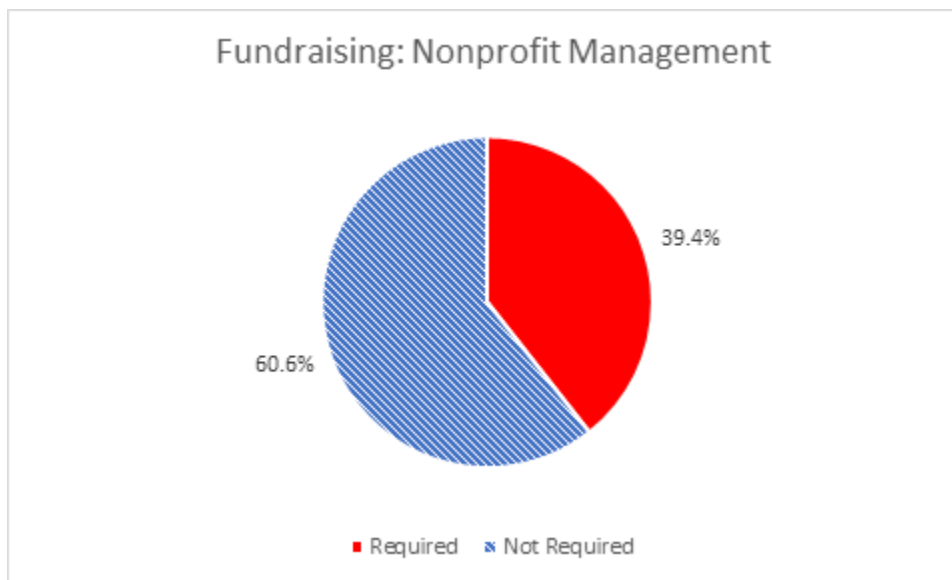


Figure 71

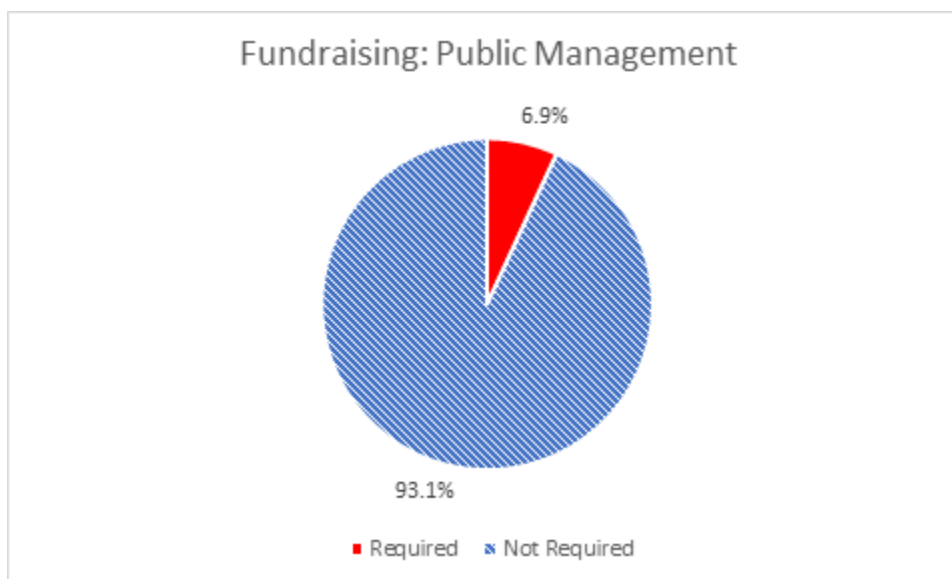
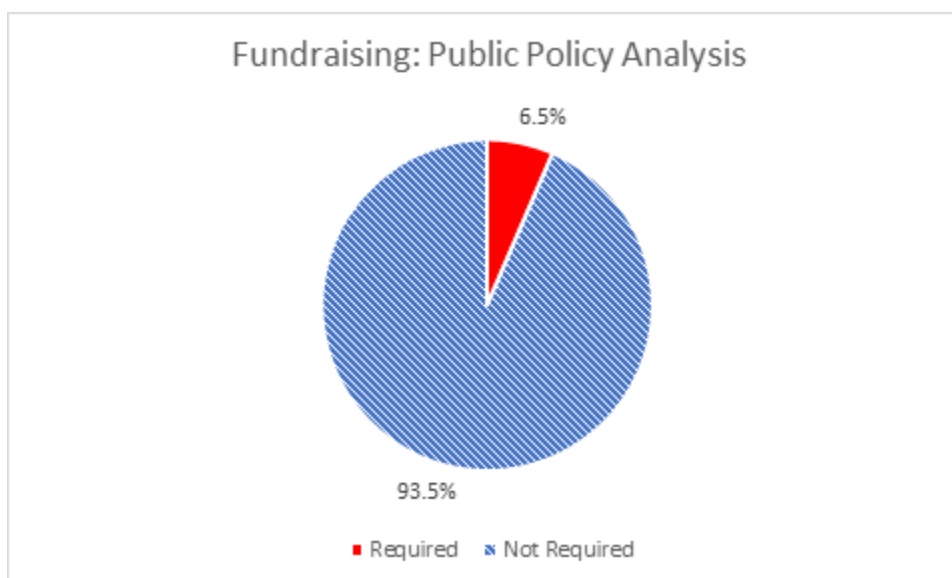


Figure 72



Program Evaluation/Accountability

The variable for program evaluation/accountability includes skills primarily related to evaluating programs and ensuring programs maintain compliance and meet standards for accountability. Figure 73 indicates 49 (20.9%) job advertisements in the sample require program evaluation and/or accountability skills. Figures 74-76 indicate whether program evaluation and/or accountability skills were required by job advertisements, separated by Bush School track:

- Figure 74 *Nonprofit Management*: 17.3% (18 out of 104)
- Figure 75 *Public Management*: 28.8% (21 out of 73)

- Figure 76 *Public Policy Analysis*: 20.4% (22 out of 108)

This variable was found in a minority of all job advertisements, but had the greatest prevalence among Public Management job advertisements.

Figure 73

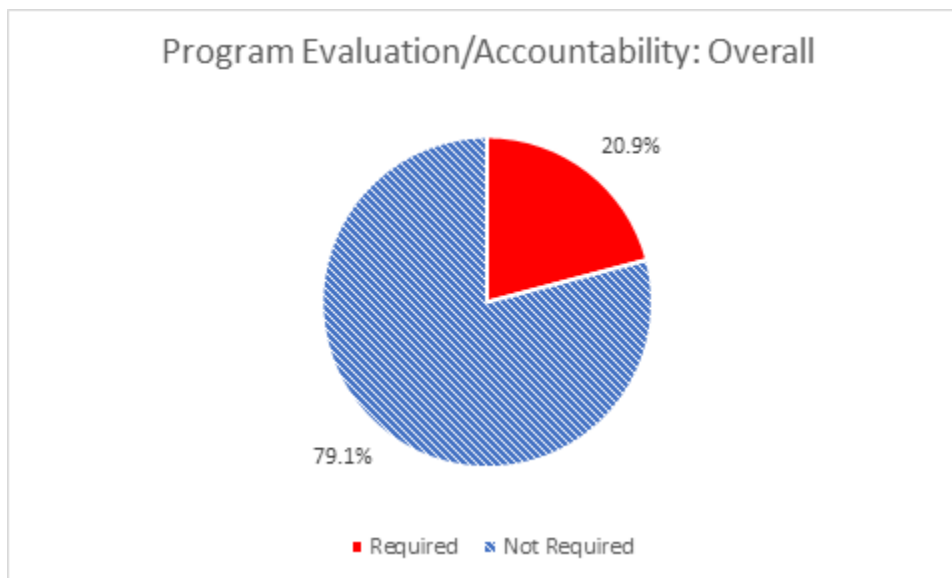


Figure 74

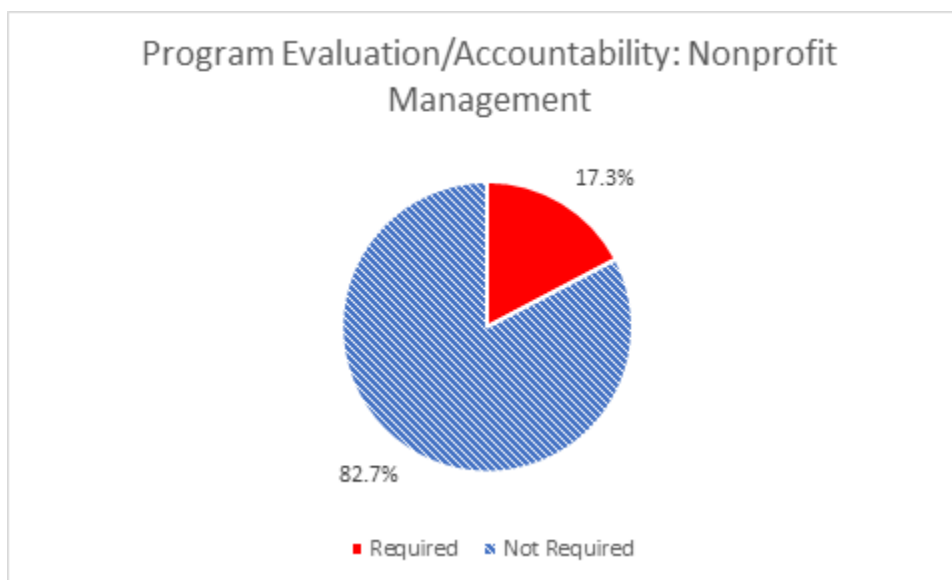


Figure 75

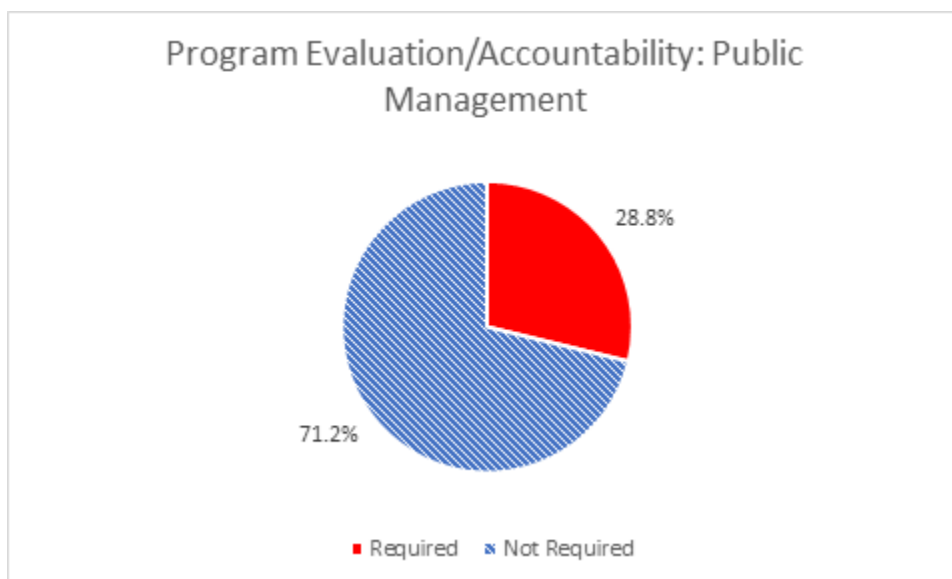
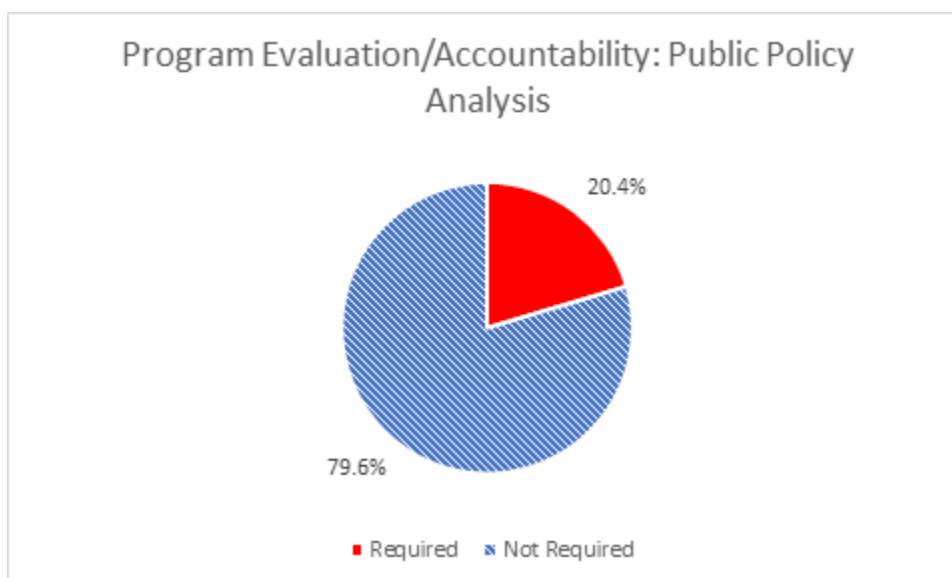


Figure 76



Organizational/Business Strategy

The variable for organizational/business strategy includes establishing priorities, goals, plans, and strategies for a business or organization's success. Figure 77 indicates 54 (23.0%) job advertisements in the sample require organizational and/or business strategy skills. Figures 78-80 indicate whether organizational and/or business strategy skills were required by the job advertisements, separated by Bush School track:

- Figure 78 *Nonprofit Management*: 19.2% (20 out of 104)
- Figure 79 *Public Management*: 43.8% (32 out of 73)

- Figure 80 *Public Policy Analysis*: 21.3% (23 out of 108)

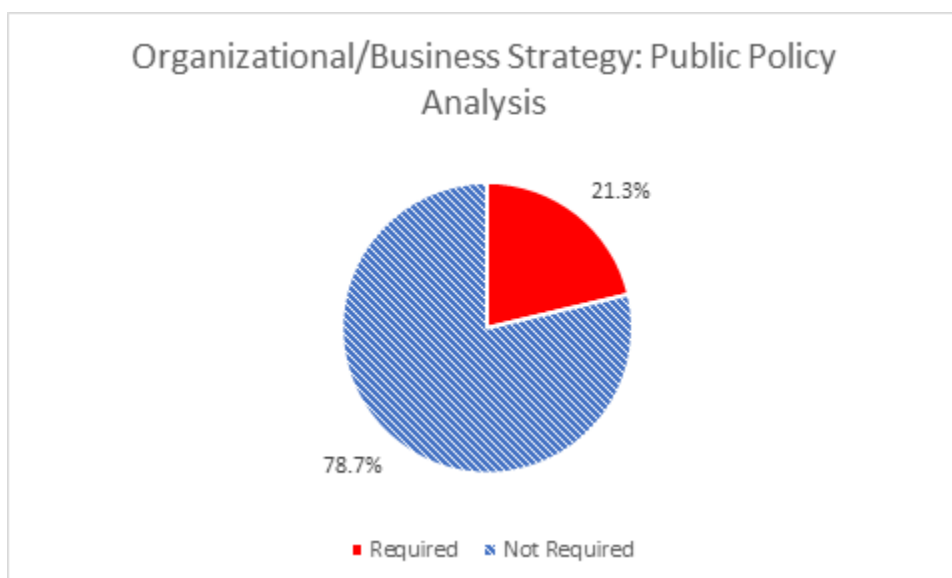
This variable was most prevalent among Public Management job advertisements.

Figure 77



Figure 78



Figure 79**Figure 80**

Discussion

The most requested skills among all job advertisements, by frequency:

- Advanced Written Communication Skills: 75.7%
- External Relations: 65.1%
- Research/Report Skills: 62.6%
- Non-people management: 58.7%

Listed below are the skills most frequently requested for each track:

Nonprofit Management

- Advanced Written Communication: 70.2%
- External Relations: 70.2%
- Internal Relations: 53.9%
- Non-People Management: 52.9%
- Research/Report Skills: 50.0%
- Grant writing/Grant Experience: 42.3%

Public Management

- Internal Relations: 79.5%
- External Relations: 74.0%
- Non-People Management: 78.1%
- Advanced Written Communication: 68.5%
- Research/Report Skills: 56.2%

Public Policy Analysis

- Advanced Written Communication: 86.1%
- Research/Report Skills: 79.6%
- Data Skills: 64.8%
- Non-People Management: 53.7%
- Internal Relations: 51.8%
- External Relations: 50.0%

According to the data, employers favor skills related to advanced written communication, external relations, research and reporting on research, and project and/or program management, for all tracks. To further these skills at the Bush School, professors can ensure advanced writing and research is embedded into the curriculum for the required core courses. Capstone and internship can develop external relations and project management skills, however emphasis on these skills in other courses could also add value for students.

For the Public Policy Analysis track, data skills can be prioritized in both quantitative methods courses and other policy track electives. This could encourage application of learning across

subject areas. For the Public Management track, internal relations skills can be capitalized on in required courses and electives. Internal relations include skills related to management or supervision of people, leadership, and coordination among departments. For the Nonprofit Management track, adding a greater emphasis on internal relations and grant-writing to the curriculum could be of great benefit to students as they apply for jobs.

Job Advertisements by Government Level & Location

In searching for job advertisements to include in the sample, the research team focused on finding jobs that MPSA graduates would likely be searching for. The government level and location of the job were not considered in selecting job advertisements for the sample. However, a comparison can be drawn between the government level data for this research project and the employment data collected by career services for the Class of 2020. Figure 81 shows the job advertisements from the sample separated by government level.

Government level comparison

State & Local Government

Skillz group results: 18.3% (43 out of 235)

Class of 2020: 38%

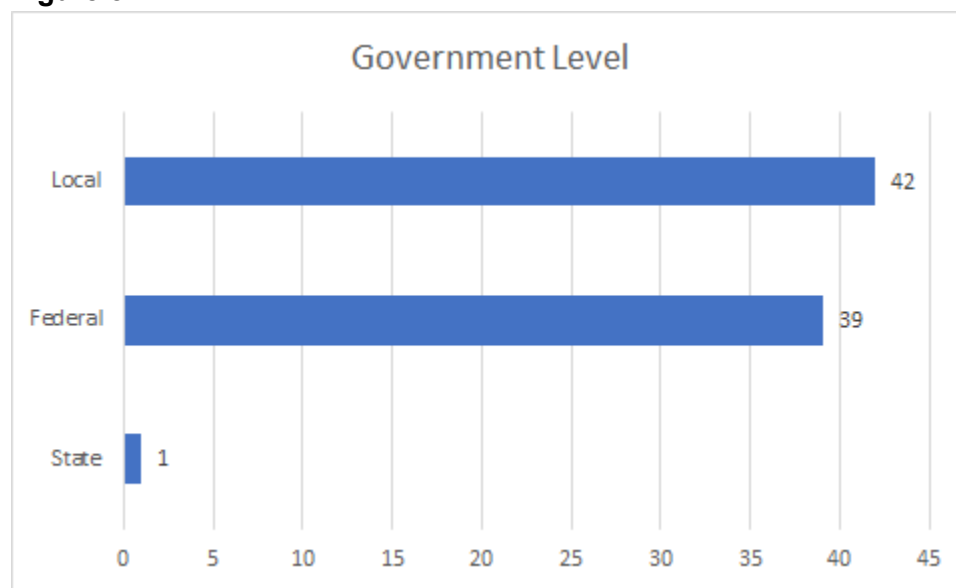
Federal Government

Skillz group results: 16.6% (39 out of 235)

Class of 2020: 11%

31 Public Management job advertisements overlapped with another track. This could be a reason why the number of state and local government jobs in the sample are low when compared to the actual number of state and local government jobs the Class of 2020 obtained.

Figure 81



Job location data was not collected by Career Services for the class of 2020 but the research team collected data on job location for all the job advertisements in the sample. Looking at the location of jobs can provide greater understanding of the prevalence of some variables such as security clearance and foreign language. Figure 82 shows the job advertisements from the sample separated by location.

Location (Skillz Group Results)

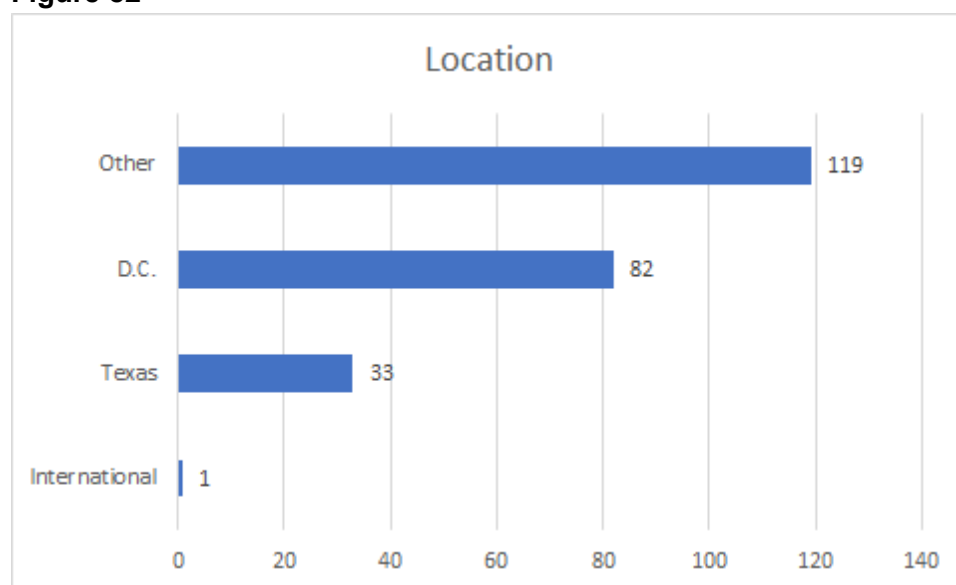
Other: 50.6% (119 out of 235)

Washington D.C.: 34.9% (82 out of 235)

Texas: 14.0% (33 out of 235)

International: 0.0% (1 out of 235)

Figure 82



Overlapping Tracks

If a job advertisement required skills that could be present among multiple Bush School tracks, more than one track was coded as present. The following information pertains to trends in skills among job advertisements that fit more than one track.

Public Management & Nonprofit Management: 4.7% (11 out of 235)

- Program evaluation and grant management
- Strategic relationships with stakeholders
- Program management
- Activity coordination

Public Policy Analysis & Nonprofit Management: 6.4% (15 out of 235)

- Grant management and policy related activities
- Advocacy
- Outreach with stakeholders

- Mission driven policy positions (i.e. human trafficking, race and equity, etc.)

Public Policy Analysis & Public Management: 8.5% (20 out of 235)

- Collaboration with public and private sectors
- Budget formulation and recommendation of budget policy
- Identifying and reviewing policy practices and procedures
- May include the word “analyst” at a state or local level of government

All three tracks: 0.0 % (2 out of 235)

- Grant management, policy related activities, non-people management, internal/external relations, and/or data skills

Caveats

In reflection, the research team compiled various caveats to consider when reading this report and when using the data for decision making.

When collecting data from advertisements, the research team only marked a variable as present if it was explicitly stated within the job advertisement. Data collection was more consistent with less left up to interpretation. However, some job advertisements were very brief, such as those on the ICMA website. Other job advertisements had ambiguous language and didn't explicitly state many skills. Had the team interpreted what skills would likely be required for a particular job, the data for some tracks, especially the Public Management track, might look different.

Many federal government job advertisements do not list specific education or experience requirements, they merely mention what General Schedule (GS) level it is. The research team did not look at the GS together before coding job advertisements. This led to some job advertisements in the sample that exceeded the education and experience level of MPSA graduates. These job advertisements were reviewed and taken out of the sample.

Only full-time jobs advertisements were coded, considering the higher likelihood that students will be seeking out full-time employment versus an internship upon graduation. Full-time jobs, internships or fellowships were not included unless they required a master's degree.

The research team did not use randomization in selecting job advertisements. Their selection was based upon likelihood that a MPSA student would apply to that job. Undeniably, bias was involved in the selection of this sample. The team found it challenging to choose appropriate jobs for the Nonprofit Management and Public Management tracks, as all of the team members are on the Public Policy Analysis track. Thus, there are fewer Nonprofit Management and Public Management job advertisements included in the sample.

The team primarily collected job advertisements from March-April 2021, with a few collected from May-June 2021. All were collected during the COVID-19 pandemic, when many were still working remotely. The pandemic could have impacted the number and type of job advertisements available, and the skills employers were looking for. The information gathered

from this experiment still contributes to an understanding of skills desired from employers, but the state of the world at this time is likely different than it will be during future experiments.

Future Recommendations

This project was not without its flaws. Early on in the project, the group sought wisdom to clarify goals and create a plan. In the beginning, the team searched for studies to conceptualize the project and create a clear question to answer, but precedent was lacking. The team started fresh and it took a few weeks to solidify a plan before data collection could begin. For the future, the research team recommends thoughtful questions and group planning time to create goals and structure early on.

Project Startup Recommendations

- Embrace the broad nature of the project early and form internal structure instead of seeking external structure.
- Establish purpose and roles immediately.
- Find more research to use as reference.

Project Process Recommendations

- Begin data collection as early as possible. If possible, begin collecting job advertisements immediately, with the understanding that some jobs will be thrown out over time.
- Create a method to randomize the job advertisements viewed. This is a challenge when part of the research is searching for job advertisements that fit the requirements of jobs for MPSA graduates. However, finding a way to introduce a level of randomization will increase the validity of the findings.
- Consider doing the project again in a few years when a pandemic is not affecting the job market and see if/how it affects data.
- When working with a group, working together in person is a more effective way of meeting rather than zoom.
- Consider contacting employers who have a vague job advertisement to learn more about what is required.
- Have each person keep a time sheet with a record of work for accountability and to ensure some are not lifting heavier than others.

Data analysis recommendations

- Lowercase variable names.
- Run an entire analysis with the preliminary dataset
- Consider using Qualtrics instead of Google Forms.
- Break apart variables into dummy variables unless team members are skilled in working with string variables.

Variable Recommendations

- Include expected salary and/or GS level as a variable(s).
- Consider separating courses required and certifications required.
- Separate fundraising/donor relations and board relations into two separate variables.

Conclusion

This research project identified the skills that MPSA students may need to be competitive applicants upon graduation. The data serves to support the Bush School faculty and staff as they make decisions regarding curriculum, to help ensure skills requested by employers are targeted in their courses. For the future, research teams can focus on a longer study to capture the cyclical nature of job postings. The research team developed skills in coding, data management, data analysis, and group work through this mini-capstone experience. Though the data are not perfect, the team expects it can still inform the curriculum.

References

- Chiara Succi & Magali Canovi (2020) Soft skills to enhance graduate employability: comparing students and employers' perceptions, *Studies in Higher Education*, 45:9, 1834-1847, DOI: 10.1080/03075079.2019.1585420

Appendices

Appendix A Charge Memo

MEMORANDUM

TO: Bush 635 Mini-Capstone Skills group

THROUGH: Dr. Joanna Lahey
Bush School of Government and Public Service

FROM: Dr. Lori L. Taylor, PSAA Department Head
Bush School of Government and Public Service

SUBJECT: Capstone charge

DATE: January 17, 2021

The MPSA program is accredited by the National Association of Schools of Public Affairs and Administration (NASPAA, <http://www.naspaa.org/>). NASPAA program accreditation requirements involve, among other elements, the preparation of a self-study report and a site visit by a team of outside reviewers.

As part of that self-study process, we are responsible for evaluating our performance with regard to the seven NASPAA required competencies. Instructions for completing the self-study can be found here <https://www.naspaa.org/sites/default/files/docs/2019-11/2019%20Self-Study%20Instructions%20FINAL.pdf>

As part of the self-study process, the Bush School will be called upon to document how we ensure the ongoing alignment of our mission, purpose, values, and the community we serve. The charge to your Capstone is to survey job ads for interns and recent graduates to determine what skills employers are currently requesting for students from our three tracks: Management, Non-Profit, and Policy. Your analysis will be used primarily to inform the PSAA department regarding curricular alignment issues, and to document any unmet personnel needs among potential employers of Bush School students. This analysis is not intended to measure the extent to which our students embody the skills and knowledge required; rather you are charged with identifying the requirements.

Appendix B

Bush School Track Guide

Nonprofit Management Track

Become a 21st century principled leader in the field of Nonprofits & Philanthropy with our [top-20 ranked](#) master's degree.

The Nonprofit Management (NPM) Track provides students with an understanding of the role of the nonprofit sector as it has evolved and the distinctive character of nonprofit management and the challenges it must address. Discussions include the variation of structures and activities of assorted nonprofit organizations. It also examines development, political activities, and other dimensions of the relationship between nonprofit organizations and their environments.



Nonprofit Management Courses

Nonprofit Management Track Core Courses (Both required):

- PSAA 632: Fiscal Management of Nonprofits
- PSAA 644: Management and Leadership of Nonprofits

Nonprofit Management Track Electives: (Choose two):

- PSAA 603: Nongovernmental Management in International Settings
- PSAA 626: Contract Management
- PSAA 631: Marketing for Nonprofits
- PSAA 633: Philanthropy and Fundraising in Nonprofits
- PSAA 635: Social Welfare and Health Policy
- PSAA 636: Grant and Project Mgmt. in Public and Nonprofit Sectors
- PSAA 645: Networks and Inter-organizational Collaborations
- PSAA 648: Performance Management in Public and Nonprofit Sectors
- PSAA 649: Volunteer and Human Resource Management
- PSAA 650: Social Innovation and Entrepreneurship
- PSAA 669: Legal Environment of Nonprofit Organizations

The Public Policy Analysis (PPA) track offers students an in-depth understanding of how decision makers can assess policy choices. It includes a consideration of why government should or should not take action in response to particular problems. It also familiarizes students with specific evaluative techniques such as cost-benefit analysis, cost-effectiveness analysis, and risk assessment. Students have numerous opportunities to apply what they learn to current policy issues.

In 2020, the Public Policy master's program was ranked [no. 25 in the nation](#) by *U.S. News & World Report*, 2020.

Public Policy Analysis Courses

Public Policy Analysis Track Core Courses (Both required):

- PSAA 615: Public Policy Analysis
- PSAA 622: Public Finance

Public Policy Analysis Track Electives (Choose two):

- PSAA 605: Homeland Security Policies and Strategies
- PSAA 606: Environmental Policy and Management
- PSAA 613: Immigration and Education Policy
- PSAA 614: Governance and Institutional Reform: A Comparative Perspective
- PSAA 616: Managing Diversity in Public and Nonprofit Organizations
- PSAA 617: U.S. State and Local Government: Institutions and Policy
- PSAA 618: Education Policy
- PSAA 619: U.S. Urban Policy and Management
- PSAA 625: Urban Sustainability and Management
- PSAA 635: Social Welfare and Health Policy
- PSAA 637: Decision Making in Government and Administration
- PSAA 638: Health Economics and Public Policy
- PSAA 640: Energy and Security Policy
- PSAA 671: Science and Technology Policy
- PSAA 689: Markets and Government
- INTA 625: International Trade Policy
- INTA 651: National Security Policy
- PLAN 616: Analyzing Risk/Hazard and Public Policy

The Public Management (PM) track focuses on the capabilities required for effective and ethical leadership in the public and nonprofit sectors. These include knowledge and skills pertaining to the internal operation of public-service organizations and to the relationship between those organizations and their operating environments.

In 2020, the Public Management master's program was ranked [no. 21 in the nation](#) by *U.S. News & World Report*, 2020.



Public Management Courses

Public Management Track Core Courses (Both required)

- PSAA 623: Budgeting in Public Service
- PSAA 634: Public Management

Public Management Track Electives (Choose two):

- PSAA 602: Tools for Advancement and Leadership
- PSAA 604: Emergency Management and Homeland Security
- PSAA 606: Environmental Policy and Management
- PSAA 608: Cyber Security for Managers
- PSAA 610: Comparing Domestic and International Organizations
- PSAA 614: Governance and Institutional Reform: A Comparative Perspective
- PSAA 616: Managing Diversity in Public and Nonprofit Organizations
- PSAA 619: U.S. Urban Policy and Management
- PSAA 625: Urban Sustainability and Management
- PSAA 626: Contract Management
- PSAA 630: Program Evaluation (if not used as a Quant. Methods II requirement)
- PSAA 636: Grant and Project Mgmt. in Public and Nonprofit Sectors
- PSAA 637: Decision Making in Government and Public Service
- PSAA 641: Organizational Theory for the Public Sector
- PSAA 642: Ethics and Public Policy
- PSAA 644: Management and Leadership of Nonprofit Organizations
- PSAA 646: Accountability in Public Service
- PSAA 648: Performance Management in Public and Nonprofit Sectors
- PSAA 661: Human Resource Mgmt. in Government and Public Service
- PSAA 670: Public Information Management Systems

Appendix C

Final Job Advertisement Survey

Skillz Group Job Ad Coding Survey



Form description

What is your *

Short answer text

Number of Job *

Short answer text

Job *

Short answer text

Bush School *

- ☐ Public Policy Analysis
- ☐ Nonprofit Management
- ☐ Public Management
- ☐ Not Specified

Years of *

1. No Experienced Required
2. Minimum Experience (1 - 3 years)
3. Moderate Experience (4 - 6 years)
4. Advanced Experience (6+ years)

Degree- *

- ☐ No Degree Required
- ☐ Bachelors Degree
- ☐ Master's Degree
- ☐ PhD
- ☐ JD/Law Degree
- ☐ Not Specified

Soft Skills *

- ☐ Methodological Skills
- ☐ Social Skills
- ☐ Personal Skills
- ☐ Not Specified

Competency of Software *

- ☐ Stata
- ☐ SPSS
- ☐ SAS
- ☐ R
- ☐ Python
- ☐ C++
- ☐ Excel
- ☐ Microsoft Suite (excluding Excel)
- ☐ CRM
- ☐ Tableau
- ☐ Not Specified
- ☐ Other...

Language Skills/Foreign Language Fluency *

- ☐ Spanish
- ☐ Arabic
- ☐ Chinese
- ☐ Hindi
- ☐ Russian
- ☐ Japanese
- ☐ French
- ☐ No Foreign Language Experience Preferred
- ☐ Other...

Course or Certification *

- ☐ Quantitative Methods I or II
- ☐ Program Evaluation
- ☐ Economics
- ☐ Finance
- ☐ Project Management Certification
- ☐ None specified
- ☐ Other...

Security Clearance *

- ☐ 0
- ☐ 1
- ☐ Other...

Data Skills: Data Mining, Data Analysis, Data *

- ☐ 0
- ☐ 1
- ☐ Other...

Grant-Experience/Grant- *

- ☐ 0
- ☐ 1
- ☐ Other...

Finance Skills: Budgeting, Budget Planning, Forecasting, Tax *

- ☐ 0
- ☐ 1
- ☐ Other...

Advanced Written Communication *

- ☐ 0
- ☐ 1
- ☐ Other...

Specialty Writing *

...

- ☐ None specified
- ☐ Data/Analytical/Quantative Reports
- ☐ Policy Briefs
- ☐ Policy Memos
- ☐ White Paper
- ☐ Policy Writing Infographic
- ☐ Analytical Papers
- ☐ Other...

Presentation *

- ☐ 0
- ☐ 1
- ☐ Other...

Research/Report *

- ☐ 0
- ☐ 1
- ☐ Other...

Contract Experience (i.e. Contract Management, Contract Negotiation, *)

- ☐ 0
- ☐ 1
- ☐ Other...

Subject-Based

- ☐ Defense
- ☐ Government Process
- ☐ Policy
- ☐ Non-Profit
- ☐ Environment
- ☐ Health
- ☐ Immigration
- ☐ Law
- ☐ Education
- ☐ Cybersecurity
- ☐ Energy
- ☐ Technology
- ☐ Homeland Security
- ☐ INGOs
- ☐ Lobbying
- ☐ Advocacy
- ☐ None Specified
- ☐ Other...

Social Media Experience (i.e. Content Creation, Social Media Analytics,

- ☐ 0
- ☐ 1
- ☐ Other...

Organizational Strategy/Business *

☐ 0

☐ 1

☐ Other...

Additional

Short answer text

Appendix D

IRB

For this study, an IRB was not necessary since the study did not involve human subjects.

Appendix E

Soft Skills Framework

Table 1

Category	Skill
Personal	1. Being Committed to Work – make a commitment to the organization and understand its specific characteristics
	2. Being Professionally Ethical – take actions while bearing in mind the principles and ethics of the profession in daily activities
	3. Being Tolerant to Stress – show endurance in complicated or stressful situations
	4. Creativity/Innovation Skills – contribute new ideas to develop improvements in the products or services of the organization as well as in the activities performed in the job
	5. Learning Skills – provide a self-assessment of necessary knowledge (theoretical or practical) and take measures to acquire and implement this knowledge
	6. Life Balance Skills – manage successfully the frequent conflicts between life and work
	7. Self-Awareness Skills – grasp our real weaknesses and strengths
Social	8. Communication Skills – transmit ideas, information and opinions clearly and convincingly, both verbally and in writing, while listening
	9. Conflict Management & Negotiation Skills –conciliate different opinions to reach an agreement that satisfies everyone
	10. Contact Network Skills – develop, maintain, and foster contacts
	11. Culture Adaptability Skills – carry out managerial and entrepreneurial processes in multicultural environments
	12. Leadership Skills – motivate and guide others to get them to contribute effectively
	13. Team-Work Skills – to build relationships based on participation and cooperation with other people
Methodological	14. Adaptability to Change Skills – redirect the course of action to meet goals in a new situation
	15. Analysis Skills – draw conclusions and forecasts for the future by acquiring relevant information from different sources
	16. Continuous Improvement Skills – perform the activities, duties and responsibilities inherent to the job under quality standards and strive for excellence
	17. Customer/User Orientation Skills – identify, understand and satisfy efficiently the needs of customers
	18. Decision Making Skills – make the decisions necessary to achieve objectives quickly and proactively
	19. Management Skills – set goals and priorities through the selection and distribution of tasks and resources
	20. Results Orientation Skills – make organizational efforts profitable while having always in mind the goals pursued

Appendix F

Software Skills

"Other" Software	Frequency
Email Marketing Platforms	1
Event Registration Platforms	1
Social Media Management Software	1
Media Monitoring Software	1
Fleet Management Software	1
HTML coding	1
CAD	1
Nonprofit Management Software	1
WordPress	1
Information Technology	1
Talent/Recruiting Software	1
Cloud Compliance Tracking Software	1
Google Suite	1
Chart/Diagram Software	2
Design Software	2
Donor Software	2
Government Cloud Software	2
Expense/Admin Software	2
Adobe	2
Relational Database Management Software	2
Grant Management Software	2

Appendix G

Specialty Writing Skills

"Other" Specialty Writing Skills	Frequency
Blog Posts	5
Gift Proposals	4
Budget Proposals	3
Issue Briefs	3
Reports	2
Position Papers	1
Letters of Intent	1
Membership Appeals	1
Creative Writing	1
Deeds/Rehab Proposals	1
Congressional Testimony	1
Policy Recommendations	1
Hearing Books	1
National News Releases	1

RFQs/RFPs

1

Appendix H**Subject-Based Knowledge**

"Other" Subject-Based Knowledge	Frequency
Race Issues/Discrimination	5
Community Development/Urban Planning	5
War Studies/Veteran Affairs	4
Volunteer Management/Engagement	3
Human Trafficking/Sexual Assault Prevention	3
Art History/Museum Industry	3
Lobbying	3
Immigration	3
Fundraising/Major Gifts	2
Marketing	2
Emergency Preparedness/EMS	2
Climate	1
Events	1
Tax Policy	1
Media	1
Engineering	1
Food Safety	1
Social Justice	1
Qualitative & Quantitative Methods	1
Animal Welfare	1
Mastery of Specific Geographic Location	1
Space	1
Family Needs	1

Appendix I**Do File Code**

```

tab yrsxp if ppa==1
tab yrsxp if npm==1
tab yrsxp if pm==1
tab bachelor
tab master
tab phd
tab degree_unspecified
tab spanish
tab arabic
tab chinese
tab hindi
tab russian
tab japanese

```

```

tab french
tab nolanguage
tab language_other
tab security if ppa==1
tab security if npm==1
tab security if pm==1
tab data if ppa==1
tab data if npm==1
tab data if pm==1
tab grant if ppa==1
tab grant if npm==1
tab grant if npm==1
tab grant if pm==1
tab finance if ppa==1
tab finance if npm==1
tab finance if pm==1
tab advwritten if ppa==1
tab advwritten if npm==1
tab advwritten if pm==1
tab present if ppa==1
tab present if npm==1
tab present if pm==1
gen researchreport= research_skill*policy_know
tab researchreport
tab researchreport if ppa==1
tab researchreport if npm==1
tab researchreport if pm==1
tab contract if ppa==1
tab contract if npm==1
tab contract if pm==1
tab defense_know
tab gov_know
tab policy_know
tab np_know
tab environment_know
tab health_know
tab immigrant_know
tab law_know
tab educ_know
tab cyber_know
tab energy_know
tab tech_know
tab home_know
tab ingo_know
tab lobby_know
tab advocate_know
tab none_know
tab other_know
tab socialxp if ppa==1
tab socialxp if npm==1
tab socialxp if pm==1
tab intrrelations if ppa==1
tab intrrelations if npm==1
tab intrrelations if pm==1
tab manage if ppa==1

```

```

tab manage if npm==1
tab manage if pm==1
tab extrelations if ppa==1
tab extrelations if npm==1
tab extrelations if pm==1
tab fund_skill if ppa==1
tab fund_skill if npm==1
tab fund_skill if pm==1
tab programeval_skill if ppa==1
tab programeval_skill if npm==1
tab programeval_skill if pm==1
tab orgstrat_skill if ppa==1
tab orgstrat_skill if npm==1
tab orgstrat_skill if pm==1
tab spss if ppa==1
tab tab sas if ppa==1
tab r if ppa==1
tab python if ppa==1
tab cplus if ppa==1
tab excel if ppa==1
tab microsoftsuite if ppa==1
tab crm if ppa==1
tab tableau if ppa==1
tab software_unspecified if ppa==1
tab software_other if ppa==1
tab stata if npm==1
tab python if npm==1
tab crm if npm==1
tab tableau if npm==1
tab sas if npm==1
tab software_unspecified if npm==1
tab r if npm==1
tab excel if npm==1
tab microsoftsuite if npm==1
tab spss if npm==1
tab cplus if npm==1
tab software_other if npm==1
tab stata if pm==1
tab python if pm==1
tab crm if pm==1
tab tableau if pm==1
tab sas if pm==1
tab software_unspecified if pm==1
tab r if pm==1
tab excel if pm==1
tab microsoftsuite if pm==1
tab spss if pm==1
tab software_other if pm==1

```

Appendix J

Years of Experience

```
tab yrsxp
```

Years of Experience	Freq.	Percent	Cum.
No Experience	65	27.66	27.66
Minimum Experience (1-3 yrs)	125	53.19	80.85
Moderate Experience (4-6 yrs)	41	17.45	98.30
Advanced Experience (6+ yrs)	4	1.70	100.00
Total	235	100.00	

```
tab yrsxp if npm==1
```

Years of Experience	Freq.	Percent	Cum.
No Experience	26	25.00	25.00
Minimum Experience (1-3 yrs)	63	60.58	85.58
Moderate Experience (4-6 yrs)	14	13.46	99.04
Advanced Experience (6+ yrs)	1	0.96	100.00
Total	104	100.00	

```
tab yrsxp if pm==1
```

Years of Experience	Freq.	Percent	Cum.
No Experience	18	24.66	24.66
Minimum Experience (1-3 yrs)	36	49.32	73.97
Moderate Experience (4-6 yrs)	18	24.66	98.63
Advanced Experience (6+ yrs)	1	1.37	100.00
Total	73	100.00	

```
tab yrsxp if ppa==1
```

Years of Experience	Freq.	Percent	Cum.
No Experience	36	33.33	33.33
Minimum Experience (1-3 yrs)	49	45.37	78.70
Moderate Experience (4-6 yrs)	21	19.44	98.15
Advanced Experience (6+ yrs)	2	1.85	100.00
Total	108	100.00	

Degree-Level

```
tab degree if npm==1
```

Not Specified	Freq.	Percent	Cum.
Specified degree	88	84.62	84.62
Not specified degree	16	15.38	100.00
Total	104	100.00	

```
tab degree if pm==1
```

Not Specified	Freq.	Percent	Cum.
Specified degree	62	84.93	84.93
Not specified degree	11	15.07	100.00
Total	73	100.00	

```
tab degree if ppa==1
```

Not Specified	Freq.	Percent	Cum.
---------------	-------	---------	------

Specified degree		91	84.26	84.26
Not specified degree		17	15.74	100.00
Total		108	100.00	

Language Skills/Foreign Language Fluency Preferred

tab spanish				
spanish		Freq.	Percent	Cum.
No Spanish		221	94.04	94.04
Spanish		14	5.96	100.00
Total		235	100.00	

tab arabic				
arabic		Freq.	Percent	Cum.
No Arabic		234	99.57	99.57
Arabic		1	0.43	100.00
Total		235	100.00	

tab chinese				
chinese		Freq.	Percent	Cum.
No Chinese		235	100.00	100.00
Total		235	100.00	

tab hindi				
hindi		Freq.	Percent	Cum.
No Hindi		235	100.00	100.00
Total		235	100.00	

tab russian				
russian		Freq.	Percent	Cum.
No Russian		234	99.57	99.57
Russian		1	0.43	100.00
Total		235	100.00	

tab japanese				
japanese		Freq.	Percent	Cum.
No Japanese		235	100.00	100.00
Total		235	100.00	

tab french				
french		Freq.	Percent	Cum.
No French		232	98.72	98.72
French		3	1.28	100.00
Total		235	100.00	

tab nolanguage				
nolanguage		Freq.	Percent	Cum.

Language required	21	8.94	8.94
No language required	214	91.06	100.00
-----+			
Total	235	100.00	

tab language_other

Other	Freq.	Percent	Cum.
-----+			
No other language	230	97.87	97.87
Other language	5	2.13	100.00
-----+			
Total	235	100.00	

Security Clearance

tab security if npm==1

Security Clearance	Freq.	Percent	Cum.
-----+			
No security clearance	101	97.12	97.12
Security clearance	3	2.88	100.00
-----+			
Total	104	100.00	

. tab security if pm==1

Security Clearance	Freq.	Percent	Cum.
-----+			
No security clearance	63	86.30	86.30
Security clearance	10	13.70	100.00
-----+			
Total	73	100.00	

tab security if ppa==1

Security Clearance	Freq.	Percent	Cum.
-----+			
No security clearance	85	78.70	78.70
Security clearance	23	21.30	100.00
-----+			
Total	108	100.00	

Data Skills

tab data if npm==1

Data Skills:	Freq.	Percent	Cum.
-----+			
No data skills	66	63.46	63.46
Data skills	38	36.54	100.00
-----+			
Total	104	100.00	

tab data if pm==1

Data Skills:	Freq.	Percent	Cum.
-----+			
No data skills	39	53.42	53.42
Data skills	34	46.58	100.00
-----+			
Total	73	100.00	

tab data if ppa==1

Data Skills:	Freq.	Percent	Cum.
-----+			
No data skills	38	35.19	35.19
Data skills	70	64.81	100.00

Total	108	100.00
-------	-----	--------

Grant Skills

tab grant if npm==1

Grant			
Experience/Grant Writing	Freq.	Percent	Cum.
No grant skills	60	57.69	57.69
Grant skills	44	42.31	100.00
Total	104	100.00	

tab grant if pm==1

Grant			
Experience/Grant Writing	Freq.	Percent	Cum.
No grant skills	56	76.71	76.71
Grant skills	17	23.29	100.00
Total	73	100.00	

tab grant if ppa==1

Grant			
Experience/Grant Writing	Freq.	Percent	Cum.
No grant skills	92	85.19	85.19
Grant skills	16	14.81	100.00
Total	108	100.00	

Finance Skills

tab finance if npm==1

Finance Skills:	Freq.	Percent	Cum.
No finance skills	73	70.19	70.19
Finance skills	31	29.81	100.00
Total	104	100.00	

tab finance if pm==1

Finance Skills:	Freq.	Percent	Cum.
No finance skills	38	52.05	52.05
Finance skills	35	47.95	100.00
Total	73	100.00	

tab finance if ppa==1

Finance Skills:	Freq.	Percent	Cum.
No finance skills	76	70.37	70.37
Finance skills	32	29.63	100.00
Total	108	100.00	

Advanced Written Communication Skills

tab advwritten if npm==1

Advanced Written Communication Skills	Freq.	Percent	Cum.
-----+-----			
No advanced written communication	31	29.81	29.81
Advanced written communication	73	70.19	100.00
-----+-----			
Total	104	100.00	

tab advwritten if pm==1

Advanced Written Communication Skills	Freq.	Percent	Cum.
-----+-----			
No advanced written communication	23	31.51	31.51
Advanced written communication	50	68.49	100.00
-----+-----			
Total	73	100.00	

tab advwritten if ppa==1

Advanced Written Communication Skills	Freq.	Percent	Cum.
-----+-----			
No advanced written communication	15	13.89	13.89
Advanced written communication	93	86.11	100.00
-----+-----			
Total	108	100.00	

Specialty Writing Skills

tab specialwriting_none

Not Specified	Freq.	Percent	Cum.
-----+-----			
Specialty writing skills	93	39.57	39.57
No specialty writing skills	142	60.43	100.00
-----+-----			
Total	235	100.00	

tab report_write

Data/Analytical/Quantitative Reports	Freq.	Percent	Cum.
-----+-----			
No data/analytical/quant report writing	191	81.28	81.28
Data/analytical/quant report writing	44	18.72	100.00
-----+-----			
Total	235	100.00	

tab pbrief_write

Policy Brief Writing	Freq.	Percent	Cum.
-----+-----			
No policy brief writing	199	84.68	84.68
Policy brief writing	36	15.32	100.00
-----+-----			
Total	235	100.00	

tab pmem_write

Policy Memo Writing	Freq.	Percent	Cum.
-----+-----			
No policy memo writing	215	91.49	91.49

Policy memo writing	20	8.51	100.00
-----+-----			
Total	235	100.00	

tab whitepaper_write

White Paper Writing	Freq.	Percent	Cum.
-----+-----			
No white paper writing	231	98.30	98.30
White paper writing	4	1.70	100.00
-----+-----			
Total	235	100.00	

tab infographic_write

Policy Writing Infographic	Freq.	Percent	Cum.
-----+-----			
No policy writing infographic	230	97.87	97.87
Policy writing infographic	5	2.13	100.00
-----+-----			
Total	235	100.00	

tab analytical_write

Analytical Paper Writing	Freq.	Percent	Cum.
-----+-----			
No analytical paper writing	221	94.04	94.04
Analytical paper writing	14	5.96	100.00
-----+-----			
Total	235	100.00	

tab other_write

Other Writing	Freq.	Percent	Cum.
-----+-----			
No other writing	202	85.96	85.96
Other writing	33	14.04	100.00
-----+-----			
Total	235	100.00	

Presentation Skills

tab present if npm==1

Presentation Skills	Freq.	Percent	Cum.
-----+-----			
No presentation skills	70	67.31	67.31
Presentation skills	34	32.69	100.00
-----+-----			
Total	104	100.00	

tab present if pm==1

Presentation Skills	Freq.	Percent	Cum.
-----+-----			
No presentation skills	42	57.53	57.53
Presentation skills	31	42.47	100.00
-----+-----			
Total	73	100.00	

tab present if ppa==1

Presentation Skills	Freq.	Percent	Cum.
-----+-----			
No presentation skills	62	57.41	57.41

Presentation skills	46	42.59	100.00
-----+-----			
Total	108	100.00	

Research/ Report Skills

tab research if npm==1

Research/Report Skills	Freq.	Percent	Cum.
-----+-----			
No research/report skills	52	50.00	50.00
Research/report skills	52	50.00	100.00
-----+-----			
Total	104	100.00	

tab research if pm==1

Research/Report Skills	Freq.	Percent	Cum.
-----+-----			
No research/report skills	32	43.84	43.84
Research/report skills	41	56.16	100.00
-----+-----			
Total	73	100.00	

tab research if ppa==1

Research/Report Skills	Freq.	Percent	Cum.
-----+-----			
No research/report skills	22	20.37	20.37
Research/report skills	86	79.63	100.00
-----+-----			
Total	108	100.00	

Contract Experience (i.e. Contract Management, Contract Negotiation, Contract Writing)

tab contract if npm==1

Contract			
Experience	Freq.	Percent	Cum.
-----+-----			
No contract skills	99	95.19	95.19
Contract skills	5	4.81	100.00
-----+-----			
Total	104	100.00	

tab contract if pm==1

Contract			
Experience	Freq.	Percent	Cum.
-----+-----			
No contract skills	64	87.67	87.67
Contract skills	9	12.33	100.00
-----+-----			
Total	73	100.00	

tab contract if ppa==1

Contract			
Experience	Freq.	Percent	Cum.
-----+-----			
No contract skills	104	96.30	96.30
Contract skills	4	3.70	100.00
-----+-----			
Total	108	100.00	

Subject-Based Knowledge

tab defense_know

Defense Knowledge	Freq.	Percent	Cum.
No defense knowledge	221	94.04	94.04
Defense knowledge	14	5.96	100.00
Total	235	100.00	

tab gov_know

Government Process Knowledge	Freq.	Percent	Cum.
No government process knowledge	176	74.89	74.89
Government process knowledge	59	25.11	100.00
Total	235	100.00	

tab policy_know

Policy Knowledge	Freq.	Percent	Cum.
No policy knowledge	178	75.74	75.74
Policy knowledge	57	24.26	100.00
Total	235	100.00	

tab np_know

Nonprofit knowledge	Freq.	Percent	Cum.
No nonprofit knowledge	211	89.79	89.79
Nonprofit knowledge	24	10.21	100.00
Total	235	100.00	

tab environment_know

Environmental Knowledge	Freq.	Percent	Cum.
No environmental knowledge	228	97.02	97.02
Environmental knowledge	7	2.98	100.00
Total	235	100.00	

tab health_know

Health Knowledge	Freq.	Percent	Cum.
No health knowledge	222	94.47	94.47
Health knowledge	13	5.53	100.00
Total	235	100.00	

tab immigrant_know

Immigration Knowledge	Freq.	Percent	Cum.
No immigration knowledge	232	98.72	98.72

Immigration knowledge	3	1.28	100.00
-----+-----			
Total	235	100.00	

tab law_know

Law Knowledge	Freq.	Percent	Cum.
-----+-----			
No law knowledge	212	90.21	90.21
Law Knowledge	23	9.79	100.00
-----+-----			
Total	235	100.00	

tab educ_know

Education Knowledge	Freq.	Percent	Cum.
-----+-----			
No education knowledge	230	97.87	97.87
Education knowledge	5	2.13	100.00
-----+-----			
Total	235	100.00	

tab cyber_know

Cybersecurity Knowledge	Freq.	Percent	Cum.
-----+-----			
No cybersecurity knowledge	228	97.02	97.02
Cybersecurity knowledge	7	2.98	100.00
-----+-----			
Total	235	100.00	

tab energy_know

Energy Knowledge	Freq.	Percent	Cum.
-----+-----			
No energy knowledge	233	99.15	99.15
Energy knowledge	2	0.85	100.00
-----+-----			
Total	235	100.00	

tab tech_know

Technology knowledge	Freq.	Percent	Cum.
-----+-----			
No technology knowledge	231	98.30	98.30
Technology knowledge	4	1.70	100.00
-----+-----			
Total	235	100.00	

tab home_know

Homeland Security Knowledge	Freq.	Percent	Cum.
-----+-----			
No homeland security knowledge	229	97.45	97.45
Homeland security knowledge	6	2.55	100.00
-----+-----			
Total	235	100.00	

tab ingo_know

INGO Knowledge	Freq.	Percent	Cum.
-----+-----			
No INGO knowledge	234	99.57	99.57

INGO knowledge	1	0.43	100.00
-----+-----			
Total	235	100.00	

tab lobby_know

Lobbying Knowledge	Freq.	Percent	Cum.
-----+-----			
No lobbying knowledge	232	98.72	98.72
Lobbying knowledge	3	1.28	100.00
-----+-----			
Total	235	100.00	

tab advocate_know

Advocacy Knowledge	Freq.	Percent	Cum.
-----+-----			
No advocacy knowledge	217	92.34	92.34
Advocacy knowledge	18	7.66	100.00
-----+-----			
Total	235	100.00	

tab none_know

No Subject-Based Knowledge	Freq.	Percent	Cum.
-----+-----			
Subject-based knowledge specified	180	76.60	76.60
No subject-based knowledge specified	55	23.40	100.00
-----+-----			
Total	235	100.00	

Social Media Experience

tab socialxp

Social Media	Freq.	Percent	Cum.
-----+-----			
No social media skills	209	88.94	88.94
Social media skills	26	11.06	100.00
-----+-----			
Total	235	100.00	

tab socialxp if npm==1

Social Media	Freq.	Percent	Cum.
-----+-----			
No social media skills	85	81.73	81.73
Social media skills	19	18.27	100.00
-----+-----			
Total	104	100.00	

tab socialxp if pm==1

Social Media	Freq.	Percent	Cum.
-----+-----			
No social media skills	68	93.15	93.15
Social media skills	5	6.85	100.00
-----+-----			
Total	73	100.00	

tab socialxp if ppa==1

Social Media	Freq.	Percent	Cum.
-----+-----			
No social media skills	102	94.44	94.44
Social media skills	6	5.56	100.00

```
-----+-----
Total |          108          100.00
```

Internal Relations

```
tab intrelations if npm==1
```

```
Internal Relations |          Freq.      Percent      Cum.
-----+-----
No internal relations skills |          48      46.15      46.15
  Internal relations skills |          56      53.85     100.00
-----+-----
Total |          104      100.00
```

```
tab intrelations if pm==1
```

```
Internal Relations |          Freq.      Percent      Cum.
-----+-----
No internal relations skills |          15      20.55      20.55
  Internal relations skills |          58      79.45     100.00
-----+-----
Total |           73      100.00
```

```
tab intrelations if ppa==1
```

```
Internal Relations |          Freq.      Percent      Cum.
-----+-----
No internal relations skills |          52      48.15      48.15
  Internal relations skills |          56      51.85     100.00
-----+-----
Total |          108      100.00
```

Non-People Management

```
tab manage if npm==1
```

```
Non-People Management |          Freq.      Percent      Cum.
-----+-----
No non-people management skills |          49      47.12      47.12
  Non-people management skills |          55      52.88     100.00
-----+-----
Total |          104      100.00
```

```
tab manage if pm==1
```

```
Non-People Management |          Freq.      Percent      Cum.
-----+-----
No non-people management skills |          16      21.92      21.92
  Non-people management skills |          57      78.08     100.00
-----+-----
Total |           73      100.00
```

```
tab manage if ppa==1
```

```
Non-People Management |          Freq.      Percent      Cum.
-----+-----
No non-people management skills |          50      46.30      46.30
  Non-people management skills |          58      53.70     100.00
-----+-----
Total |          108      100.00
```

External Relations

```
. tab extrelations if npm==1
```

```
External Relations |          Freq.      Percent      Cum.
-----+-----
No external relations skills |          31      29.81      29.81
  External relations skills |          73      70.19     100.00
-----+-----
Total |          104      100.00
```

```
. tab extrelations if pm==1
```

```
External Relations |          Freq.      Percent      Cum.
```

-----+-----			
No external relations skills	19	26.03	26.03
External relations skills	54	73.97	100.00
-----+-----			
Total	73	100.00	
-----+-----			
tab extrelations if ppa==1			
External Relations	Freq.	Percent	Cum.
-----+-----			
No external relations skills	54	50.00	50.00
External relations skills	54	50.00	100.00
-----+-----			
Total	108	100.00	

Fundraising Skills

. tab fund_skill if npm==1			
Fundraising, Donor Relations,			
Board Relations	Freq.	Percent	Cum.
-----+-----			
Fundraising Skills Not Required	63	60.58	60.58
Fundraising Skills Required	41	39.42	100.00
-----+-----			
Total	104	100.00	

. tab fund_skill if pm==1			
Fundraising, Donor Relations,			
Board Relations	Freq.	Percent	Cum.
-----+-----			
Fundraising Skills Not Required	68	93.15	93.15
Fundraising Skills Required	5	6.85	100.00
-----+-----			
Total	73	100.00	

tab fund_skill if ppa==1			
Fundraising, Donor Relations,			
Board Relations	Freq.	Percent	Cum.
-----+-----			
Fundraising Skills Not Required	101	93.52	93.52
Fundraising Skills Required	7	6.48	100.00
-----+-----			
Total	108	100.00	

Program Evaluation/Accountability Required

tab programeval_skill if npm==1			
Program Evaluation/Accountability	Freq.	Percent	Cum.
-----+-----			
No program evaluation/accountability sk	86	82.69	82.69
Program evaluation/accountability skill	18	17.31	100.00
-----+-----			
Total	104	100.00	

tab programeval_skill if pm==1			
Program Evaluation/Accountability	Freq.	Percent	Cum.
-----+-----			
No program evaluation/accountability sk	52	71.23	71.23
Program evaluation/accountability skill	21	28.77	100.00
-----+-----			
Total	73	100.00	

tab programeval_skill if ppa==1			
Program Evaluation/Accountability	Freq.	Percent	Cum.
-----+-----			
No program evaluation/accountability sk	86	79.63	79.63
Program evaluation/accountability skill	22	20.37	100.00

Total	108	100.00
-------	-----	--------

Organizational Strategy/Business Strategy

tab orgstrat_skill if npm==1

Organizational Strategy/Business Strategy	Freq.	Percent	Cum.
No organizational/business strategy ski	84	80.77	80.77
Organizational/business strategy skills	20	19.23	100.00
Total	104	100.00	

tab orgstrat_skill if pm==1

Organizational Strategy/Business Strategy	Freq.	Percent	Cum.
No organizational/business strategy ski	41	56.16	56.16
Organizational/business strategy skills	32	43.84	100.00
Total	73	100.00	

tab orgstrat_skill if ppa==1

Organizational Strategy/Business Strategy	Freq.	Percent	Cum.
No organizational/business strategy ski	85	78.70	78.70
Organizational/business strategy skills	23	21.30	100.00
Total	108	100.00	

Software Skills

tab stata

stata	Freq.	Percent	Cum.
No Stata	227	96.60	96.60
Stata	8	3.40	100.00
Total	235	100.00	

tab spss

spss	Freq.	Percent	Cum.
No SPSS	231	98.30	98.30
SPSS	4	1.70	100.00
Total	235	100.00	

tab sas

sas	Freq.	Percent	Cum.
No SAS	232	98.72	98.72
SAS	3	1.28	100.00
Total	235	100.00	

tab r

r	Freq.	Percent	Cum.
---	-------	---------	------

No R	226	96.17	96.17
R	9	3.83	100.00
Total	235	100.00	

tab python

python	Freq.	Percent	Cum.
No python	232	98.72	98.72
Python	3	1.28	100.00
Total	235	100.00	

tab cplus

C+	Freq.	Percent	Cum.
No C+	234	99.57	99.57
C+	1	0.43	100.00
Total	235	100.00	

tab excel

excel	Freq.	Percent	Cum.
No Excel	191	81.28	81.28
Excel	44	18.72	100.00
Total	235	100.00	

tab microsoftsuite

Microsoft Suite (excluding Excel)	Freq.	Percent	Cum.
No Microsoft Suite (excluding Excel)	159	67.66	67.66
Microsoft Suite (excluding Excel)	76	32.34	100.00
Total	235	100.00	

tab crm

Customer Relationship Management	Freq.	Percent	Cum.
No CRM	216	91.91	91.91
CRM	19	8.09	100.00
Total	235	100.00	

tab tableau

tableau	Freq.	Percent	Cum.
No Tableau	234	99.57	99.57
Tableau	1	0.43	100.00
Total	235	100.00	

tab software_unspecified

Not Specified	Freq.	Percent	Cum.
-----+-----			
Software Specified	104	44.26	44.26
Software Unspecified	131	55.74	100.00
-----+-----			
Total	235	100.00	

tab software_other

Other	Freq.	Percent	Cum.
-----+-----			
No other software	198	84.26	84.26
Other software	37	15.74	100.00
-----+-----			
Total	235	100.00	

tab stata if npm==1

stata	Freq.	Percent	Cum.
-----+-----			
No Stata	102	98.08	98.08
Stata	2	1.92	100.00
-----+-----			
Total	104	100.00	

tab python if npm==1

python	Freq.	Percent	Cum.
-----+-----			
No python	103	99.04	99.04
Python	1	0.96	100.00
-----+-----			
Total	104	100.00	

tab crm if npm==1

Customer Relationship Management	Freq.	Percent	Cum.
-----+-----			
No CRM	85	81.73	81.73
CRM	19	18.27	100.00
-----+-----			
Total	104	100.00	

tab tableau if npm==1

tableau	Freq.	Percent	Cum.
-----+-----			
No Tableau	103	99.04	99.04
Tableau	1	0.96	100.00
-----+-----			
Total	104	100.00	

tab sas if npm==1

sas	Freq.	Percent	Cum.
-----+-----			
No SAS	102	98.08	98.08
SAS	2	1.92	100.00
-----+-----			
Total	104	100.00	

tab software_unspecified if npm==1

Not Specified	Freq.	Percent	Cum.
-----+-----			

Software Specified	58	55.77	55.77
Software Unspecified	46	44.23	100.00

-----+-----			
Total	104	100.00	

tab r if npm==1

r	Freq.	Percent	Cum.
-----+-----			
No R	102	98.08	98.08
R	2	1.92	100.00

-----+-----			
Total	104	100.00	

tab excel if npm==1

excel	Freq.	Percent	Cum.
-----+-----			
No Excel	81	77.88	77.88
Excel	23	22.12	100.00

-----+-----			
Total	104	100.00	

tab microsoftsuite if npm==1

Microsoft Suite (excluding Excel)	Freq.	Percent	Cum.
-----+-----			
No Microsoft Suite (excluding Excel)	62	59.62	59.62
Microsoft Suite (excluding Excel)	42	40.38	100.00

-----+-----			
Total	104	100.00	

tab spss if npm==1

spss	Freq.	Percent	Cum.
-----+-----			
No SPSS	102	98.08	98.08
SPSS	2	1.92	100.00

-----+-----			
Total	104	100.00	

tab cplus if npm==1

C+	Freq.	Percent	Cum.
-----+-----			
No C+	103	99.04	99.04
C+	1	0.96	100.00

-----+-----			
Total	104	100.00	

tab software_other if npm==1

Other	Freq.	Percent	Cum.
-----+-----			
No other software	84	80.77	80.77
Other software	20	19.23	100.00

-----+-----			
Total	104	100.00	

tab python if pm==1

python	Freq.	Percent	Cum.
-----+-----			
No python	73	100.00	100.00

-----+-----			
Total	73	100.00	

tab stata if pm==1

stata	Freq.	Percent	Cum.
-----+-----			
No Stata	72	98.63	98.63
Stata	1	1.37	100.00

-----+-----			
-------------	--	--	--

```

Total |          73      100.00

tab crm if pm==1
  Customer |
  Relationshi |
  p |
  Management |          Freq.      Percent      Cum.
-----+-----
    No CRM |          72      98.63      98.63
    CRM |          1      1.37     100.00
-----+-----
    Total |          73     100.00

tab tableau if pm==1
  tableau |          Freq.      Percent      Cum.
-----+-----
  No Tableau |          73     100.00     100.00
-----+-----
    Total |          73     100.00

tab sas if pm==1
  sas |          Freq.      Percent      Cum.
-----+-----
  No SAS |          72      98.63      98.63
  SAS |          1      1.37     100.00
-----+-----
    Total |          73     100.00

tab software_unspecified if pm==1
  Not Specified |          Freq.      Percent      Cum.
-----+-----
  Software Specified |          20      27.40      27.40
  Software Unspecified |          53      72.60     100.00
-----+-----
    Total |          73     100.00

tab r if pm==1
  r |          Freq.      Percent      Cum.
-----+-----
  No R |          73     100.00     100.00
-----+-----
    Total |          73     100.00

tab excel if pm==1
  excel |          Freq.      Percent      Cum.
-----+-----
  No Excel |          67      91.78      91.78
  Excel |          6       8.22     100.00
-----+-----
    Total |          73     100.00

tab microsoftsuite if pm==1
  Microsoft Suite (excluding Excel) |          Freq.      Percent      Cum.
-----+-----
  No Microsoft Suite (excluding Excel) |          55      75.34      75.34
  Microsoft Suite (excluding Excel) |          18      24.66     100.00
-----+-----
    Total |          73     100.00

tab spss if pm==
  spss |          Freq.      Percent      Cum.
-----+-----
  No SPSS |          73     100.00     100.00
-----+-----

```

```

Total |          73      100.00

tab cplus if pm==1
  C+ |      Freq.      Percent      Cum.
-----+-----
  No C+ |          73      100.00      100.00
-----+-----
  Total |          73      100.00

tab software_other if pm==1
  Other |      Freq.      Percent      Cum.
-----+-----
No other software |          63      86.30      86.30
  Other software |          10      13.70      100.00
-----+-----
  Total |          73      100.00

tab stata if ppa==1
  stata |      Freq.      Percent      Cum.
-----+-----
  No Stata |         102      94.44      94.44
  Stata |           6       5.56      100.00
-----+-----
  Total |         108      100.00

tab spss if ppa==1
  spss |      Freq.      Percent      Cum.
-----+-----
  No SPSS |         106      98.15      98.15
  SPSS |           2       1.85      100.00
-----+-----
  Total |         108      100.00

tab sas if ppa==1
  sas |      Freq.      Percent      Cum.
-----+-----
  No SAS |         108      100.00      100.00
-----+-----
  Total |         108      100.00

tab tableau if ppa==1
-----+-----
No Tableau |         107 |         107
  Tableau |           1 |           1
-----+-----
  Total |         108 |         108

tab r if ppa==1
  r |      Freq.      Percent      Cum.
-----+-----
  No R |         100      92.59      92.59
  R |           8       7.41      100.00
-----+-----
  Total |         108      100.00

tab python if ppa==1
  python |      Freq.      Percent      Cum.
-----+-----
  No python |         105      97.22      97.22
  Python |           3       2.78      100.00
-----+-----
  Total |         108      100.00

```

```
tab cplus if ppa==1
```

C+	Freq.	Percent	Cum.
No C+	108	100.00	100.00
Total	108	100.00	

```
tab excel if ppa==1
```

excel	Freq.	Percent	Cum.
No Excel	84	77.78	77.78
Excel	24	22.22	100.00
Total	108	100.00	

```
tab microsoftsuite if ppa==1
```

Microsoft Suite (excluding Excel)	Freq.	Percent	Cum.
No Microsoft Suite (excluding Excel)	78	72.22	72.22
Microsoft Suite (excluding Excel)	30	27.78	100.00
Total	108	100.00	

```
tab crm if ppa==1
```

Customer Relationship Management	Freq.	Percent	Cum.
No CRM	106	98.15	98.15
CRM	2	1.85	100.00
Total	108	100.00	

```
tab tableau if ppa==1
```

tableau	Freq.	Percent	Cum.
No Tableau	107	99.07	99.07
Tableau	1	0.93	100.00
Total	108	100.00	

```
tab software_unspecified if ppa==1
```

Not Specified	Freq.	Percent	Cum.
Software Specified	45	41.67	41.67
Software Unspecified	63	58.33	100.00
Total	108	100.00	

```
tab software_other if ppa==1
```

Other	Freq.	Percent	Cum.
No other software	94	87.04	87.04
Other software	14	12.96	100.00
Total	108	100.00	