Course Syllabus

Course:	PUAD 605.01 Quantitative Methods for Public Managers
Department:	Department of Public Administration and Policy, SPA
Semester:	Fall 2014
Instructor:	Anna A. Amirkhanyan, Ph.D.
Session times:	Wednesdays 5:30 – 8:10 PM
Location:	Ward 103

INSTRUCTOR CONTACT INFORMATION

Office: Ward, 324
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Instructor's Phone: (202) 885-6289
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Office Hours: By appointment
Note: I prefer to be contacted via email.
Tutor: See the handout distributed in class

COURSE OBJECTIVES AND LEARNING OUTCOMES

The objective of this course is to learn how to use statistics as a tool in analyzing the problems and questions of public administration.

In this class, you will gain
   (a) understanding of the critical statistical concepts and techniques;
   (b) proficiency in collecting, presenting, describing and making inferences from quantitative data;
   (c) familiarity with SPSS, a software for statistical analysis and graphical presentation of data;
   (d) experience in writing reports based on statistical analysis that help inform and resolve issues in the field of public administration and public policy.

This class has a strong practical component. It involves weekly homework exercises, real-life data analysis and quantitative analysis report writing. It also incorporates the traditional teaching techniques, such as lectures, exams, quizzes, and in-class exercises. Analytical skills developed throughout this course will assist you in building your careers as public managers and policy analysts.

Most of our sessions will have the following components:
   1. Class outline;
   2. Motivation: importance of the topic;
   3. Definitions of major concepts and techniques;
   4. Step-by-step explanation of how to perform all computations;
   5. Step-by-step explanation of how to interpret the obtained information;
   6. Brief discussion of the methods' applications to the problems of public administration and public policy;
   7. SPSS application workshop and interpretation of SPSS outputs;
   8. An occasional review of typical problems that will be encountered during the midterm and final exams;
   9. Occasional self-evaluation quizzes (multiple-choice, _not_ graded and intended for students to identify areas for improvement).
   10. Team work on the term paper project in the classroom or in the computer lab.

READINGS
Students will use the following texts, available for purchase from the university bookstore:

Required: 1. Healey, J.H. (2011) Statistics. A tool for social research. 9th Edition. Thompson, Wadsworth. **Please, have this book with you in the classroom.**

Recommended: Research articles, assigned to each session (usually, one or two per session) have been posted on the Blackboard web site (in the "Research Articles" folder, as indicated in the Course Outline section of this syllabus). You do **not** need to purchase them. Download them directly from the Blackboard and read before each session. Robert H. Carver, Jane Gradwohl Nash Doing Data Analysis with SPSS. The most recent edition. ISBN: 053446551X.

PREREQUISITES
There are no formal prerequisites for this course. However, you will need basic arithmetic skills. Reviewing the "*Prologue: Basic Mathematics Review"* on page XXIII of your textbook (i.e., Healey's "Statistics") is recommended.

GRADING
The course grade will be based on the following items:
1. **10 homework assignments** (20% of the final grade, 2% each)
2. **Midterm examination** (30% of the final grade)
3. **Final examination** (30% of the final grade)
4. **Term paper: Quantitative analysis report and presentation** (report 15%, presentation 5%)

LETTER GRADE	4.0 Scale	PERCENTAGE EQUIVALENTS USED IN GRADING
A+ (Excellent)	4.0	97-100% correct
A (Excellent)	4.0	94-96.99% correct
A-	3.7	90-93.99% correct
B+	3.3	87-89.99% correct
B (Good)	3.0	84-86.99% correct
B-	2.7	80-83.99% correct
C+	2.3	77-79.99% correct
C (Satisfactory)	2.0	74-76.99% correct
C-	1.7	70-73.99% correct
D (Poor)	1.0	60-69.99% correct
F (Failure)	0	Below 59.99% correct

HOMEWORK

You will have 10 short homework assignments as a part of this course. All homework assignments, taken together, are worth 20 percent of the final grade. A perfect grade for each homework is 2.00 (i.e., 2 percentage points of the final grade). Homework's must be turned in in the beginning of each session on the due date.

Failure to submit an assignment on the due date will result in a 25% decline in the assignment grade per day. For instance, if done correctly, an assignment submitted two days after the deadline will be worth only 1.00 (instead of 2.00), i.e., you will observe a 50% reduction in the assignment grade as a result of the 2-day delay). Please, contact the instructor as soon as possible if you have a serious health-related or family-related issue.

EXAMINATIONS

In this course, you are required to take one Midterm and one Final (non-cumulative) exam. Each exam is worth 30% of the final grade. Thus, a perfect grade for each exam is 30.00. Both exams are in-class, closed-book and closed-notes. You will need a pen, a pencil, an eraser and a calculator. You may prepare up to two (2) sheets of clearly written formulas to be used during the exam. No other information can be included on these sheets. You may not communicate with other students during the exam, and you should not ask the instructor any substantive questions. If you have any clarification questions, feel free to ask the instructor.

Preparing a good formula sheet is extremely important. I do not recommend purchasing commercial formula sheets. Rather, take the time to prepare your own sheet. This process will help you further familiarize yourself with the computational procedures. All the formulas necessary for your exams will be covered by the instructor in her lectures and included in her power point slides. If you forget to include a formula in your sheet, your instructor will be unable to help you at the exam. Students may not use formula sheets prepared by other students.

Note: Please, contact the instructor *beforehand* if you have a valid reason (i.e., a *serious* health problem or family emergency) for missing an exam.

QUANTITATIVE ANALYSIS REPORT (Term paper)
In this course, students will write and present a quantitative report (a.k.a. "term paper") based on the analysis of qualitative data using SPSS. This is a semester-long project. Please, see **Appendix A** of the syllabus for more information on this assignment.

CLASS PARTICIPATION AND TECHNOLOGY USE
I expect students to attend all classes and to arrive on time. Quality participation is expected of each student. Students are expected to participate by asking questions as needed, answering instructor's questions and volunteering to solve in-class exercises on the board.

Please, turn of your cell phones during all class sessions. I also appreciate your avoidance of distractive practices such as web browsing on your personal laptops, excessive conversations with other students and other activities unrelated to the class.

Students may use their own laptop or the lab computer during weekly SPSS demonstrations (conducted in the SPA lab). I ask my students to refrain from using their personal laptops during lectures or in-class exercises. I recommend closing/turning off all personal computers as well as cell phones during lectures and exercises. This request is aimed at reducing web browsing, email checking and typing unrelated to the course. If anyone cannot take handwritten notes due to a health issue, please contact the AU's Academic Support Center (202-885-3360) or Disability Support Services (202-885-4415) and they will send me a letter about your specific needs and will designate a note-taker for you.

INSTRUCTOR'S ASSISTANCE AND STUDENTS' PERFORMANCE
Studying statistics is an exciting and challenging pursuit. I want all students to succeed in this course and will do my best to help them achieve their learning objectives and career aspirations. While I am here to help, it is critical that you keep up with your homework and your reading materials. Please, be advised, that it may be extremely difficult to move forward if you are not familiar with the materials covered during the previous class. If you need assistance or have any concerns about your performance, course content, or other matters, please do not hesitate to contact me immediately. Do not postpone sharing your concerns and difficulties until the last month/week/day of the course.   Please, note that I prefer to be contacted via email. If you need to consult me immediately, I may be available over the phone.

BLACKBOARD
A Blackboard web site has been set up for this course. All Power Point slides as well as the course syllabus and other supplemental materials will be posted there. I will use Blackboard as a tool to send out mass emails. Please, note that all messages will be sent to your AU email addresses. Therefore, you need to check it regularly, or, if you prefer using another email, make an arrangement to forward all your AU emails to the email account that you use frequently.

SPSS
In this course we will learn how to use SPSS, which is a statistical software for computer-based statistical analysis. Brief SPSS application workshops will be conducted at the end of each session. SPSS outputs will be reviewed and interpreted by the instructor. Students will be required to use SPSS to complete their projects. Please note that Healey's text provides a basic overview of SPSS, while Carver and Nash (recommended) is helpful for a more in-depth practical knowledge of SPSS.

Generally, this and other statistics courses at SPA are developed using the version of SPSS available in our computer labs. If you wish to obtain your own private copy of SPSS, it is available at the AU bookstore. "Student versions" of SPSS are generally cheaper and are

appropriate for this course. Be aware that the versions of SPSS obtained from private parties (e.g., on Ebay) may have defects (in addition to being illegally traded).

The instructor will conduct SPSS demonstrations in the SPA lab almost weekly. Occasionally, students will spend 20-30 minutes of the regular class time at the end of the session working on the projects in the lab with their teammates (instructor will be there approaching each team, answering questions and assisting with the data analysis).

For your projects, I encourage you to schedule additional group meeting and use SPSS in the computer labs (SPA lab or Hurst Hall #202). The SPA lab's daily schedule is posted under the following site (consider the SPA or Hurst Hall #202 labs first, however Andersen Computing Complex labs are available as well):
https://domino.american.edu/AU/Library/Anderson.nsf/BorderFrameL?OpenFrameSet
(you would need your AU login name and password to access this site). For questions on lab reservations and availability you can also contact Kevin Cedeno, Assistant Manager - Anderson Computing Complex at 202-885-6033. (You will need to log in using your my.american.edu login name and password, in order to see the schedule on this web site). Before scheduling a group meeting, students are advised to use this online schedule to make sure the lab is available (i.e., not reserved for a class or by another group).

Occasionally, we will also use Microsoft Excel to perform computations in class.

Please, bring a calculator to all sessions (a simple calculator will be sufficient, you do not need a calculator with any advanced statistical functions). You may use a calculator and/or Microsoft Excel to complete your homework assignments.

COURSE OUTLINE*

*You are required to complete the readings and written assignments prior to each class. All homework assignments are from the Healey textbook. If you are submitting a handwritten homework, please make sure your handwriting is neat and legible.
 Abbreviations used: "H" = Healey; "READ" - denotes required readings.

Session	Date	Topic	Assignment Due
1.	8/27	**LECTURE** Introduction to Statistics; The Role of Statistics in Public Administration Research Data, Variables. Overview of the course Introduction to SPSS in the classroom	**REQUIRED READING** Please, review "*Prologue: Basic Mathematics Review*" on page XXIII **OPTIONAL** Read "Article for Session 1" posted in the "Research Articles" folder on Blackboard. I offer several guidelines for your examination of this article. You do NOT need to submit anything to the instructor.
2.	9/3	**LECTURE** Descriptive statistics. Frequency distributions for nominal, ordinal and interval-ratio variables. Charts and graphs. **SPSS WORKSHOP** We will move from our usual classroom to the SPA COMPUTER LAB after the break.	**REQUIRED READING** **H.** Chapters 1 and 2; also read "SPSS for Windows" section at the end of chapter II in Healey. Read the project description in the syllabus (Appendix A). Please, download two data sets currently posted on Blackboard (the Nursing Home Compare Data and the General Social Survey Data) and save them on a flash drive or your AU student network drive to be able to access them during our SPSS demonstrations. You will not be able to participate in the SPSS demonstration, if you don't have access to these data sets. **REQUIRED TO SUBMIT: 1.5; 1.6 (e)** <u>In addition, a separate assignment handed in class</u>. NOTE: For 1.5 and 1.6 (e) you do NOT have to determine if the variables are continuous or discrete. Focus only on determining the level of measurement (nominal vs. ordinal vs. interval-ratio). **OPTIONAL** Read two articles "for Session 2" posted in the "Research Articles" folder on Blackboard. I offer several guidelines for your examination of these articles. You do NOT need to submit anything to the instructor.
3.	9/10	**LECTURE** Descriptive statistics. Measures of central tendency – mean, median, mode.	**REQUIRED READING** **H.** Chapter 3 Also read "SPSS for Windows" section at the end of the assigned chapter from **H**.

		SPSS WORKSHOP We will move from our usual classroom to the SPA COMPUTER LAB after the break.	**REQUIRED TO SUBMIT:** 2.2; 2.10; 2.12. Please, note that there are ten problems within 2.2 (i.e., (a) through (j).
4.	9/17	**LECTURE** Descriptive statistics (cont-d); Measures of dispersion – IQV, Range, IDR, Standard Deviation, Variance. **SPSS WORKSHOP** We will move from our usual classroom to the SPA COMPUTER LAB after the break.	**REQUIRED READING** **H.** Chapter 4 Also read "SPSS for Windows" section at the end of the assigned chapter from **H**. **REQUIRED TO SUBMIT:** 3.2; 3.4. **OPTIONAL** Read two articles "for Session 4" posted in the "Research Articles" folder on Blackboard. I offer several guidelines for your examination of these articles. You do NOT need to submit anything to the instructor.
5.	9/24	**LECTURE** The Normal Curve; Samples and Sampling **SPSS WORKSHOP** We will move from our usual classroom to the SPA COMPUTER LAB after the break..	**REQUIRED READING** **H.** Chapters 5 and Chapter 6 (read only till page 147, "three distributions…") **REQUIRED TO SUBMIT:** 4.2; 4.8; 4.14. **OPTIONAL** Read "Article for Session 5" posted in the "Research Articles" folder on Blackboard. I offer several guidelines for your examination of this article. You do NOT need to submit anything to the instructor.
6.	10/1	**LECTURE** Inferential statistics; Sampling Distribution. Estimation and Confidence Intervals.	**REQUIRED READING** **H.** Chapters 6 (pages 147-154) and Chapter 7 (skip section "Estimation Selection Criteria"). **REQUIRED TO SUBMIT**: 5.2; 5.10; 5.14;
7.	10/8	**MIDTERM EXAMINATION**	No homework. You may try to work on additional problems from your textbook white practicing for your midterm. You do not need to submit these two problems to the instructor.
8.	10/15	**LECTURE** Inferential statistics (cont-d); Hypothesis testing I: The One-sample test **SPSS WORKSHOP**	**REQUIRED READING** **H.** Chapter 8 **REQUIRED TO SUBMIT**: DRAFT QUANTITATIVE REPORT

		We will move from our usual classroom to the SPA COMPUTER LAB after the break.	
9.	10/22	**LECTURE** Inferential statistics (cont-d); Hypothesis testing II: The Two-sample test **SPSS WORKSHOP** We will move from our usual classroom to the SPA COMPUTER LAB after the break.	**REQUIRED READING** **H.** Chapter 9 Also read "SPSS for Windows" section at the end of the assigned chapter from **H**. **REQUIRED TO SUBMIT**: 8.10; 8.14.
10.	10/29	**LECTURE** Inferential statistics (cont-d); Analysis of Variance **SPSS WORKSHOP** We will move from our usual classroom to the SPA COMPUTER LAB after the break.	**REQUIRED READING** **H.** Chapter 10 Also read "SPSS for Windows" section at the end of the assigned chapter from **H**. **REQUIRED TO SUBMIT**: 9.4, 9.8, 9.12 (a and b). Note: For small samples and proportions, please, use the formula for proportions that we've reviewed in class (those for large samples), but do use the t-table to determine the Critical value. Using the formula for large samples for this specific homework is not going to change your answer much. **OPTIONAL** Read two articles "for Session 10" posted in the "Research Articles" folder on Blackboard. I offer several guidelines for your examination of these articles. You do NOT need to submit anything to the instructor.
11.	11/5	**LECTURE** Inferential statistics (cont-d); Chi-Square test: the test of independence. **SPSS WORKSHOP** We will move from our usual classroom to the SPA COMPUTER LAB after the break.	**REQUIRED READING** **H.** Chapter 11 **REQUIRED TO SUBMIT**: 10.6 and 10.7. Feel free to use Excel for your computations. **OPTIONAL** Read two articles "for Session 11" posted in the "Research Articles" folder on Blackboard. No need to submit anything to the instructor. Also read "SPSS for Windows" section at the end of the assigned chapter from **H**.
12.	11/12	**LECTURE**	**REQUIRED READING**

		Inferential statistics (cont-d); Association between interval-ratio variables. Bivariate Regression **SPSS WORKSHOP** We will move from our usual classroom to the SPA COMPUTER LAB after the break.	**H.** Chapter 14; Also read "SPSS for Windows" section at the end of the assigned chapter from **H**. **REQUIRED TO SUBMIT**: 11.3 (a and b), 11.7 (a and b). **OPTIONAL** Review **H. C**hapter 12.
13.	11/19	**LECTURE** Inferential statistics (cont-d); Multivariate Regression **SPSS WORKSHOP** We will move from our usual classroom to the SPA COMPUTER LAB after the break.	**REQUIRED READING** **H.** Chapter 15 (only sections "controlling for a third variable" and "where do control variables come from?") and **H.** Chapter 16. Also read "SPSS for Windows" section at the end of the assigned chapter from **H**. **REQUIRED TO SUBMIT**: 14.4 (There are three variables here; please, do two pairs of independent and dependent variables: % Dem's & Voter turnout % Minority & Voter Turnout and conduct your analysis for each of these two bivariate relationships. Compute the slope, the intercept, the R and R Square). **OPTIONAL** Read "Article for Session 13" posted in the "Research Articles" folder on Blackboard. I offer several guidelines for your examination of this article. You do NOT need to submit anything to the instructor.
	11/26	**THANKSGIVING BREAK. No class.**	
14.	12/3	1. Term Paper presentations 2. Final Exam Review session	**PREPARE:** Term Paper presentations **TERM PAPERS DUE TODAY**
15.	12/15	**FINAL EXAMINATION**	

ACADEMIC INTEGRITY

It is your responsibility to complete all homework assignments and examinations **on your own**. Feel free to discuss general ideas, concepts and techniques with the instructor, your classmates and colleagues. However, you must work individually on all in-class quizzes, homeworks, and examinations. Doing so will help you to assess your own level prior to examination and address knowledge gaps effectively.

You are expected to understand your rights and responsibilities as defined by the Academic Integrity Code (please, see http://www.american.edu/academics/integrity/index.htm and http://www.american.edu/american/registrar/AcademicReg/New/reg8010.html).
You may not consult any materials (books or your notes) during the Midterm and Final exams, other than your formula sheets. Any breaches of the Academic Integrity Code will be reported to the Department of Public Administration, and may result in a grade of "F" for this course.

Here are some examples of correct and incorrect citations.

Correct citation of a research paper in your text:	**Incorrect** citation of a research paper in your text:
According to Harrington and colleagues "investor-owned nursing homes deliver lower quality care than do nonprofit or public facilities" (Harrington et al. 2001, 1454). (If you repeat what someone says verbatim, you must use quotation marks and indicate the source).	**According to Harrington and colleagues investor-owned nursing homes deliver lower quality care than do nonprofit or public facilities (Harrington et al. 2001, 1454).** (in this example, quotation marks are missing, which suggests that you claim the authorship of the text).
According to Harrington and colleagues lower performance is found among investor owned organizations compared to public and nonprofit ones (Harrington et all 2001, 1454). (If you choose to paraphrase, you do not have to use quotation marks, but you must indicate the source).	**Generally, investor-owned nursing homes deliver lower quality care than do nonprofit or public facilities.** (in this example, the source and the quotation marks are missing).

Students are asked to treat their classmates and the instructor with respect, sensitivity, and openness to the ideas, opinions and approaches that are different from their own. Please, use these differences as a learning opportunity.

SUPPORT SERVICES

If you experience difficulty in this course for any reason, please do not hesitate to consult me. In addition to the resources of the department, a wide range of services are available at the university to support you in your efforts to be successful in this course. If you have a disability and might require accommodations in this course, please notify me via Disability Support Services (DSS) or the Academic Support Center (ASC) early in the semester so that I can make arrangements to address your needs.

Academic Support Center (202-885-3360, MGC 243, asc@american.edu, www.American.edu/ocl/asc) offers study skills materials and workshops, individual academic assistance, tutor referrals, and services for students with learning disabilities and ADHD. Writing support is available in the Academic Support Center (ASC) Writing Lab or in the Writing Center, Battelle-Tompkins 228, 885-2991.

Counseling Center (202-885-3500, MGC 214, www.american.edu/ocl/counseling) offers counseling and consultations regarding personal concerns, self-help information, and connections to off-campus mental health resources.

Disability Support Services (202-885-4415, MGC 206, dss@american.edu, www.american.edu/ocl/dss) offers technical and practical support and assistance with accommodations for students with physical, medical, or psychological disabilities.

EMERGENCY PREPAREDNESS

In the event of a declared pandemic (influenza or other communicable disease), American University will implement a plan for meeting the needs of all members of the university community. Should the university be required to close for a period of time, we are committed to ensuring that all aspects of our educational programs will be delivered to our students. These may include altering and extending the duration of the traditional term schedule to complete essential instruction in the traditional format and/or use of distance instructional methods. Specific strategies will vary from class to class, depending on the format of the course and the timing of the emergency. Faculty will communicate class-specific information to students via AU e-mail and Blackboard, while students must inform their faculty immediately of any absence due to illness. Students are responsible for checking their AU e-mail regularly and keeping themselves informed of emergencies. In the event of a declared pandemic or other emergency, students should refer to the AU Web site (www.prepared.american.edu) and the AU information line at (202) 885-1100 for general university-wide information, as well as contact their faculty and/or respective dean's office for course and school/ college-specific information.

Recording of the Lectures

Recording of any content from this class is prohibited unless you have my explicit written authorization; this prohibition includes recordings (audio and/or visual) made with so-called "smart pens," mobile devices, computers, or any other means. Students who require accommodations that would include the need to tape classes must provide a letter from the American University Academic Support Center or its Disability Support Services documenting the need for these accommodations.

Frequently Asked Questions

(relevant to PUAD 605, 601, 681, 696, and 610).

1．Do I need to prepare an executive summary or an abstract for my term paper/policy project?
No.

2．The syllabus specifies page limits for the term paper (other assignments). My paper is slightly (1-2 pages) longer/shorter. Is that OK?
Yes, do not worry if your paper is only <u>slightly</u> over or under the page limit (+/- 2 pages). However, if you choose to submit a 10 or a 35 page paper (with a specified 20-25 page limit), you may be penalized.

3．My presentation is slightly longer than the time limit specified by the instructor. Is that OK?
No. Your presentation has to be within the time limits set in the syllabus or articulated by the instructor. This is to ensure that all students have enough time to present and answer questions from the audience.

4. Do I have to use a specific reference style in my paper?
You are expected to choose one style and use it consistently throughout your paper. The following link provides detailed information on various reference styles, including APA, MLA, and Chicago Manual: http://www.library.american.edu/subject/citation.html.
Please, feel free to choose any of these reference styles.

5. I do not fully understand the meaning of plagiarism. Can you provide a useful link?
The following web site includes a tutorial that will help you understand and recognize plagiarism: http://www.indiana.edu/~istd/

6. What do I need to do to get an A for my quantitative analysis report?
"A" requires (1) <u>excellent execution</u> of statistical analysis, (2) <u>excellent writing,</u> and (3) <u>moderate to high levels of creativity/innovativeness.</u>

<center>Relevant to PUAD 605 and 601 only:</center>

7. I am a member of a project group, and I have been assigned a very small portion of the project. Is this a problem?
Yes. It is your responsibility to make sure that you perform roughly the same amount of work as your classmates. Please, contact the instructor if you have any questions or concerns. You are encouraged to perform some statistical tests independently, double-checking your classmate's work, and making sure you know how to do the analysis independently.

8. I am a member of a project group, and I have only been assigned to write the literature review. Is this sufficient?
No. Every student enrolled in the course (605 or 601) must learn how to use SPSS and attempt to generate SPSS outputs. This can be done (1) in class, as well as (2) independently, (3) together with the policy-project team, or (4) with the instructor (during her office hours). Please, contact the instructor if you have any questions or concerns.

9. My team-mates know SPSS and proceed very quickly. It is difficult for me to follow. What do I do?
First, ask your group mates to slow down a bit; explain that this is your first encounter with SPSS and that you are excited to learn it; since this is a group effort, you would like to participate and not stay behind. Second, you may meet with the instructor during her office hours and go through all

SPSS assignments with her. The instructor will be happy to practice SPSS with you on individual basis. Please, contact the instructor if you have any questions or concerns.

10. I've used SPSS before and understand how to do the project. My team- mates do not have the same level of expertise and it is frustrating for me to spend my time explaining to them what I already know.

This situation is not uncommon in the real world. After you graduate, you may have to work with colleagues who you do not have your level of proficiency with stats or with another subject. Thus, you need to develop an approach that maximizes the groups' overall productivity without disrespecting your colleagues. Please, be patient and make reasonable adjustments to your group work based on the *average* level of knowledge. Do not feel, however, that it is your responsibility to teach your classmates. If you believe that you are doing most of the assigned work in the group (or answering all the questions your team mates have), please contact the instructor to discuss your concerns.

APPENDIX A. TERMPAPER
Quantitative analysis report description

Project Introduction
In this course, you will have a unique opportunity to work on an important real-life public administration/public policy issue. Together with your classmates you will analyze quantitative data and write a quantitative analysis report using the methodology and SPSS skills learned in this course. Students will be assigned to teams and expected to work on all assignments together. This appendix provides a brief description of the project and the report that must be produced. It elaborates on the analysis that you are expected to do. The data set you will use is posted on Blackboard.

All members of each team are expected to contribute to the final report. This is a group assignment, and your success depends on your collaboration and fair distribution of work. You may want to select a Team Administrator who will administer the meetings, and do other organizational work. If the group dynamics becomes problematic, or if you have questions and concerns about how the work is distributed, please, do not hesitate to contact the instructor <u>as soon as the problems occur</u>. I suggest that you divide the work equally into several analytical parts for each member of the group; then, work separately each week; reconvene once a week (e.g., at the end of our class session) to discuss the findings; and do the write-up, taking turns in write-ups throughout the semester. (Note: prior to every meeting, you may want to decide what your meeting objectives are and how long the meeting is going to be).

Before submitting your final report in early December, you will be required to submit a "work in progress" report a week after the Midterm examination. The instructor will provide general feedback on your drafts. You will also be required to make a formal group presentation. You will have 15 minutes for your presentation and you will be required to use Power Point. Your presentation should summarize the contents of your quantitative analysis: its main objectives, data sources, tests you performed and the findings, presented in tables and charts. When presenting the findings in tables, students should summarize the displayed information and pinpoint the trends of interest. A clear conclusion should be provided at the end of the report. **Please, email your power point presentation to the instructor 2 hours before the presentation.** All team members are expected to participate in the presentation.

Note: Educational materials on how to use Power Point will be posted on the Blackboard.

Project Overview
In July 2014, the Centers for Medicare and Medicaid Services (CMS) announced that a multi-million dollar grant will be available to nursing homes (skilled nursing facilities) in several states. The grant is intended as an award, and may be used for structural renovations and/or purchasing of innovative technologies and assistive devices for the patients of the nursing homes. A large public, nonprofit or a forprofit nursing home association is eligible to administer the grant to its member organizations.

After the first round of grant proposal reviews, it has been determined that several large nursing home associations are eligible to administer the grant: (1) associations representing **nonprofit** nursing homes, (2) associations representing **forprofit** nursing homes, and (3) associations representing **publicly-owned** nursing homes.   Each association is asked to analyze the data on quality of care and access to care and write a report showing that their provider category (i.e. nonprofit, vs. forprofit, vs. public) performs better in terms of *quality of care* (i.e., has received fewer regulatory citations during the last survey) and in terms of *access to care for Medicaid-funded residents* (i.e., has a higher proportion of Medicaid patients).

Some student teams will be designated as the representatives of a nonprofit nursing home association; other teams will be designated as the representatives of a forprofit nursing home association; finally, there will be a team representing governmentally-owned nursing homes. Note: *Each team may choose a name for itself*.

Each team will be given an identical real-life data set ("Nursing Home Compare"), which includes a sample of public, nonprofit and forprofit nursing homes in the United States. The data set includes information on a sample of nursing homes operating in the United States (about 1500 of them). The file contains information on nursing home size, ownership status, proportion of residents who are on Medicaid (and are therefore poor), number of regulatory violations found in that facility by state inspectors, and other characteristics. These data are generated by government state inspectors who visit every nursing home in the United States (irrespective of its ownership) and conduct an annual inspection review.

FYI: Approximately 2 Mil. Americans currently reside in nursing homes. Some of them have private insurances or pay out of pocket. These represent the most generous sources of compensation for a nursing home. Other residents qualify for the Medicare Program (Medicare covers only 100 days of post-hospital treatment in a nursing home, so someone would qualify for the Medicaid Program reimbursement if they are staying in a nursing home after a major surgery). Finally, the vast majority of nursing home residents are on Medicaid: citizens are required to spend down their own income before they qualify for Medicaid nursing home care reimbursement. Medicaid reimbursements are generally very low, and some nursing homes do not like admitting too many Medicaid residents.

A typical middle class elderly American would start by paying for its nursing home care out-of-pocket or by using private long term care insurance. Once personal assets or private insurance funds are depleted, he/she would qualify for Medicaid. If nursing home care is received after a surgery, Medicare would pay for first 100 days of nursing home care. After that, a person would need to pay out-of-pocket, through a private insurance, or rely on Medicaid. Most elderly Americans eventually rely on Medicaid while receiving nursing home care.

Each team of students is expected to analyze this data and write a report showing which nursing home sector (i.e. nonprofit, vs. forprofit, vs. public) performs better. Naturally, a nonprofit association intends to demonstrate that nonprofit homes perform better, while

forprofit and public associations are interested in showing the superiority of forprofit and public homes respectively.

Teams
The list of students in each team will be distributed in class.

Blackboard
I set up a separate forum for each team in the "Discussion Board" section of the Blackboard. Please, feel free to use your team's forum as a communication tool.

Data Description
The data comes from the 2003 Nursing Home Compare File. It includes a sample of nursing homes currently operating in the Unites States (approximately 1600 organizations). Each row in the data represents one nursing home. There are no duplicate records in the data set. The description of all variables included in the data set will be distributed in class.

Report Structure
Your quantitative report should be approximately 20-25 pages long, double-spaced (the SPSS outputs should be pasted in the body of the text). All outputs should be clearly labeled and referenced in the text (e.g. "See SPSS output in Table 1"). The report produced by each team must be structured as a policy paper (see below).

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Section 1. Executive Summary

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Describe the main objective and the findings of your report (approximately 300 words). *Suggested completion date*: It is easy to write this summary after your whole report is ready.

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Section 2. Introduction and Lit review (1-2 pages)
Suggested completion date: first 2-3 weeks of classes

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Restate the objectives of the report and write a two-page review of the literature, which compares the performance of nonprofit, forprofit and public nursing homes in terms of quality of care.

The instructor has posted several relevant articles on the Blackboard web site. Please, do additional web search using Proquest database (available through AU library web site) to locate other relevant articles discussing quality of care in nursing homes.

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Section 3. Analysis (approx. 10-12 pages)

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Go through all steps described below and write up your findings. Paste all the relevant SPSS tables, charts or graphs directly into the body of your text in MS Word with clear notations and titles. If the table is large or hard to read, please create a new table in MS Word.

	Assignment	**How to do it?**	**Suggested completion date**
1.	Briefly describe the data you are using (data sources, # cases). List all variables in your SPSS data set. For each variable, describe what they measure, and their level of measurement (i.e., nominal, ordinal or interval/ratio). Suggested language: "Our data come from…. Our sample represents/includes… The variables included in our data set are…". Please, assume that you are writing a report to an audience that is NOT familiar with the data and does not know anything about your variables. Hence, you need to explain what data have been used for your analysis.	See Class 1 materials	Within one week after class 1.
2	Obtain frequency distributions for all nominal and ordinal variables (except for the so-called identifier-variables: "provider number", "provider name," "provider address," "city," "state," "zip," "syear," "smonth," "sday" and "phone"").	See Class 2 materials	Within one week after class 2.
	Recode your two measures of quality – variables **defnum** and **curldef**, and one measure of access (variable **pmedicai**) into nominal variables, which contain several (e.g., 4) categories representing score intervals. Obtain frequency distributions for these new variables as well.		
	Obtain either bar charts or pie charts for all nominal variables (except for identifiers).		
	Obtain line charts for three interval-ratio variables of your choice. Print out your SPSS outputs.		
	MOST IMPORTANTLY, inspect your findings (tables and charts) carefully. Do you see any interesting patterns? Do you see anything strange? (in that case, please, ask your instructor for clarifications). Summarize your main findings in 1-2 pages.		
3	Obtain the appropriate measures of central tendency for all variables in the data set (except for the identifiers: "provider number", "provider name," "provider address," "city," "state," "zip," "syear," "smonth," "sday" and "phone").	See Class 3 materials	Within one week after class 3.
	(Hint: obtain the mode for all nominal variables. Obtain both the mean and the median for interval ratio variables <u>and determine if the distribution is skewed</u>).		
	MOST IMPORTANTLY, inspect your findings. Describe in your own words the most typical nursing home in the United States using the most typical values of all variables. (i.e., you might find that the most typical nursing home is a forprofit, with 300 beds, with 95 percent occupancy and 85 percent of Medicaid funded residents, etc.). Suggested language: "Our analysis examined measures of central tendency for a number of variables. We found that an average nursing home has/is…."		

4	Conduct the following analysis separately for nonprofit, forprofit and public nursing homes by "selecting" (narrowing down) your analysis to (a) only nonprofit homes for your analysis (if **ownershi**=4, 5, and 6), then (b) only forprofits (if **ownershi**=1, 2, and 3), and finally (c) only public homes (if **ownershi**= 7, 8, 9, 10, 11 and 12). For each ownership category, obtain the average number of regulatory violations (variable **defnum**) and the average proportion of Medicaid residents (variable **pmedicai**). Also, obtain the range and standard deviation for these two variables. Carefully nspect the means of each ownership category. Which ownership category seems to have a higher number of citations? Which ownership category seems to provide more access to the Medicaid-funded residents? Inspect your measures of dispersion. Where do you see more dispersion vs. more consistency in performance? Write several paragraphs to describe your findings to your audience.	See Class 4 materials	Within one week after class 4.

5	Recode the 12-category "**ownershi**" variable into a two-category variable.
	       Nonprofit groups will create a two-category variable (called "nonprofit") indicating whether a nursing home is nonprofit (=1) or not (=0).
	       Forprofit groups will create a two category variable (called "forprofit") indicating whether a nursing home is forprofit (=1) or not (=0).
	       The public groups will create a two category variable (called "public") indicating whether a nursing home is government-owned (=1) or not (=0).
	 Using an independent sample t-test compare the following characteristics across the two categories of the variable that you just created: (a) the number of health related regulatory citations (variable **defnum**), (b) the number of life code related regulatory citations (variable **curldef**), and (c) proportion of Medicaid residents (variable **pmedicai**). Note: Please, treat proportion as an interval-ratio variable.
	
	 CAREFULLY inspect your results. Do you find that the sector you represent has fewer violations and provides more access to the poor (Medicaid) residents? Write several paragraphs about your findings.
		See Class 9 materials	Within one week after class 9.

6	Recode the original 12-category **ownershi** variable into a new three-category nominal variable called "**own1**" with values: 1=nonprofit, 2= forprofit, 3= public. Using ANOVA, test if there is a significant difference across these three ownership categories in terms of (a) the number of health related regulatory citations (variable **defnum**), (b) the number of life code related regulatory citations (variable **curldef**), and (c) proportion of Medicaid residents (variable **pmedicai**), (d) facility size (variable **bedtot**), (e) occupancy (measured as a proportion of beds occupied, variable **occupanc**).	See Class 10 materials	Within one week after class 10.

	CAREFULLY inspect your results. Do you find that the three sectors are different in terms of the number of violations, access to the poor (Medicaid) residents, facility size, and occupancy?		
7	Obtain bivariate tables (with column and row percentages, and Chi square statistics) using the following pairs of variables: a). "**Own1**" (the variable you obtained during the previous week, and which has 3 categories "nonprofit," "forprofit," and "public,") and hospital affiliation (variable **inhosp**). b). "**Own1**" (the variable you obtained during the previous week, and which has 3 categories "nonprofit," "forprofit," and "public,") and chain affiliation (variable **chain**). c). Create a new nominal variable "**bedtot1**" indicating organizational size 1=small nursing homes, 2= medium size homes, 3 = large homes. Use the old interval-ratio "**bedtot**" variable as a source for your new variable. Obtain bivariate tables and chi statistics using "**bedtot1**" and "**own1**".	See Class 11 materials	Within one week after class 11.
8	Obtain a bivariate correlation matrix for all interval-ratio variables in the data set. Inspect the matrix. (Pay particular attention to the variables that are strongly associated with the quality and access measures). What strong associations do you find? Are they positive or negative? Summarize your findings in several paragraphs. Run simple linear regressions with the dependent variable measuring quality (**defnum**) and try various other interval ratio variables as independent variables (e.g. staffing measures, size, occupancy, etc.). Choose one regression that seems interesting and, in your own words, describe the slope and the intercept of the relationship, as well as the R Square. Run simple linear regressions with the dependent variable measuring access (**pmedicai**) and try various other interval ratio variables as independent variables. Choose one regression that seems noteworthy and, in your own words, describe the slope and the intercept of the relationship, as well as the R Square.	See Class 12 materials	Within one week after class 12.
9	This is the last section of the SPSS assignment. By now, you have already obtained the frequency distributions, charts, the measures of central tendency and dispersion for the variables in the data sets. Thus, you can describe the most typical nursing home in the United States. You also compared the means for **defnum** and **pmedicai** across public, private and nonprofit facilities. You have determined whether there was a significant difference between the means across the ownership status. You also ran bivariate regressions last week. This week, you can complete your analysis by running multivariate regressions. I suggest that you run two regressions. Before running each regression, create two dummies (i.e., two-category nominal variables). This can be done by using a "recode" procedure which is already familiar to you. The first dummy variable **nonprofit** has to be =1 for nonprofit homes (if **ownership** = 4, 5, 6) and =0 for all other homes (if **ownership** = 1, 2, 3, 7, 8, 9, 10, 11, 12). The second variable **forprofit** has to be =1 for forprofit homes (if **ownership** = 1, 2, 3) and =0 for all other homes (if **ownership** = 4, 5, 6, 7, 8, 9, 10, 11, 12).		Within a week of the date the report is due.

Running regression #1: Run a multivariate regression using the following variables: Dependent variable: **defnum** Independent variables: include two variables that you have created (**nonprofit** and **forprofit).** Also include other variables that, in your opinion, impact quality (e.g. occupancy, capacity, staffing hours and others). **Running regression #2:** Run a multivariate regression using the following variables: Dependent variable: **pmedicai** Independent variables: include two variables that you have created (**nonprofit** and **forprofit).** Also include other variables that, in your opinion, impact access for poor residents (e.g. occupancy, capacity, staffing hours and others). **Analysis** For both regressions, make sure to interpret the following statistics: a. the slopes (change in the dependent variable associated with 1-unit change of each independent variable) b. significance (p-values) of the slopes (is sig. less than .05?) c. beta-weights (examine the standardized slopes. Which variable seems to have the most important predictor of the dependent variable?) d. R Square (what proportion of the variation in the dependent variable is explained by this set of independent variables?) e. overall model significance (is this model overall significant?) * If you wish, you can also try running a third regression with the **curldef** as a dependent variable.	

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Section 4. Conclusion (1 page)
Suggested completion date: before the Final Exam.

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Summarize your findings and conclude with a statement addressed to the Centers for Medicare and Medicare Services Grant Review Committee, asking to award the grant to your association. Please, keep in mind, that some of you may find that the nursing home sector they represent, is in fact not performing well in terms of quality or access. It is your job, as future public managers, to decide how to handle this situation. You may consult the instructor to discuss your ideas.

GROUP WORK

Here are some suggestions on how to optimize your group work pertaining to the term paper projects. As mentioned earlier, the expectation is that everyone will contribute equally. In the past, different groups have used different time management and work distribution strategies while working on their analysis.

Some groups simply delegate parts of the assignment to each member (e.g., John will work on the analysis and write-up for week 1, Rachel will work on the analysis and write-up for week 2, Matt will write the literature review section and do some analysis, etc., and at the end, Kristina, will put everything together and edit the report). These groups often have weekly or bi-weekly meetings, go over some parts of the assignment together, review the analysis done by individual team members (in person or by email), comment on each other's work, and make changes if someone made a mistake. Individually, some students still choose to go through the entire project (individually and independently) to make sure they understand it well. I strongly support such efforts.

Other groups perform all parts of the assignment together in the lab. This way, everyone in the group is more likely to be involved and understand the outcome.

Feel free to structure your work in a way that fits your own talents, interests, and time constraints. However, you have to make this decision as a group, during the first two weeks of the Fall semester.

Here are some suggestions on how to improve this process.
1. Before convening a meeting make sure to establish meeting objectives, e.g., "we plan to accomplish the analysis pertaining to week 2, discuss what needs to be in the write-up, and designate the write-up to one team member"
2. Choose a group facilitator who can "moderate" your meetings and move the process forward.
3. Try to minimize the distractions and social conversations during your meetings. Your meetings will be shorter, and you can still interact at the end, if you wish.
4. Delegate whenever possible. If you go through the whole analysis together, you can discuss the points to be included in the write-up, and ask a group member to do the write up (rotate this role every week).
5. At the end of each meeting (or individual session) **save your SPSS outputs** in an SPSS or Word file. You can always delete them later, if you do not need them.
6. If you prefer conducting your analysis as a group rather than assigning its parts to different team members, do have a lead person (rotate this role) who will be responsible for putting together the results pertaining to each week (the SPSS outputs and some write-up). E.g., group A performs analysis for week X together, and John will save the outputs, write the conclusions (based on the group's discussions), and add those into a "Master File".
7. Communicate online – e.g., share outputs, write-ups, comment on each other's work.
8. Use the Discussion Forum provided to each group on Blackboard.
9. It is unacceptable to come to a meeting unprepared. If you have not been contributing during the first weeks, volunteer to perform a part of the assignment at a later point. Comment on your friend's work by suggesting revisions or checking their computations.
10. Come up with the deadlines for each section of the project and make sure you have a "Master file" that contains all of the completed sections. Creating a little table with names and dates and tasks might be useful.

<u>Please, note that if your teammates express continuous concerns about your individual performance, I may ask you to verify your individual contribution by presenting the SPPS outputs you had obtained and/or writing you have done (or any other part of work that has been assigned to you within a group). Hence, please, save all the work you are doing individually.</u>

Finally, if you have concerns about your group process, please do not hesitate to contact me. I will be happy to meet with you individually or as a group and do a typical weekly meeting.

WRITING QUALITY

The report must be typed in Word, on letter size paper with one inch margins, double-spaced, and "Times New Roman" 12 pt font size. Style, clarity and analysis count. The following criteria will be used to grade papers:

1.	Good understanding of analytical methods: correctly obtained statistics with thoughtful interpretations.
2.	Writing quality (clear, concise, logical and well-organized report with a title, subtitles, bullet-points, and other techniques assisting in the presentation of the material).
3.	Innovation and creativity (ability to provide interesting interpretations of results, ability to go beyond the plan of the analysis described in Appendix A and use of additional interesting tests).

WRITING RESOURCES

I highly recommend that you take the American University Library's Information Literacy Tutorial, http://www.library.american.edu/tutorial/index.html, if you have not already done so in your academic career. It is an excellent introduction to researching and writing. Throughout this and every other course careful attention should be given to writing style, source citations, and proper listing of references, and the library's tutorial is very helpful. For questions, please refer to the library website on citations, http://www.library.american.edu/e_ref/citation.html or a college writing text such as Hacker, <u>A Writer's Reference</u>, www.bedfordstmartins.com/hacker/writersref. In addition, Davis, *The Rowman and Littlefield Guide to Writing with Sources* (2nd ed., 2004) is an extremely useful text. If you are more comfortable with a style manual not mentioned here, please contact me so that we can determine the best reference for you to use. The key point is appropriateness and consistency. In addition, you should evaluate websites carefully for academic quality and reputation. For guidance on website evaluation, please contact a site such as http://www.library.cornell.edu/okuref/research/webeval.html. I would also be happy to answer any questions you have on this topic.