



## ***Why Statistics for Public Managers and Analysts?***

### **Q & A**

**1. *Identify five ways in which analysis and data often are used.***

The five ways are as follows: (1) to describe and analyze societal problems, (2) to describe policies and programs, (3) to monitor progress and prevent fraud, (4) to improve program operations, and (5) to evaluate policy and program outcomes.

**2. *How does quantitative analysis assist in decision making?***

Quantitative analysis provides a factual underpinning of situations and responses by quantifying the extent of problems and situations and the actual or likely impact of proposed strategies. At the very least, a focus on facts and objective analysis can reduce judgment errors stemming from overly impressionistic or subjective perceptions that are factually incorrect.

**3. *Identify six competencies for analysis.***

The six competencies are (1) being familiar with data sources in your line of work, (2) being able to collect your own data, (3) analyzing data, (4) communicating results from analysis, (5) bringing to quantitative analysis the theory and practice of management and policy analysis, and (6) having a strong sense of ethics relating to quantitative analysis.

**4. *What is scientific research?***

Scientific research is the careful, systematic process of inquiry that leads to the discovery or interpretation of facts, behaviors, and theories. Scientific research is distinguished from personal and other forms of research or inquiry by rather strict standards for accepting new facts and theories as knowledge and by a process that includes other scientists in making such determinations.

**5. *What is statistics?***

Statistics is the body of systematic knowledge and practice that provides standards and procedures for drawing conclusions from one's data. Statistics includes specific tools for analyzing data, too.

**6. *Identify four stages of proficiency in quantitative analysis.***

The four stages of proficiency are know-nothing, journeyman, technocrat, and sophisticated expert. Each stage is associated with distinct development objectives.

**7. *What three areas of ethical concern are identified in connection with analysis?***

The three areas are as follows: (1) fully disclosing the purposes of analysis, (2) integrity in analysis and communication, and (3) concern for the impact of analysis and research on the welfare of human subjects.

**8. What is scientific misconduct?**

Scientific misconduct is generally understood as the violation of the standard norms of scholarly conduct and ethical behavior in scientific research. Scientific misconduct, when considered by others to be significant or severe, can diminish one's reputation and negatively affect one's career, including the possibility of dismissal from one's job and adverse legal action.

**9. What is the specific problem of dual purposes?**

Analysts must balance potentially conflicting purposes of (1) furthering programs and policies and (2) establishing objective truths about how well a program is performing.

**10. Which practices are associated with furthering the integrity of analysis and communication?**

Analysts should be honest, objective, accurate, and complete. Analysts should not hide facts, change data, falsify results, or consider only data that support a favored conclusion. Analysts should also fully report the sources of their data, data collection methodologies, and any possible gaps and shortfalls, and they should assess the impact of such shortcomings on their findings. Results should be presented in straightforward and nonmisleading ways. These norms provide essential guidance to analysts throughout the entire analytical process.

**11. What concern should analysts have for the impact of research on the welfare of human subjects?**

Researchers and analysts should recognize and minimize the potential harm that their research and analysis could have on research subjects. Most human subjects research is now subject to oversight by institutional review boards to ensure that risks to subjects are reasonable and that possible harm is identified and minimized.

**CRITICAL THINKING**

*Note to students:* These questions further understanding of selected key points made in the textbook. Questions in the next section, "Application Exercises," are designed to encourage application of the key points in practice.

1. What is the difference between describing the extent of a social problem and describing the factors that give rise to it? Give an example. How can the latter be useful for developing programs and policies?

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2. What is the role of statistics in connection with the six competencies mentioned in the text? What else might be needed to attain these competencies?

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3. Many programs produce routine, administrative data that are used to monitor progress and prevent fraud. How useful are such data for the five common uses of analysis and data mentioned in the text? What other data might be needed, such as might be obtained from citizen or client surveys?

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4. Identify a person or situation associated with each of the four stages of proficiency in quantitative analysis.

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5. Explain how the following concerns of ethics can affect research and its utilization: (1) dual purposes, (2) full disclosure, (3) truthfulness, (4) alternative explanations, (5) communication, and (6) well-being of human subjects. Give examples of each.

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**APPLICATION EXERCISES**

*Note to students:* This section is called Data-Based Exercises in later chapters (starting in Chapter 6) and will provide you with hands-on exercises that involve real datasets.

1. Identify five problems or challenges in your area of interest that would benefit from analysis or research.

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2. Identify at least two examples, in your area of interest, of each of the five common uses of analysis and data.

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3. What data exist in your area of interest? Are there any datasets with which managers and analysts are expected to be familiar?

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4. At what stage of proficiency do you see yourself? What is necessary to get beyond this stage? Develop some learning objectives for yourself.

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5. Explain how a customer or citizen survey might be useful in your area of interest. What topics might such a survey address? What challenges do you foresee?

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6. (a) Consider the following proposition: "Almost every department needs people with analytical skills." Verify this proposition by interviewing managers in your area of interest. Which analytical skills do they say that they are looking for? (b) Research salaries at the U.S. Bureau of Labor Statistics, National Industry-Specific Occupational Employment and Wage Estimates, at [www.bls.gov/oes/current/oesrci.htm](http://www.bls.gov/oes/current/oesrci.htm), and compare wages for occupations that vary in analytical content, for example, management positions in budgeting, information technology, human resource management, and parks and recreation.

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7. Identify and consider some ethical situations that would challenge the integrity of your analysis and research, such as being asked to withhold relevant information. How might you deal with such situations?

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8. Research the policies and practices that pertain to ethics in research in your agency or in an agency in your area of interest. If there are none, suggest two or three that would serve as a foundation for a more extensive set of policies.

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## FURTHER READING

Various books offer additional information about the importance and uses of research and analysis in public service. A popular book is Eugene Bardach, *Practical Guide for Policy Analysis: The Eightfold Path to More Effective Problem Solving*, 5th ed. (Washington, D.C.: CQ Press, 2015). A rather different approach is William Dunn, *Public Policy Analysis: An Introduction* (New York: Prentice Hall, 2016). Scholarship about the use of policy analysis and research traces back to the development of policy analysis as a field in the 1970s and efforts to get public agencies to use it in the 1970s and 1980s. A classic text about the use of analysis is Aaron Wildavski, *Speaking Truth to Power: The Art and Craft of Policy Analysis* (Piscataway, N.J.: Transaction, 1987). Since then, research has focused varyingly on the capacity of government organizations to develop or have policy research and analysis capabilities, and the utilization of such knowledge in their decision-making processes.

Different events and contexts lead to different foci in research. In recent years, a focus has been the utilization of “evidenced-based” policy, resulting from increased capacity of performance measurement (see Chapter 4) and policy analysis. A representative article in this genre is Gary VanLandingham and Torey Silloway, “Bridging the Gap between Evidence and Policy Makers: A Case Study of the Pew-MacArthur Results First Initiative,” *Public Administration Review* 76 (2016): 542–546, and, somewhat older, Michael Howlett, “Policy Analytical Capacity and Evidence-Based Policy-Making: Lessons from Canada,” *Canadian Public Administration* 52 (2009): 153–175. While the use of evidence is ever more popular, concerns are growing as well; see Holger Strassheim and Pekka Kettunen, “When Does Evidence-Based Policy Turn into Policy-Based Evidence?” *Evidence & Policy: A Journal of Research, Debate and Practice* 10 (2014): 259–277. As these articles suggest, the problem of research utilization is found throughout the world. An older, award-winning article is Réjean Landry, Moktar Lamari, and Nabil Amara, “The Extent and Determinants of the Utilization of University Research in Government Agencies,” *Public Administration Review* 63 (March/April 2003): 192–205. This article received the Louis Brownlow Award from the American Society for Public Administration for the best article published in *Public Administration Review* in 2003. Earlier, the focus was on the development of performance measurement. See, for example, Evan Berman and XiaoHu Wang, “Performance Measurement in U.S. Counties: Capacity for Reform,” *Public Administration Review* 60 (September/October 2000): 409–420, which reflects the then-growing development of performance measures in local government. But as times change, so, too, does research.

A classic book about the ethics of analysis is Darrell Huff, *How to Lie with Statistics* (New York: Norton, 1993, 1954). Other books on this topic are Joel Best, *More Damned Lies and Statistics: How Numbers Confuse Public Issues* (Berkeley: University of California Press, 2012, 2001) and Matthew Robinson and Renee G. Scherlen, *Lies, Damned Lies, and Drug War Statistics: A Critical Analysis of Claims Made by the Office of National Drug Control Policy* (Albany: State University of New York Press, 2014). As the progress of these titles shows, the genre is getting ever more tailored around specific topics. The National Institutes of Health website provides educational materials that discuss protections for human subjects, which is applicable to all types of research, including studies that public policy managers and analysts might conduct that involve humans in some way, for example, by administering surveys. Training materials related to approval processes for such research (such as by institutional review boards that are found at many research centers and universities) may also be found on the web (see, for example, <http://osp.od.nih.gov/office-clinical-research-and-bioethics-policy>).