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# Statistician Careers, Jobs, and Education Information

## Career and Job Highlights for Statisticians

- Having earned a degree in statistics does not necessarily lead to jobs with statistician profiles
- Most statistician jobs require no fewer qualifications a master's degree in mathematics of statistics.
- Opportunities are likely to continue to exist for people with statistician degrees, despite the decline in growth expectations

## Statistician Career Overview

Statistics essentially involves putting mathematics to scientific use in the form of data comparison, analysis, and presentation. Statisticians use this knowledge to design, collect, and interpret data experiments surrounding many different fields of industry. This includes fields of economics, medicine, psychology, marketing, public health, biology, sports, and others. Even military considerations take statistical procedures for approval of certain strategies and sanctions.

Statisticians use sampling techniques to determine sizes of relative populations and demographics. This process is achieved by surveying portions of large groups. They determine the size of group samples and the methods for carrying these samples out. This includes stylizing the instructions and questions to be used in surveys. Finally, statisticians summarize, analyze, and interpret the resultant data.

Statisticians are also heavily involved in the development of products and quality factors. They often work for automobile, pharmaceutical, or computer software companies in trial testing and product evaluation. Apart from development, statisticians are also involved with the manufacturing, asset, liability, and risk management, and marketing departments of firms.

Most government organizations and agencies hire statisticians to evaluate population, demographic, and economic measurements. Many other environmental, scientific, and agricultural agencies hire statisticians for similar type of work in their respective fields. Even national defense organizations hire statisticians to assess weapons and strategy effectiveness.

Different job titles exist for different statistical specializations. Biostatisticians and epidemiologists are two examples of job titles within the health industry. Econometricians work in areas involving economic research and data.

### **Statistician Career Training and Job Qualifications**

Most statistical jobs require at least a master's degree in mathematics or statistics. More advanced academic research in statistics require at least a higher-level institution requires a master's degree and Ph.D. in the same field. Entry-level jobs in other areas of research, such as industrial, require many experienced years of work and study.

Qualification for statistician jobs in the Federal Government requires a bachelor's degree with certain accredited hours in statistics and mathematics. To be a mathematical statistician in the Government requires a total of twenty-four hours in combined statistics and mathematics, with particular concern for differential equations, vector analysis, and calculus. Numerous schools have degrees and necessary course available in these areas of research. Statistical majors usually require courses in probability theory, calculus, and statistical methods and modeling. This is in addition to the algebra, mathematical design, and analysis courses usually incorporated in the undergraduate program.

Around 140 schools of higher learning offer master's degrees in statistics, while around 90 offer doctoral degrees. Numerous schools have upper-level and graduate level statistic courses in economics, engineering, business, education, and psychology. Although undergraduate training is not required for acceptance, graduate programs prefer students to have had prior mathematical training. Statistics are used widely in computer programs, and thus computer science training is also beneficial. For jobs involving product quality management, training physical science and engineering may be required. Any area of health science training is helpful to move into pharmaceutical jobs, and business or economics education is good for business analysis, forecasting, and market research.

Having strong interpersonal skills will also help statisticians in communicating technical concerns to people unfamiliar with specific programs. For those working in the private sector, a general knowledge of business and economics is highly beneficial. Entry-level statisticians work under supervision but are soon likely to advance on to greater responsibility jobs. These promotions or advancements are greatest for those with graduate degrees in the respective fields.

### **Job and Employment Opportunities for Statisticians**

Over the course of the next decade, job growth is likely to decline. Many opportunities should nonetheless be open to job seekers with the appropriate degree. Instead of having a typical statistician job profile, however, these workers may instead work in analysis areas for science, computer, and business fields. Although job growth is not likely to expand, opportunities are still afforded through employee turnovers and career transfers.

The most qualified candidates for jobs are those with a graduate education in statistics relating to

finance, engineering, computer science, and biology. The National government has many openings for statisticians within its different departments, and these jobs are considered to be highly competitive due to their lower expectation requirements for beginner jobs. Those certified with the State are usually able to find high school teaching positions.

Statisticians work for manufacturing firms in areas such as aircraft, motor vehicles, pharmaceuticals, food, and chemicals. A pharmaceutical firm may employ a statistician to evaluate drug efficiency. A motor vehicle company may hire statistician for quality control purposes in testing automobiles. They may also work with scientists and engineers in researching and analyzing new product development. Many software firms also hire statisticians for quality control and software development.

Businesses work with statisticians in evaluating overall business-run efficiency and profit. Statisticians in this field also offer consulting services to another business. Generally, statisticians ought to have current computer skills and awareness, including programming and software equipment.