



A Career as a Statistician

The major sectors that employ **statisticians** are the Federal **government**, local governments, finance companies, insurance firms, and scientific research agencies among others. To enter the competitive careers of statisticians, one has to have a master's degree in mathematics or statistics. The **employment** is expected to increase in the coming years. Those who have a degree in statistics have different career opportunities in different fields.



Nature of the Work

Statistician job involves applying mathematical principles in collecting, analyzing and presenting numeric data.

Statisticians use their statistical and mathematical knowledge to

design surveys and experiments, collecting, processing and analyzing data, and interpreting the results of the experiments and surveys. Their work also includes interpreting opinion polls and information on average earnings in a particular occupation.

Some of the areas where statisticians may apply their knowledge include economics, biology, **medicine**, engineering, psychology, public **health**, marketing, sports and education. Most social, military, economic and political decisions cannot be made without applying statistical techniques, for example, a designing experiment to get approval for the Federal government of a newly invented drug. Statistician jobs may have to show if the apparently good results of the drug were probably due to the drug, and not just a random variation in the patient's results.

One useful technique that statisticians use is sampling. It involves getting data from a group of things or a population of people by surveying small segments of the total. In using this method, they have to determine how and where they will get the data, decide on the kind and size of the group to be sampled, and come up with reporting forms or survey questionnaires. They also have to outline instruction that will be used by the workers who will collect and fill the data into tables. Lastly, they have to perform analysis, interpretation and summarization of the data using computer software.

Statisticians are employed in various industries, and because of this they will usually have different titles. For example, those who work in medicine and public health are called

biostatisticians, while those dealing with numeric data are called econometricians

Education and Qualifications

The minimum **educational** qualification for a statistician job is a master's degree in mathematics or statistics. However, academic and research jobs usually require a Ph.D. while a bachelor's degree is required in Federal government jobs. Those who are searching for beginning positions in industrial research are required to have a master's degree and a number of years in experience.

There are over 200 universities in the US that offer degree programs in mathematics or statistics. Other schools also have Applied Statistics graduate-level courses for students who are majoring in business economics, biology, engineering, psychology, education and other fields. For one to be accepted into graduate statistics programs, he does not need to have an undergraduate statistics degree, but good training in math is necessary.

A number of schools also offer degrees in operations research, mathematics, and other fields which have enough statistics courses that will enable qualified graduates be eligible for entry level jobs by the Federal government. The required subjects for those majoring in statistics include statistical methods, probability theory, integral calculus and mathematical modeling. Other additional courses including applied multivariate analysis, linear algebra, mathematical statistics and design and analysis of experiments are recommended for undergraduates.

Employment

The Federal government employs most of the statisticians, with most of them working in Departments of Agriculture, and Health and Human services and Commerce. Other major employers of statisticians are the local governments



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and the State, including the State universities and colleges. The private industry, especially insurance jobs carriers, pharmaceuticals, medicine manufacturers and scientific research agencies are also major employers of statisticians.

Job Outlook

Statistician work is expected to grow on an average in the coming years at about 9% in this decade. There is expected to be an increase in the demand of people who have a statistics background, although some of the jobs will be in careers which have different titles from "statistician".



There is a wider and growing use of statistics. Statistical models help in decision making in both the government and the private industry. The demand for people skilled in statistical models will always be there. Advances in technology are expected to lead

to the rise in demand for statisticians. New faster computer processors enable statisticians to analyze large data amounts faster, and to collect and filter classified and large amounts of data that could not have been classified so quickly in the past. As the processes are becoming less expensive and more efficient, many employers will want to employ statisticians in order to benefit from the new information that is available.

Biostatistics is expected to experience growth, mainly due to the pharmaceutical businesses which are currently booming. Many pharmaceutical companies are coming up with new medical technologies and treatments, and biostatisticians will be required to do clinical trials and research.

Job Prospects

Job seekers who have a degree in statistics will continue to have opportunities in different fields. For instance, there are many jobs which involve analyzing and interpreting data from biological science, economics, computer software engineering, psychology, education and other fields. More job openings will be available when other statisticians move to other careers, retire or opt out of the workforce for different reasons.

Those statistics graduates who have backgrounds in allied fields like biology, finance, computer science or engineering have the highest chances of finding employment in fields that are related to their study.

Graduates who are certified by the State can opt to be statistics teachers in high schools.

Earnings

The average median earning per year of statisticians is \$65,720. 10 % of the lowest paid statisticians receive \$37,000 while 10% of the highest paid get over \$108,500. The average salary for statisticians employed by the Federal Government is \$ 85,500, whereas mathematical statisticians get an average of \$96,000

Conclusion

In the coming years, statistician jobs are expected to be on the rise. Statistics graduates with backgrounds in fields like finance, computer engineering, biological sciences and other allied disciplines are better placed to get employment than those who are only specialized in statistics.

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