

What Is SPSS and Its Importance in Research & Data Analysis?

SPSS (Statistical package for the social sciences) is the set of software programs that are combined together in a single package. The basic application of this program is to analyze scientific data related with the social science. This data can be used for market research, surveys, data mining, etc.

With the help of the obtained statistical information, researchers can easily understand the demand for a product in the market, and can change their strategy accordingly. Basically, SPSS first store and organize the provided data, then it compiles the data set to produce suitable output. SPSS is designed in such a way that it can handle a large set of variable data formats.

How SPSS Helps in Research & Data Analysis Programs:

SPSS is revolutionary software mainly used by research scientists which help them process critical data in simple steps. Working on data is a complex and time consuming process, but this software can easily handle and operate information with the help of some techniques. These techniques are used to analyze, transform, and produce a characteristic pattern between different data variables. In addition to it, the output can be obtained through graphical representation so that a user can easily understand the result. Read below to understand the factors that are responsible in the process of data handling and its execution.

1. **Data Transformation:** This technique is used to convert the format of the data. After changing the data type, it integrates same type of data in one place and it becomes easy to manage it. You can insert the different kind of data into SPSS and it will change its structure as per the system specification and requirement. It means that even if you change the operating system, SPSS can still work on old data.

2. **Regression Analysis:** It is used to understand the relation between dependent and interdependent variables that are stored in a data file. It also explains how a change in the value of an interdependent variable can affect the dependent data. The primary need of regression analysis is to understand the type of relationship between different variables.

3. **ANOVA(Analysis of variance):** It is a statistical approach to compare events, groups or processes, and find out the difference between them. It can help you understand which

method is more suitable for executing a task. By looking at the result, you can find the feasibility and effectiveness of the particular method.

4. MANOVA(Multivariate analysis of variance): This method is used to compare data of random variables whose value is unknown. MANOVA technique can also be used to analyze different types of population and what factors can affect their choices.

5. T-tests: It is used to understand the difference between two sample types, and researchers apply this method to find out the difference in the interest of two kinds of groups. This test can also understand if the produced output is meaningless or useful.

This software was developed in 1960, but later in 2009, IBM acquired it. They have made some significant changes in the programming of SPSS and now it can perform many types of research task in various fields. Due to this, the use of this software is extended to many industries and organizations, such as marketing, health care, education, surveys, etc.

Advantages of Using SPSS

The statistical analysis tool makes it possible to import and export data files from other programs. Some of its data handling procedures are excellent, as its ability to merge files, no matter whether it is the same subjects and different variables or different subjects and the same variables, is excellent.

In SPSS, users are not forced to work with syntax, even though syntax files can be saved and modified as needed. When there are saved syntax files, it helps immensely with documentation and also gives an idea of how the new variables were calculated and how values that were missing were handled.

- It offers reliable and fast answers
- It's dynamic and has useful tables and graphs
- Since it offers a wide variety of languages, a lot of people can access
- Effective data management
- Doesn't require a lot of effort to start using the software
- Useful for both quantitative and qualitative data
- The chances of errors are little with SPSS
- One of the easiest statistical tools to analyze data
- SPSS users can select the graph type which matches their data distribution requirement

Limitations of Using SPSS

One of the biggest disadvantages of using SPSS is that you cannot use it to analyze a big data set. There are certain fields where there is a huge trove of data present. In such industries, using SPSS might not be the best option out there.

If researchers collect data using faulty or biased methods, then the resulting statistical analysis will not give the right answers. If the gap between the sample and the actual population is negligent, then there is no issue. But if the difference is big, then it will produce misleading data.

Conclusion:

SPSS helps scientists, researchers, business analysts, managers, and marketers during the entire analytics process, starting from planning, data collection, data analysis, report creation, and deployment. No matter what your business objectives are if you have a bunch of data that you want to analyze, SPSS is one of the best statistical analysis tools that you can use.