MATH 171

Written Paper Project 1

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This written paper project is analysis of a simple random sample of a data set from a statistical survey. A simple random sample of *n* measurements from a population is a subset of the population selected in such a manner that every sample of size *n* from the population has an equal chance of being selected. In this scenario, the sample size is 50 students. This survey was available to all MATH 171 students, but the population is only all of the students that provided a response to this survey. The survey was given as an extra credit opportunity and not required. A population is the data from every individual of interest, while a sample is the data from only some of the individuals of interest. A sample set of data is sometimes referred to as a subset of the population. There are different ways to find a simple random sample, one way being using a random number generated table, like the one provided to us in our textbook. Another way to find a simple random sample is to use the random number generator through the calculator. In the following paragraphs, we will analyze this simple random sample that represents MATH 171 students in terms of their religion.

The way in which we calculated the simple random sample was by calculator. Depending on the type of calculator, the steps to take to determine a simple random sample will vary. The following steps are specific to the calculator type we used, which was a TI-84. To calculate a simple random sample on a calculator you first push MATH, then arrow over to PRB. Once in PRB, arrow down to randIntNoRep(, then hit enter. Next, type your minimum then the sample size (*n)*, then enter. This will give you your random numbers, but the calculator is not responsible for providing the sample size of *n.* There are two categories of data, qualitative and quantitative. Qualitative data is non numerical data, this type of data describes an individual and is categorical. Quantitative data has a value or numerical measure. The data from this statistical survey is qualitative because it describes the religions of MATH 171 students at Longwood University; religion is not something that has numerical measure.

This statistical survey is an observational study. An observational study observes measurements of individuals in a way that does not change the response or the variable being measured. Whereas in an experiment, a treatment is deliberately imposed on the individuals in order to observe a possible change in the response or variable being measured. In the case of this statistical survey, the Math department at Longwood University conducted this survey for informational purposes therefore no treatment was implemented on the individuals who partook in this survey.

This random sample is only representing the students from MATH 171 who provided responses to this survey. The Math Department did not make this survey accessible to all students in the Math Department, or all of the students at Longwood University therefore it can not be an accurate representation of all students who attend Longwood University. While most American college students identify as Christian, this particular study is not representative of all college students in Virginia. One reason this may be is due to the fact that Longwood University is located in a rural community of Farmville, VA, and not an urban area like Virginia Commonwealth University which is located in Richmond, VA. Geographical location is an important factor to take into account when analyzing data based on something like religion. This thought process continues when determining if this study represents all college students in America. For the most part, many college students do identify as Christian, but America is a very diverse country in terms of ethnicities and race, it is diverse in the religions it has as well. This data would not be representative of all college students around the world because countries around the world are not predominantly Christian, as this data suggests. There are also different cultures that take up different religious practices that are not a part of this survey.

In conclusion, this survey reveals that most students in MATH 171 at Longwood University identify as Christian. To have a more accurate representation of Longwood University, the Math Department could provide all students the opportunity to partake in this survey. This written paper project gave us a better understanding of statistics and how it can be utilized in a real life scenario.



