LITE 508 Database Module

Introduction:

In this module you will learn basic data entry, analysis, and visualization skills using M.S. Excel to ask and answer basic questions about Kentucky libraries. These skills can be transferred to most database applications.

Instructions:

Review selected tutorials on getting started in Excel including, data entry, data analysis, and data visualization. Refer to these tutorials as you complete this module (see Module 3 on Blackboard). Complete the Database Module worksheet below and submit to Blackboard. Review data contained in the *Kentucky Public Library Statistical Report* posted in this module. Formulate a simple question such as "Do Kentucky counties with higher media income have higher per/capita circulation?" (PLEASE DO NOT COPY THIS QUESTION! COME UP WITH YOUR OWN QUESTION!) Create a spreadsheet for your assignment. Select no less than 20 rows of data (counties), and 3 columns of data (circulation, expenditures, etc.) for your project so that you have information to analyze. Enter the selected data from the report into your spreadsheet. For each column of data calculate the mean, median, and mode and include this information at the bottom of the column on spreadsheet. Excel has tools for you to perform these operations.

Data Analysis:

Use the Statistics functions to analyze your data. Report the Mean, Median, & Mode for your data each row and column of your data. Make sure your data uses no more than one decimal point (2.5 for example). Copy/Paste your spreadsheet in your Database Module worksheet.

Data Visualization:

Use the Chart/Graphs functions to present your data so that it is meaningful to others and answers your basic question ("Do Kentucky counties with higher media income have higher per/capita circulation?") Review the reading on data visualization and telling a story with data to understand how your can clearly and concisely tell your story with charts and graphs. Make a decision about whether the data is presented best as a pie (percentage of a whole), line (change over time), or bar graph (discrete data). Create two charts/graphs to present your data in a meaningful way and tell your story.

Conclusion:

Use the descriptive statistics and data visualizations you have developed to answer your question, including a summary of the results of your analysis, and concluding statements. As an example to answer our sample question: "Do Kentucky counties with higher media income have higher per/capita circulation?" a conclusion might be:

“The spread sheet shows data for 20 Kentucky counties separated equally into the highest and lowest median incomes. The columns show total population, annual and per capita circulation statistics for 2016/2017 fiscal year organized by high and low incomes. The mean, median, and mode are calculated for each county. Additionally, the mean, median, and mode are calculated for the high and low median income counties separately for comparative purposes. Two bar graphs are used to display the results of this study. The first bar graph shows the per capita circulation data for the

high median income group and the low median income group. The second bar graph shows the mean income and circulation for the two groups. The first graph shows that there are some low income libraries that have higher circulation than high income libraries and vice versa. For example, Fayette County Library, a high income county, has an average circulation of 10 books per user, while Hancock County Library, a low income county, has a circulation of 26 books per user. The second graph shows that overall, the mean circulation of low income libraries of 13 books per user is higher than the mean circulation of high income libraries of 10 books per user. To answer our initial question: Kentucky counties with higher median income do not always have higher per capital circulation. "

Database Module Worksheet

Name:

Basic Question:

Data Entry:

Paste spreadsheet here

Data Visualization:

Paste your 2 Graph/Charts here, along with a rationale for why your chosen visualization (pie, bar, line, etc.) best suited the data

Conclusions from Data:

Use the descriptive statistics and data visualizations to make concluding statements. Describe any conclusions you have reached about the data based on your analysis and visual representation

Database Module Rubric

Data Table

- Target - Data table meets requirements and contains meaningful data for analysis
- Developing - Data table meets requirements and contains somewhat meaningful data
- Not on Target - Data table does not meet requirements and/or does not contain meaningful data

Data Statistics

- Target - All required descriptive statistics are included
- Developing - Most of the required descriptive statistics are included
- Not on Target - Few of the descriptive statistics are included

Data Visualization

- Target - Data visualization chosen enhances the interpretation of the data
- Developing - Data visualization chosen represents the data
- Not on Target - Data visualization missing or does not represent the data

Conclusions

- Target - Conclusions from data analysis and visualization are valid and meaningful
- Developing - Conclusions are made from the data analysis and visualization
- Not on Target - No conclusions are made