

**IQRA NATIONAL UNIVERSITY, PESHAWER**

**Final term Assignment 2020**

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COURSE: Data analysis using Spss

DEPARTMENT: B.B.A

MODULE: 8th semester

SUBMITTED TO: Sir. Raza Ahmed Khan

SUBMISSION DATE: 27-06-2020

# Q#1 (a) Write down the fundamental steps for research process with daily life example.

**Ans:**  Step One: Define research problem

First of all when we research on something we need to deeply into the problem statement and define the objective of the research we are conducting.

For Example: I am directed to calculate the average person surfers his maximum time on the internet in this pandemic.

# Step Two: Review of literature

Once the problem statement is defined, second part is to write a brief summary of mentioning all objectives and important factors of such research and submits it to the research committee for approval.

For Example: I will write the problem in the manner which resembles that this research is important to conduct and will benefit in future. Mentioning important factors of the problem and submit it to my teacher.

# Step Three: Formulate hypotheses

Hypothesis should be very specific and limited to the piece of research in hand because it has to be tested. The role of the hypothesis is to guide the researcher by delimiting the area of research and to keep him on the right track.

For Example: I will submit the hypotheses on the basis of consequences which I will face during the study and research of particular data, which mean I will mention the limitations where I could be incorrect in finding the correct result but it is important to calculate the boundaries of the research.

# Step Four: Preparing the research design

The purpose of Research design is to identify my expenditure upon the time, experimentation, exploration and diagnosis for my research program.

For Example: I will calculate the minimum expenses for my journey and routes through which I can collect my data easily over time.it also defines the strategy and methods of preparing the data.

# Step Five: Data collection

There are two ways of collecting data PRIMARY TYPE and SECONDARY TYPE

Primary collection: it can be collected through

1. Personal interview
2. Telephonic interview
3. Mailing the questionnaire
4. By observation

Secondary collection:

1. News papers
2. Previous records
3. History

For example: I will collect from both types because in this situation going out side is prohibited that’s why I will get the help of Google or interviewing persons via telephone.

# Step Six: Data analysis

Now come the time to analyses the data which can be done through tabulation, coding or editing the data

For Example: I will analyses the data one by one and prepare it into manner way to understand better and looks easy for a reader and also easy to interpret

# Step Seven: Interpretation and report writing

At the end the data is entered into such software or mechanism where its mean median and mode from statics.

For example : Spss is the better tool to extract the data into tabular form as well as pictorial form where anyone can easily understand the interpretations.

**(b) Differentiate between Inductive and Deductive Research Methods.**

# Deductive research Method

Deductive research is known as developing the hypothesis on existing theory and the going into it more deeply by generating more ideas we can say that going from general to specific .

 For Example : taking the research from out-source taking guidelines and then going to specific and finde observation by self.

# Inductive research method

It is the opposite of deductive method where we go from specific to general.

For Example: Taking the first question or observation by self then going deep into the study and find hypothesis and find relevant result to generalization. Most of people follow this pattern.

**Q#2(a) Elaborate the word “Data Checking “& “Validity of the Data “.**

**Ans:**

**Validation of data:** Data validation is an essential part of any data handling task whether you are in the field collecting information, analyzing data, or preparing to present your data to stakeholders. If your data is not accurate from the start your results definitely won’t be accurate either. That’s why it is necessary to verify and validate your data before it is used.

It can be validate through programs or scripts

Data validation rules:

* Data type (ex. integer, float, string)
* Range (ex. A number between 35-40)
* Uniqueness (ex. Postal code)
* Consistent expressions (ex. Using one of St., Str, Street)
* No null values

**Data checking:** data checking is the method of inquiring that the tools and techniques which are used correct and the results are acceptable. We use lot of software’s for data checking which helps us to identify and correct the mistakes during collection of data and analyzing it.

**(b) Interpret the following table with respective statistics;**

* The mean of the data is 52.7750 and its St. Error is .67024
* After trimming data 5% on both end the mean is 53.1389 showing the mean writing scour
* Median is 54 showing the middle scour in the data
* Variance 89.844 showing the per square variation of data from mean52.7750
* Standard deviation is 9.47859 showing the per-unit variation from mean 52.7750 of the data
* The minimum of the data is 31 and maximum is 67.
* Its range is min-max =67
* Interquartile range =14.75
* Skewness of data is -.482 showing it is negative which mean left tail is longer
* The negative kurtosis showing that the distribution has lighter tails and a flattermpeak than the normal distribution.

**Q#3(a) Interpret the following table**

This data is being divided into two parts that MALE AND FEMALE

The total number of are 123 from which 62 are males and 61 are females.

Each of their frequency is being given.

Interpretation for the table for male and female:

 The frequency for the males are given 62 out of 123 and the percent is 50.4 this shows that it has the higher percentage out of 100 so the graph that will be drawn greater.

The valid percent is also the same 50.4 and the cumulative

Frequency is also 50.4.

Now the total numbers of the females are 61 and its percentage is 49.6 so the graph will going to be drawn shorter and it valid percent is also the 49.6 because there is no missing values.

you add the cumulative percentage of males and females it make 100 .

So in this table the frequency of male are 62 which is the highest frequency and it percentage is 50.6 and it cumulative is also greater than females so the graph will move upward then female’s graph.

**(b) Explain the following figure**

In this graph shown that the percentage for the male are 55.86 and the female percentage is 44.14 which is very much quite clear that the graph of the male is moving upwards then female just because of their percentages are shown

**Q#4 Explain the following Normal Distribution**

The graph that s drawn is known as the normal distribution graph.

On the left side all negative values lies and on the right side all the positive values lies.

Its symmetry means that 50% of cases lie to either side of the central point as defined by the mean.

Two of the other most frequently-used representations are the portions lying between plus and minus one standard deviations of the mean (containing approximately 68% of cases,)

And that between plus and minus 1.96 standard deviations (containing approximately 95% of cases,), sometimes rounded up to 2.00 for convenience.

Thus, if a variable is normally distributed, we expect 95% of the cases to be within roughly 2 standard deviations from the mean.

 If we do +1 of the standard deviation then we will move ahead and if we do -1 then we will move behind if we go for 2 then 68% of the data will be covered and if we move -2 then we will cover the 95% of the data if we make it 3 standard deviation the 100% data will be covered.

**END OF PAPER**