

Amjad hameed

**IQRA National University
Department of Electrical Engineering
Subject: Research Methodologies**



Assignment

Student ID: ...15596

Question No: 1

- a) Differentiate between Search and Research. (05)
- b) Why it is necessary to know about different methods in Research Methodology? (05)

Question No: 2

- a) Explain the following: (05)
 - i) Epistemology
 - ii) Methodology
 - b) Differentiate between Qualitative and Quantitative Methods of research. (05)
-

Question No: 3

Assume that you are the Mayor of Greenwood, a small town in Illinois, and you've got to make decision based on the information collected from the following research study.

The chief of police wants to experiment with increasing the number of patrol officers (X) to reduce the crime rate (Y). The chief invites all twelve area captains to participate in the experiment; only the 103rd volunteers participated. In October, patrol officers in the 103rd are increased by 15%. Reported crime drops 5% between September and December. The chief now wants to implement the program citywide.

Test your research survey with the following case. (10)

©Good Luck©

Q.2

a) Explain the following

i) Epistemology

ii) Methodology

Ans) **EPISTEMOLOGY:**> epistemology is the branch of philosophy concerned with the theory of knowledge . A discipline that focus of how knowledge is produced and validated. it analyzer the nature of knowledge and how it relates to similar notions such as truth belief and justification.

Epistemology can be defined as study of criteria by which the researches defined of criteria by which the researches decides what does and does not form of knowledge.

METHODOLOGY:>

The specific procedure or techniques used to identify select, process and Analyze information about a topic, Methodology is based on theories method, technical approach to do your research (quantitative and Qualitative) on any topic.

Methodology deal with practices and directions of how to do something

Q.2

(b) Differentiate between Qualitative and Quantitative method of research

ANS

Qualitative Research	Quantitative Research
ethnography	True experiment
Case study	quasi experiment
survey	Meta analysis

Focus analysis	P(2)
Text analysis	
<p>Methods include focus groups, in-depth interviews, and reviews of documents for types of themes</p> <p>Focuses on exploring ideas and formulating a theory or hypothesis</p> <p>Mainly expressed in numbers, graphs and tables</p> <p>Is analyzed by summarizing, categorizing and interpreting</p> <p>Text-based</p> <p>More in-depth information on a few cases</p>	<p>Surveys, structured interviews & observations, and reviews of records or documents for numeric information</p> <p>Focuses on testing theories and hypotheses</p> <p>Mainly expressed in word</p> <p>Is analyzed through math and <u>statistical analysis</u></p> <p>Number-based</p> <p>Less in-depth but more breadth of information across a large number of cases</p>

ETHNOGRAPHY, descriptive study of a particular human society or the process of making such a study

TEXT ANALYSIS, sometimes referred as *text mining*, is the automated process of understanding and sorting unstructured text, making it easier to manage

A FOCUS GROUP, is a gathering of deliberately selected people who participate in a facilitated discussion intended to elicit consumer perception about a particular topic or area of interest

CASE STUDY, a process or record of research into the development of a particular person, group, or situation over a period of time.

TRUE EXPERIMENT, A type of experimental design where the researcher randomly assigns test units and treatments to the experimental groups. Examples of true experimental designs are: pre-test - post-test control group, post-test only control group, and a Solomon four group, six-study design

QUASI-EXPERIMENTA It differs from experimental research because either there is no control group, no random selection, no random assignment, and/or no active manipulation."

META-ANALYSIS is a set of techniques used "to combine the results of a number of different reports into one report to create a single, more precise estimate of an effect"

Q#1 a) Differentiate between search and research

ANS

Search	Research
<p>Search is a random process of trying to identify something in a non-systematic manner.</p> <p>Search does not require any specific set of skills or expertise; anyone can conduct a search.</p> <p>Search is try to find something by looking or otherwise seeking carefully and thoroughly,</p>	<p>Research is a process of analyzing data and information in order to establish facts and get the required conclusions</p> <p>Research is mostly used to improve the world as it forms the systematic foundation through which new knowledge is attained, existing knowledge is improved and new techniques and processes are developed</p> <p>In conducting a research, the researcher should have a specific set of skills and great expertise in order to conduct it successfully. Certain aspects of the research process such as the results analysis require additional training.</p> <p>Research requires a specific plan to proceed</p>

Taking up the example of NASA, we see that the space missions on which it sends shuttles conduct search and return with all the findings. This information is analyzed to establish facts and to arrive at certain conclusions through research by scientists at NASA.

Q.1(b). why it is necessary to know about different method in research methodology

ANS

AS A GRADUATE STUDENT To be able to read and understand the empirical literature in your field. To become a critical consumer of information

AS A GRADUATE STUDENT PREPARING A THESIS To be able to both design and implement your thesis or dissertation as well as future studies that interest you

AS A FUTURE PRACTITIONER To be able to intelligently participate in research project, evaluation, and studies under taken by your institution

AS AN EDUCATED CITIZEN To understand the different between scientifically acquired knowledge and other kinds of information

QUESTION#3

Assume that you are the mayor of Greenwood, a small town in illiois, and you've got to make decision based on the information collected from the following research study

The chief police wants to experiment with increasing the number of patrol officers(X) to reduce the crime rate (Y). The chief invites all twelve area captains to participate in the experiment. only the 103rd volunteers participated. In October, patrol officers in the ao3rd are increased by 15%. Reported crime drops 5% between September and December. the chief now wants to implement the program city wide

Test your research survey the following case.

ANS :-> it is related to "prediction research method".

Increasing number of new officers may result in lesser crimes, but more new officers will cause more financial resources. There are some steps which should be taken before increasing or recruiting new officers to reduce crimes.

- 1) in the era of technology, we can take help from it. If there is an android or ios App in every citizen cell phone. Every citizen should report through app anything they find suspicious. complaint should be directly sent to nearby police.
- 2) There should be patrol officers after each 10 km so when someone report suspicious activity patrol officer can reach fastly.
- 3) There should be CCTV Cameras installed everywhere is possible

All these steps will have great impact on decrease of crimes. Above steps will have lesser cost than recruiting new officers