**BIYANI INSTITUTE OF SCIENCE AND MANAGEMENT**

**MBA II Sem**

**MODEL ANSWER PAPER-2018**

RESEARCH METHODOLOGY

**“SECTION A”**

**Q 1. Write short notes on :**

1. **Explanatory Research**
2. **Qualitative research**
3. **Random Sampling**
4. **Schedule Method**

**Explanatory Research** - Investigation into a problem or situation which provides insights to the researcher. The research is meant to provide details where a small amount of information exists. Explanatory research attempts to clarify why and how there is a relationship between two aspects of a situation or phenomenon. This type of research attempts to explain, for example, why stressful living results in heart attacks; why a decline in mortality is followed by fertility decline; or how the home environment affects children’s level of academic achievement.

**Qualitative research** - Qualitative research deals with phenomena that are difficult or impossible to quantify mathematically, such as beliefs, meanings, attributes, and symbols. Qualitative research is especially important in the behavioral sciences where the aim is to discover the underlying motives of human behaviour. Through such research we can analyze the various factors which motivate people to behave in a particular manner or which make people like or dislike a particular thing

**Random Sampling -** For a sampling design to be called a random or probability sample, it is imperative that each element in the population has an equal and independent chance of selection in the sample. The choice of an element in the sample is not influenced by other considerations such as personal preference. The choice of one element is not dependent upon the choice of another element in the sampling. The selection or rejection of one element does not affect the inclusion or exclusion of another

**Schedule Method -** A schedule is a structure of set of questions on a given topic which are asked by the interviewer or investigator personally. The order of questions, the language of the questions and the arrangement of parts of the schedule are not changed. However, the investigator can explain the questions if the respondent faces any difficulty. Schedule include open-ended questions and close-ended questions. Open-ended questions allow the respondent considerable freedom in answering. However, questions are answered in details. Close-ended questions have to be answered by the respondent by choosing an answer from the set of answers given under a question just by ticking.

**Q 2 . Briefly describe the different steps involved in a research process.**

Scientific research involves a systematic process that focuses on being objective and gathering a multitude of information for analysis so that the researcher can come to a conclusion. This process is used in all research and evaluation projects, regardless of the research method (scientific method of inquiry, evaluation research, or action research). The process focuses on testing hunches or ideas in a park and recreation setting through a systematic process. In this process, the study is documented in such a way that another individual can conduct the same study again. This is referred to as replicating the study. Any research done without documenting the study so that others can review the process and results is not an investigation using the scientific research process. The scientific research process is a multiple-step process where the steps are interlinked with the other steps in the process. If changes are made in one step of the process, the researcher must review all the other steps to ensure that the changes are reflected throughout the process. Parks and recreation professionals are often involved in conducting research or evaluation projects within the agency. These professionals need to understand the eight steps of the research process as they apply to conducting a study.

Stage 1. Selection of topic

Stage 2. Reviewing the literature

Stage 3. Development of theoretical and conceptual frameworks

Stage 4. Clarification of the research question

Stage 5. Research design

Stage 6. Data collection

Stage 7. Data analysis and discussion of the findings

Stage 8. Drawing conclusions

Q 3. What is Chi-Square test? Explain the Chi Square Test for Independence.

Ans. A **chi-squared test**, also written as ***χ*2 test**, is any statistical hypothesis test where the sampling distribution of the test statistic is a chi-squared distribution when the null hypothesis is true. Without other qualification, 'chi-squared test' often is used as short for *Pearson's* chi-squared test. The chi-squared test is used to determine whether there is a significant difference between the expected frequencies and the observed frequencies in one or more categories.

In the standard applications of the test, the observations are classified into mutually exclusive classes, and there is some theory, or say null hypothesis, which gives the probability that any observation falls into the corresponding class. The purpose of the test is to evaluate how likely it is that the null hypothesis is true, given the observations.

Chi-squared tests are often constructed from a sum of squared errors, or through the sample variance. Test statistics that follow a chi-squared distribution arise from an assumption of independent normally distributed data, which is valid in many cases due to the central limit theorem. A chi-squared test can be used to attempt rejection of the null hypothesis that the data are independent.

Also considered a chi-squared test is a test in which this is *asymptotically* true, meaning that the sampling distribution (if the null hypothesis is true) can be made to approximate a chi-squared distribution as closely as desired by making the sample size large enough.

**Chi Square Test for Independence**

The chi square test for independence of two variables is a test which uses a cross classification table to examine the nature of the relationship between these variables. These tables are sometimes referred to as contingency tables. These tables show the manner in which two variables are either related or are not related to each other. The test for independence examines whether the observed pattern between the variables in the table is strong enough to show that the two variables are dependent on each other or not. While the chi square statistic and distribution are used in this test, the test is quite distinct from the test of goodness of fit. The goodness of fit test examines only one variable, while the test of independence is concerned with the relationship between two variables. Like the goodness of fit test, the chi square test of independence is very general, and can be used with variables measured on any type of scale, nominal, ordinal, interval or ratio. The only limitation on the use of this test is that the sample sizes must be sufficiently large to ensure that the expected number of cases in each category is five or more. This rule can be modified somewhat, but as with all approximations, larger sample sizes are preferable to smaller sample sizes. There are no other limitations on the use of the test, and the chi square statistic can be used to test any contingency or cross classification table for independence of the two variables. The chi square test for independence is conducted by assuming that there is no relationship between the two variables being examined. The alternative hypothesis is that there is some relationship between the variables. The nature of statistical relationships between variables has not been systematically examined in this textbook so far.

**Q 4. What is research Design ? explain the important concepts relating to research**

**design?**

### The research design refers to the overall strategy that you choose to integrate the different components of the study in a coherent and logical way, thereby, ensuring you will effectively address the research problem; it constitutes the blueprint for the collection, measurement, and analysis of data.

### Important Concepts Relating To Research Design

### 1 **Dependent and independent variable**

### **2 Extraneous variable**

### **3 Control**

### **4 Confounded Relationship**

### **5 Research Hypothesis**

### **6** **Experimental and non Experimental Hypothesis testing Research**

### **7 Experimental and control groups**

**“SECTION B”**

CASE STUDY

Compute the value of t- test from the following data .

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Subject | **1** | **2** | **3** | **4** | **5** |
| Before | **2** | **0** | **4** | **2** | **3** |
| After | **8** | **4** | **11** | **5** | **8** |