CMR Institute of Technology
Department of Management Studies
Answer key
II Internal test – II semester MBA (2017-19 Batch)
Subject: Research Methods   Sub Code: 17MBA23
Date: 27.04.2018   Time: 9:00-10:30a.m.   Duration: 90 mins

1. a) What is Omni bus survey?

Omnibus survey is one of the categories of Commercial survey organized by research organizations. It is the third category & also called as Shared survey. These surveys are determined by a research firm & consist of questions supplied by multiple clients. Such surveys can involve mail, telephone, or personal interviews. The respondents may be drawn from either an interval panel or randomly from the larger population.

In this survey the cost per question declines as the number of questions increases. This is useful for measuring consumer's responses to competitive moves, adverse publicity, & environmental changes.

b) Discuss the types of non sampling errors that can affect the research study?

The errors involved in the collection, processing and analysis of a data may be broadly classified under following heads.

Total Error
Random Sampling error
Non sampling error
SAMPLING BIASES ARE DUE TO:
- Faulty selection of the samples
- Substitution
- Faulty demarcation of sampling units
- Constant error due to improper choice of the statistics for estimating the population parameters

NON SAMPLING ERRORS
Faulty planning or definitions
Response errors
   a. Response errors may be accidental
   b. Prestige bias
   c. Self interest
   d. Bias due to interviewer
   e. Failure of respondent's memory
Non response bias
Errors in coverage
Compiling errors
Publication errors

c) Explain different types of primary data collection methods?

Methods of Primary data collection:
Important methods of Primary data collection are:
   1) Observation
   2) Interviewing
   3) survey
   4) Experimentation

5) Simulation
6) **Projective technique**

2. a) What are projective techniques? Mention the types of Projective Techniques?

Projective techniques involve presentation of ambiguous stimulus to the respondents for interpretation.

In doing so, the respondents reveal their inner characteristic popular during 1950's.

Types of Projective Techniques
a) **Visual Projective Technique**: Rorschach Tests, Thematic Appreciation Test (TAT), Rosen weigh test of cartoon Test, Picture frustration Test and Holtzan inkblot Test.
b) **Verbal Projective Technique**: Word association test, Sentence completion test and Story completion test.
c) **Expressive Projective Technique:** Play, Drawing, Finger painting, Role playing.

b) Highlight the characteristics of primary and secondary data?
The characteristics of primary and secondary data are:

Characteristics of primary and secondary data
Primary data:-
- **Reliability:** as the primary data is collected originally by the researcher, hence it is recent as well as accurate. Therefore it is more reliable than secondary data.
- Variety of techniques primary data can be collected through various techniques. There are numerous tools and techniques available to record and analyse primary data such as interview, questionnaires, observation, audits etc. These methods allow the researchers to explore effectively in almost every area where research is possible.
- **Wide coverage including special cases**: primary data is applicable in many areas. Sometimes researchers want information regarding particular cases for which previous literature is not available. Collecting primary data is the only solution for these specific research problems as it is only source of information, which can be trusted for effective solution.
- **Complete control over process**: sometimes, organisations ask the researchers to conduct the research in specific area rather than in broader perspective. Collecting the primary data allows the researchers to collect the data of their concern, and represent it in the ways that can benefit the organizations.
- **Cost effective collection**: the collection of primary data is quite cost-effective. Often, unnecessary time and money is wasted in collecting secondary data, and information proves to be useless. But in primary data collection, the researcher concentrates his effort on potential sources of data, which will provide reliable information in optimal cost.
- **Sole ownership of information:** as the information processed from primary data is fresh and original, it can be copyrighted. This way, the researcher becomes the owner of that information. He/she can take the benefit of information by sharing it with organisations.

Secondary data:-
- **Economical**: the secondary data is easier and cheaper to access. It is more economically collected compared to the primary data. Some of the secondary data can be obtained with absolutely no cost.

- **Less time taking:** As secondary data is already processed and compiled by other researchers, it takes very less time to collect this data. There is variety of secondary data available from various sources hence researcher just needs to search data from these sources.
- **Quality**: the quality of the secondary data is unique and rare as these are originally collected by trained professionals who have expertise in data collection.
- **Measuring instrument are not required** : in collecting secondary data, there is no need any tool and technique for gathering required information, as it has already been recorded and processed by other researchers.
- **Availability:** secondary data is widely available hence easily accessible. Secondary data are helpful, especially when it is quite difficult to collect primary data. Majority of the secondary data is available which can be utilised for a particular research.
- **Bases for comparison**: secondary data can also be used for comparative analysis with primary data. This way, researchers can make many interpretations regarding the data.
- **Generates feasible alternatives**: secondary data is a source which provides a variety of alternatives of alternatives to researches related to various problems in research. Researchers are required to analyse and study the solutions provided by these data through various approaches, sources, and methods, etc.

advantages	disadvantages
Economy	Relevance
Quickness	Accuracy
Quality	Existence of obsolete information
No measuring instruments	Non disclosure of research findings
Availability	rarely catering to need
Basis for comparison	Difficulty in source identification
Generates feasible alternative	Errors in recording & transferring information from one source to another source.

Explain the four basic types of scales with examples?
Data types

1) **Nominal Scales (Data):** classifies /partitions a set into categories that are mutually exclusive and collectively exhaustive. Each category is given a name or assigned a number and the numbers are just symbols used for labeling a group.
   E.g.: Political supporters in USA can be classified into Democrats or Republicans. These two groups are exclusive, at the same time they are also exhaustive i.e. every member of the population will be covered in these groups.
2) **Ordinal scales (Data)**: This scale ranks objects or individuals along the continuum of the attribute being scaled from one largest to smallest or first to last and so on.
   E.g.: If a respondent is asked to rank three books on the content matter. He may give the following ranks.

Item	Rank
Book A	II

Book B	III
Book C	I

This implies that Book A is better than Book B and Book C is better than Book A therefore, it can be concluded that Book C is better than Book B also. However it does not imply the distance b/w rank I, II & III, in other words it does not show the extent to which each is better than the other. Thus it has order but no distance.

3) **Interval Scale (Data)**: it has the characteristics of nominal and ordinal data, in addition it has the property of equality of interval i.e. the distance b/w I and II is the same as the distance b/w II and III.

   e.g.: if we are measuring the performance of three students A, B and C on an interval scale, and we get the score 1, 3, 7 then it can be graphically depicted as follows:

A   **B**   **C**

0   1   2   3   4   5   6   7   8   9   10
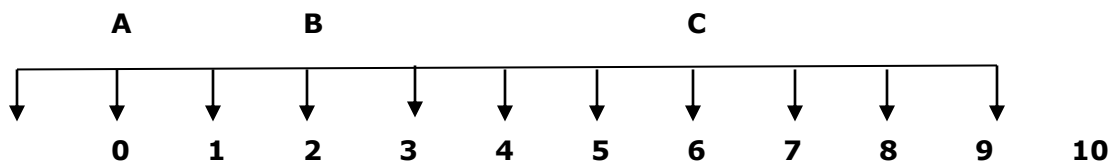
Comparing the performance of these students on these intervals it can be said that the difference in the performance of Band C is twice the difference in the performance of A and B.

4) **Ratio scales (Data)**: is characterized by the presence of order, distance and unique origin. It measures the absolute amount of variable. Height, weight, area, is examples ratio scale, it has an absolute zero and a person weighing 80 kg is twice as heavy as a person weighing 40 kg.

E.g. weighing machine is a good example of ratio scales.

What are the characteristics of good scaling techniques?

Characteristics of good scaling techniques or Criteria for good measurement are:
- Unidimensionality.
- Linearity.
- Validity.
- Reliability.
- Simplicity.
- ` Practicality.

Define likert scales and semantic differential scales with an example each?
likert scales and semantic differential scales with an example each

LIKERT SCALE:A measurements scale with 5 response category ranging from "strong disagrees to indicate a agree" which requires the respondents to indicate a degree of agreement (or) disagreement with each of the series of statements related to the objects.

statements	Strongly Agree (5)	Agree (4)	Undecided (3)	Disagree (2)	Strongly disagree (1)
A person's standard of living is judged only against income earned by him.					
Standard of living of the person can be increased by borrowing money					

SEMATIC DIFFERENTIAL: A seven points rating scale with end points associated with by polar labels that have semantic meaning.

Pls mark (X) the blank that best indicates how accurately one of the other adjective describes what the store means to you. Pls be sure to mark every scale: do not omit any scale.

> More Super Store is
> Powerful ---:---:---:---:-X-:---:---: Weak
> Unreliable ---:---:---:---:---:-X-:---: Reliable
> Modern   ---:---:---:---:---:---:-X-: Old Fashioned
> Cold   ---:---:---:---:---:-X-:---: Warm
> Careful   ---:-X-:---:---:---:---:---: careless

Discuss the Questionnaire construction procedure and also state the importance of questionnaire

The process is not a matter of simply listing questions that comes to researchers mind. It is a rational process involving much time, effort and thought. It consists of the following steps:

  a. **Data need determination**
     The data required for a specific study can be determined by deep analysis of the research objectives, the investigative questions relating to each of the research objectives, hypothesis and the operational definitions of the concepts used in them.

  b. **Preparation of dummy tables**
     With adequate coverage of the information required for the study and also with securing the information in the most usable form, the best way to ensure these requirements is to develop "dummy tables in which to display the data to be gathered.

  c. **Determination of the respondent's level**

  d. Answers those questions such as who are our respondents? Are they person with specialized knowledge relating to the problem under study? Or they lay people? What is their level of understanding and knowledge

  e. **Data gathering method decision**

We must choose the method of collection of data to be used, which communication mode is appropriate, e.g. face-to-face interview or mailing.

f. Instrument drafting

First a broad outline of the instrument ma be drafted,

Second the sequence of these grouping must be decided.

Third, the question to be asked under each group heading must be listed. All conceivable items relevant to the data need should be compiled.

g. Evaluation of the draft instrument

This evaluation may be done in terms of the following criteria:

The relevance of each question to research objectives and investigative questions.

The appropriateness of the type of question: open ended or structured

The clarity and unambiguity of the question.

The practicability of the question

The validity of question.

h. Pre testing

The revised draft must be pre-tested in order to identify the weakness of the instrument and to make the required further revisions to rectify them.

Specification of procedures/ instructions

i. The procedures or instructions relating to its use must be specified. Specification is one way to ensure that different interviews will deal with specific questions in a standardized manner.

j. Designing the format

The format should be suited to the needs of the research. The instrument should be divided into different sections relating to the different aspects of the problem.

Once the information needed is determined, we construct questionnaire which involves four major decision areas, they are

k. Question relevance and content

Should be relevant to meet the research objective

Should yield significant information for answering an investigative question.

Consider its coverage

Is it of proper scope

Question to provide the information needed to interpret the response fully

Whether respondents known the answer to the questions.

Question wording

l. Shared vocabulary

The exact understanding b/w the investigator and the respondent calls for the use of vocabulary common to both parties.

Exactness

The words should be exact or precise, reflecting what the question content is intended to mean.

m. Simplicity

Words should be simple, should be simpler equivalents used or clarified in detail.

Neutrality

Words that cause undue influence of prestige or bias can result in inaccurate answers. The words must be neutral ones, free from the influence of fear, prestige, bias or emotion.

n. Response form or types of questions

Open ended questions – these are unstructed ones, providing free scope to the respondents to reply with their own choice of words and ideas.

closed ended questions – these are structured ones with two or more alternative responses from which respondents can choose. They contain standardized answers and they are simple to administer and easy to complete and analyse.

o. **Question order or sequence**

Overall sequence: Which can ease the respondent's task in answering and can either create or avoid bias due to context effects.

Intra sequence – which includes funnel sequence and inverted funnel sequence.

<div align="center">Part- B</div>

Discuss the different types of probability and non-probability sampling techniques?

Sampling techniques or methods

Two types: **Probability sampling – Random Sampling**

        Non-Probability Sampling –

    Random Sampling

Probability Sampling – Random Sampling Means, picking out units "at random" i.e., haphazard or hit and miss way.

1. **Simple random sampling**

   This technique gives each element an equal and independent chance of being selected. An equal chance means an equal probability of selection.

           The lottery method

           Table of random numbers

           Use of computers

2. **Stratified random sampling**

   This is an improved type of random or probability sampling. In this method, the population is divided into homogeneous groups or strata, and stratum.

   This helps: in increasing samples efficiency

              Provides adequate data for analyzing various sub-options.

              Applying different method to different strata.

   Eg: university students can be divided based on basis of discipline and each discipline again on the basis of juniors & seniors.

3. **Systematic random sampling**

   It consists of taking every 'kth' item in the population after a random start with an item from l to K.

   E.g: if desired to select a sample of 20students from a list of 300 students, divide 300 by 20 the quotient is 15, select a random number b/w 1 and 15 using lottery method or a table of random numbers. Let the selected number is 9. Then the students numbered are 9(+15)=24, 24(+15)=39, 39(+15)=54 are selected sample.

4. **Cluster sampling**

   Is random selection of sampling units consisting of population elements. Each such sampling unit is a cluster of population elements. Then from each selected sampling unit a sample of population element is drawn by either simple or stratified random selection.

   Eg: select a sample of 1000 households out of 40,000 households in a city.

Population	Element	Cluster or sample unit
City	Household	Blocks
City	Individuals	Household

University	Students	Affiliated colleges
Rural areas	household	Villages
Industrial areas	Industrial unit	Industrial estates

5. **Area sampling**

   Is an Important form of cluster sampling. In larger field surveys cluster consisting of specific geographical areas like district, taluks, villages or blocks in a city are randomly drawn. As geographical areas are selected as sampling units in such cases, their sampling is called area sampling.

   E.g: when the area covered by a study is city, take a map of the city, lay a transparent sheet with grid line it divides the city into squares -100 areas, leave 30 squares because of parks, commercial and public buildings etc, number the squares, let average number of household is 80, if the required sample of household is 640, to determine the number of square to be selected by dividing this total by 80 i.e., 8 squares. Study all the households in each of the sample eight squares.

6. **Multi stage sampling and sub sampling.**

   In this method, sampling is carried out in two or more stages. i.e., at each stage a sampling unit is a cluster of the sampling units of the subsequent stage.
   Eg: from a population of 40,000 households in 800 streets we can select a sample of 400 individual households or a sample of 8 streets, from it 10

7. **Random sampling with probability proportional to size.**

   If one primary cluster has twice as large a population as another. It is given twice the chance of being selected. The '**PPS**' is a better method for securing a representative sample of population elements in multi-stage cluster sampling.

8. **Double sampling and multi phase sampling**

   Refers to the subscription of the final sample from a preselected larger sample that provides information for improving the final selection. When this procedure is extended to more than two phases of selection, it is then called as multi-phase sampling.
   For eg: in a consumer behaviour study relating to television, a common set of data may be collected from a sample of household and a set of additional data from a sub-sample of cases possess colour TV's.

9. **Replicated sampling**

   Replicated or interpenetrating sampling involves selection of a certain number of sub-samples rather than one full sample from a population. All the sub samples should be drawn using the same sampling technique and each is a self contained and adequate sample of the population.
   This can be used with any basic sampling technique: simple or stratified, single or multi-stage or single or multi-phase sampling.
   E.g.: to study a population of 3000 university students, instead of studying a sample of 300 students needed to be study, two groups of 150 or 5 groups can be studied.