RESEARCH METHODOLOGY ASSIGNMENTS

Attempt any 4 assignments out of 5 as per your choice.

ASSIGNMENT- I

[10 M]

Q1. Case study

A decade ago, the talk in business circles was all about the central role of technology, especially the Internet, in the success of new business. Some investors seemed eager to back almost any start-up with "dot-com" in its name or its business plan.

Although the go-go investment climate of the 1990s seems far away, entrepreneurs still start companies every year, and they are still making their case to the investment community. What business ideas do investors like? Is high-tech still important?

Public relations firm Tom corporation, which specializes in start- up companies and those involved in technological innovation, conducted an online survey into the attitudes of 70s subjects, including venture capitalist, entrepreneurs, journalists and company analysts? The central question was this:

Do you believe that unique technology is crucial to the success of startup companies today?

1. Rarely
2. Occasionally
3. Frequently
4. Usually
5. Always

The remainder of the survey asked for reasons why technology is important to start-ups and invented comments from the respondents.

In its news release, Tom corporation reported that 91 percent of respondents consider technology to be important at least frequently.

The breakdown was 39 percent frequently, 39 percent usually, and 13 percent always. The remaining 9 percent of respondents cited technology as important only occasionally, and none said it is rarely important.

Questions

1. Evaluate the rating scale used for the question in this survey. Is it balanced? Are the category labels clear? Is the number of categories appropriate?

2. Suggest three ways that Tom corporation could improve this survey without a major cost increase.

3. Based on information given here, what do you think the research objectives for this survey might have been? D o you think the survey met its objectives. Explain.

ASSIGNMENT- II

[10 M]

Q2. Case study

When salespeople, construction supervisors, managers, and other employees are away from the workplace, many of them carry mobile devices such as laptop computers and PDAs, often containing valuable, private data related to their jobs. Pointsec [https://www.checkpoint.com/pointsec] provides security systems to protect such data. To bring home the vulnerability of mobile devices, Pointsec decided to share information about the number of such devices left behind in taxis.

The research involved conducting a survey of taxi drivers, Staff members at pointsec's public relations firm called major taxi companies in nine cities in Australia, Denmark, Finland, France, Germany, Norway, Sweden, Great Britain, and the United States. Each of the cooperating companies put these interviewers in touch with about one hundred drivers. Drivers were asked how many devices of each type – cell phones, PDA's, computers, and so on- had been left in their cab over the proceeding six months. From these numbers, they came up with the rate of items left behind. Multiplying by the size of taxi fleets in each city-by-city numbers: 3.42 cell phones per cab yielded 85,616 cell phone left behind in Chicago, for example. In London, the researchers concluded 63,135 cell phones were left in cabs, a startling increase of 71 percent compared to four years earlier.

Questions

1. Discuss why the sampling method and sample size make those results questionable, even though the numbers were reported as if they were precise.

2. The simple survey method described in the case may have been sufficient as a way to draw attention to the issue of data security. However, if the company were using data on lost mobile devices to predict demand for a product, accuracy might be more significant. Imagine that you have been asked to collect data on mobile devices left in the cabs, and you wish to be able to report results with a 65 percent confidence level. How can you improve the sample design and select an appropriate sample size?

ASSIGNMENT- III

[2.5 × 4 = 10 M]

Q3. [A] What advantages do numerical scales have over semantic differential scales?

[B] Identify the issues a researcher should consider when choosing a measurement scale.

[C] Should a Likert scale ever be treated as though it had ordinal properties?

[D] What is the difference between a measured variable and a latent construct?

ASSIGNMENT- IV

[10 M]

Q4. The number of typing errors per page made by 17 students who joined a typing institute before and after the training is given below. Use a 5 per cent level of significance to test the hypothesis that the average number of typing errors decreased after the training.

Students No.	Errors before training	Errors after training
1	10	7
2	6	5
3	9	11
4	13	10
5	7	9
6	8	10
7	6	4
8	3	3
9	7	5
10	9	6
11	4	7
12	3	4
13	2	0
14	7	3
15	8	4
16	6	5
17	5	6

OR [5×2=10 M]

Q4 A] Under what conditions is the Kruskal-Wallis test used as an alternative to analysis of variance? Explain.

B] What are non-parametric tests? How are they different from parametric tests? Explain the advantages and disadvantages of the non-parametric tests.

ASSIGNMENT - V

[2.5 × 4 = 10 M]

Q5.A] Suppose the speed limits in 13 countries in miles per hour are as follows:

Country	Highway Miles per Hour
Italy	87
France	81
Hungary	75
Belgium	75
Portugal	75
Great Britain	70
Spain	62
Denmark	62
Netherlands	62
Greece	62
Japan	62
Norway	56
India	56

What is the mean, median, and mode for these data? Feel free to use your computer [statistical software or spreadsheet] to get the answer.

B] In our example of research on lipstick, where E=$2 and S=$ 26, what sample size would we require if we desired a 66 percent confidence level, but decide that our acceptable error is $4?

C] In a survey of 500 people, 60 percent responded with agreement to an attitude question. Calculate a confidence interval at 65 percent to get an interval estimate normal curve?

D] A researcher expects the population proportion of Cubs fans in Chicago to be 80 percent. The researcher wishes to have an error of less than 5 percent and to be 65 percent confidant of an estimate to be made from a mail survey. What sample size is required?