### ANSWERS TO CASES

**Chapter 1**

**Canadian Farmers Dealing with Stress**

In performing market research and other similar studies, it is important to properly identify target populations. In the case under study, the identification of the target population is important for the Canadian Agricultural Safety Association (CASA) because the farming industry represents a key sector of Western Canada’s economy. Stress among farmers is a growing cause for concern and as such, accurate survey results will benefit the future of the industry. In this type of research, it is also important to identify the sampling frame, the type of survey to be conducted, the type of data to be collected, the level of measurement of the collected data, and any other pertinent statistic that will ensure that the results of the research that is to be conducted by Western Opinion Research Inc. on behalf of CASA are pertinent, reliable, and usable.

1. One population that was identified was the population of farmers across Canada. Western Opinion Research conducted the research and survey throughout Canada and used the population of Canadian farmers to obtain its results. There were no other populations that were contacted by the opinion firm. Instead of attempting to contact the entire population of Canadian farmers, the research group conducted their survey by using a sample from the population of interest. The survey was completed by 1100 farmers across Canada. The measurements obtained from the survey were generally qualitative and percentages were used to describe them. The results allowed the CASA to infer on potential consequences of the stress encountered by farmers, and used these results to initiate preventative actions that would at least stabilize the stress levels of farmers, but with the added intention of decreasing them. The inferences made with statistical results were imperative in offering stress counselling resources to farmers.

The type of research that is conducted using the data obtained from studies such as the one commissioned by CASA allow organisations to use data analysis procedures in their normal course of business, whether it is for profit or not. The advantage of using inferential statistics, which are based on relevant samples, is that conclusions can be effectively drawn and which then pertain to the entire population under study, without having to conduct a census, which would most probably negatively impact the efficiency of the business operations.

2. a. ranking of the level of stress Ordinal level

b. number of farmers asking for help Ratio level

c. number of farmers aware of help resources Ratio level

d. number of farmers who try to manage stress Ratio level

e. number of farmers interested in access to resources Ratio level

f. number of farmers nearly out of business Ratio level

g. number of farmers who prefer dealing with stress

on their own Ratio level

h. number of farmers who prefer dealing with

professionals on the phone Ratio level

i. number of farmers who prefer dealing with

professionals in person Ratio level

j. age of respondent Ratio level

k. gender of respondent Nominal level

l. geographical region of respondent Nominal level

m. time farmers spend dealing with stress Ratio level

n. rating of stress-related factors Ordinal level

o. rating of reasons for not seeking help for stress Ordinal level

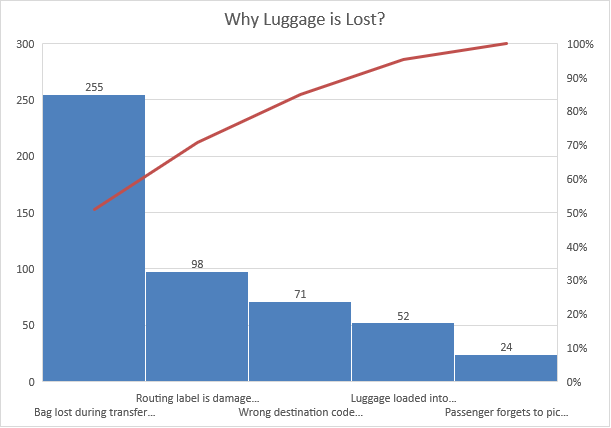
**Chapter 2**

**Southwest Airlines and WestJet Airlines Ltd.**

1. Shown below are three samples of visuals that could be generated to present the data. The student is encouraged to explore their own visualization options such as these and then write a brief report comparing the airlines.

2.

The Pareto Chart is a graphical technique for displaying problem causes. Question 2 of this case presents various causes for the problem of lost airline passenger luggage. Shown here is a Pareto Chart for the frequency of various causes associated with lost luggage.



The vertical bars of a Pareto Chart display the most common types of causes ranked in order of occurrence from left to right. This Pareto Chart shows that the number one cause of lost luggage is transfer from one plane to another (51% of lost luggage) followed by a damaged or lost routing label (an addition 20%). If an airline is undertaking an effort to significantly reduce the numbers of lost luggage, then they should start by tackling the “transfer” issue. In the quality improvement circles, this would be referred to as starting with the “low lying fruit.” That is, if the transfer problem could be completely solved, an airline could reduce the numbers of lost luggage by 50%.

3.

Student answers will vary. There’s a strong correlation between the number of passengers and the seats per aircraft, with two exceptions around 100 seats and 140 seats, both with extremely high passengers. There’s a high, rather linear correlation between the number of passengers and the number of flights, with two exceptions around 600,000 flights and 750,000 flights, both with low passengers. For both of these apparent outliers, further investigation might be warranted to determine reasons for the extreme high and low number of passengers.