

Assignment 9

Big Data Characteristics and Sources

Educational Objective (EO)

Categorize the various characteristics and sources of big data available for insurance and risk management applications.

Instructions

Activity 1—Categorizing Characteristics of Big Data

Large Group Discussion

Ask participants to describe the five characteristics of big data. Record their responses on a flipchart. The five characteristics include: volume, variety, velocity, veracity, and value.

Debrief:

If necessary, review the characteristics of big data.

Activity 2—Identifying Sources of Big Data

Large Group Discussion

Post four blank flipchart pages on a wall and label them “Structured: External,” “Structured: Internal,” “Unstructured: External,” and “Unstructured: Internal.” Ask participants to provide examples of each category of big data.

Debrief:

Review the differences between structured and unstructured data, and internal and external data, using the examples provided by participants.

Data-Driven Decision Making

Educational Objective (EO)

Explain how data-driven decision making applies to risk management and insurance.

Instructions

Activity 1—Explaining the Purpose of Data-Driven Decision Making in Risk Management and Insurance

Group Activity Followed by Large Group Discussion

This activity is set up as a panel discussion. Divide the class into two groups. Assign one group to be the “Panelists” and the other group will be the “Audience.”

- Ask the panelists to study the course materials to ensure they are prepared for the questions from the “audience” on how data-driven decision making applies to risk management and insurance.
- Ask the audience to create questions that are open-ended and require more than simply "yes" or "no" answers. The focus of the questions should be on how using data-driven decision making applies to risk management and insurance.

Have the panelists face the audience. Begin the panel discussion by having the audience ask the panelists their prepared questions. Any member of the panel can respond to the questions.

Debrief:

Review with the class.

Training and Evaluating a Predictive Model

Educational Objective (EO)

Explain how to train and evaluate a predictive model.

Instructions

Activity 1—Describing the Steps in Training and Evaluating a Predictive Model

Group Activity Followed by Large Group Discussion

Divide participants into two groups. Provide each group with a flipchart. Assign one group the process of Training a Predictive Model, and the other group the process of Evaluating the Model. Ask both groups to create a flowchart that documents the steps involved in either training or evaluating a predictive model.

Debrief:

Ask each group to share their flowcharts with the class. Some follow-up discussion questions you might ask include: What is holdout data? Why might you employ cross-validation?

Overview of Big Data Analysis Techniques

Educational Objective (EO)

Summarize big data analysis techniques and their application to risk management and insurance.

Instructions

Activity 1—Summarizing Big Data Analysis Techniques

Group Activity Followed by Large Group Discussion

Assign each participant (or small group) one of the following data analysis techniques:

- Classification trees
- Regression models
- Cluster analysis
- Text mining
- Social network analysis
- Neural networks

Ask the participants to summarize their assigned data analysis technique. Then, ask them to come up with an example of how an insurer or risk manager might apply that technique.

Debrief:

Call on each participant or group in turn to present their summaries and examples.

Using Classification Tree Analysis in Claims Assignment

Educational Objective (EO)

Explain how classification tree analysis can be used to identify and assign complex claims.

Instructions

Activity 1—Analyzing Claims with a Classification Tree

Group Activity Followed by Large Group Discussion

Divide participants into small groups and provide each group with a flipchart. Ask the groups to complete the **Case Study—Homeowners Claims**.

Debrief:

Call on each group to present their classification trees.

Case Study—Homeowners Claims

Your team has been asked by your boss to perform a classification tree analysis on the homeowners claims received by your insurance company. Your boss would like the tree to help identify high-cost homeowners claims when they are first reported. Identifying the high-cost claims can help the insurer minimize the costs by assigning their most senior claims adjusters.

With your team, brainstorm a list of attributes you believe would contribute to the complexity of homeowners claims. List these attributes on the flipchart.

Next, identify five to ten attributes you feel would prove the most revealing as to the complexity of a homeowners claims. Use these attributes to create a classification tree on the flipchart for analyzing homeowners claims.