

Risk assignment

[Science](#), [Statistics](#)



498 Assignment 4 Spring 2013 Due Date: March 26, 2013 1. Consider the Luxury Seaside Hotel Risk Management case you put together in your previous assignment. Answer the following questions regarding each one of the risk sources you have identified (at least 4). i) If you desired to follow a statistical approach in the assessment of the risk, what hard data would you need, what hard data do you think would be available, what near accident data could be used to support the available insufficient accident/failed data? i) What would be the key probability distributions of interest, which of these do you think you would be able to estimate (given the data environment that you have imagined in (i))? iii) What regression relationships would be of interest, which of these do you think you would be able to accomplish (given the data environment that you have imagined in (i))? Guideline for Answering / Grading: i) Data availability/unavailability scenarios should be reasonable and based on facts, observations, assumptions, examples, beliefs. the related discussions could be very brief). ii) Suggestions for the key random variables and the associated probability functions should be clearly stated and based on well founded arguments (again, the related discussions need not be very long). Parameters of these distributions and how are they to be estimated from the data environment imagined in (i) should be clearly stated. ii) Suggestions for the regression relationships should be clearly stated and based on well founded arguments (again, the related discussions need not be very long).

Related independent and dependent variables should be well defined. 2. A researcher from Virginia Polytechnic Institute and State University is interested in how variables, such as GRE (Graduate Record Exam scores),

GPA (grade point average) and prestige of the undergraduate institution, effect admission into graduate school. Since the response variable, admit/don't admit, is a binary variable, she considered logistic regression.

A small data set is conducted to fit a logistic regression equation relating the admit/don't admit decision y to GRE score x_1 , GPA score x_2 , and prestige of the undergraduate institution x_3 . The data set is ready in both excel and SPSS data format, which can be obtained from course website by downloading binary. xlsx or binary. sav. The purpose of this homework is to use logistic regression to arrive at an appropriate model that predicts the outcome variable admit, using gre, gpa, and rank.