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BUSI 275 Business Statistics

Professor Sean Ho

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Project Proposal: International Sales Opportunities

It can sometimes be difficult for students to connect the material they learning in school to the real-world, but our group has been offered the incredible opportunity to analyze real data from a coworker of Marie’s dad. The company has data that needs to be analyzed to help make a decision about an international sales opportunity created by the new Free Trade Agreements in Columbia and Chile.

The company has the opportunity to increase its profit of air-conditioner sales if the product meets the 30% threshold and qualification by location and model. Statistical analysis will be required for two models. The air conditioner is assembled at two manufacturing locations. The costs that need to be considered include fixed overhead costs, like labor, facilities averages, as well as freight charges for the US and Mexico. We want to discover whether or not the final qualifying content meets the 30% threshold for qualification required to be exempt from paying duties by location and by model. Currently, all the calculations are being done by a manual accountant. Our research question is as follows: will investing $1.5 million capital in an export system to automate calculation meet a two year return on investment? We want to discover if it is worth it to invest in an accounting system.

The key independent variables that we will consider for the two models include fixed overhead costs, freight cost, content and manufacturing location. Using actual 2011 manufacturing data, we predict that by investing $1.5 million dollars to automate the calculation process, there will be increased sales orders against the new Free Trade Agreements and there will be a return on the $1.5 million dollar investment within two years.

The unit of observation that we will use will be time-series by month. Our sampling strategy will involve using manual accounting processes, comparing associated costs to the system investment and volume increase forecast. Based on historical data and forecasted sales monthly, we will be able to determine the ROI and quantify the net export duty savings by month and by location.

We will be using existing data that been collected manually which the company has agreed to provide under the one condition that the company name and product will remain anonymous. The data will consist of historical data about orders received by model, manufacturing location schedule, plus monthly costs for variables including: fixed overhead, labor, freight US, freight Mexico, pricing and concession generation sales gross and net with incentives to dealers.

We plan to divide the work evenly among the three of us, and decided that it would be best for the three of us to be involved with each stage, but each of us will have a separate primary responsibility where we will lead the other group members through each task. Miranda will be responsible for organizing the data and creating charts. Nicole will be responsible for making the PowerPoint, creating presentation outline and completing the REB form. Marie will be responsible for communicating with the company and writing the paper for the project. We will all work together to collect and analyze the data.

Through this project we hope not only to further develop our statistical analysis skills and gain experience by collaborating with business professionals, but also transform the data into meaningful information to help the company make its decision regarding the international sales opportunity.

Describe the population of interest and the primary outcome variable.

Describe the predictors and the nature of the relationships that you think those predictors will have with the outcome, e.g., "we think that increased corporate taxes lead to increased unemployment rate".

Describe the unit of observation and possible sampling strategy: e.g., the unit of observation might be per-person, or per-company, or per-country, or even per-year (for time-series).

Describe your plan for where to get the data. If you will use existing data, what sources have you already explored? If you will be gathering your own data, what is your plan?

Discuss a preliminary plan to divide the work amongst your team members.

Biblical integration - Do not let others look down on you because you are young. We will be challenging ourselves through this real-life data.

Spending money wisely as stewards

Questions:

* Prof is a little worried about manually accounted data – prefers observations, but it should be fine
* Do you have data projecting the costs of the accounting machine?
* How many months of data are available? Prof says the more the better
* Details about accountant’s method of data collection???
* Need data before February 7th if possible
* Part of this project might not apply to the course, but can be extra
* Independent Study break
* Plan a time for her to talk with rest of the group
* Skype?
* Questions about the data: - Do we know what the costs are to maintain the accounting system? Will someone still be working to maintain the machine?