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| **Client:** | Christopher Ghita | **File:** 24-064 |
| **Dept:** | Libraries | **Faculty:**  **Student:** |
| **Date:** | 7/16/24 | **Initial Meeting:**  **Follow-up:** |
| **Consultant and Attendees:** Sumeeth Guda, Christopher Ghita, Zoeanna Mayhook, Dr. Chong Gu | | |
| **Statement of Problem:**  What specific academic benefits do undergraduate students attribute to their involvement in case competitions with a finance component. | | |
| **Goal of this Project:** Publication of results and undergraduate Honors project. | | |
| **Background:**  The client Christopher is an undergraduate student working with Professor Mayhook in the department of libraries to complete an undergraduate honors project. Their project explores the specific benefits that undergraduate students attribute to their involvement with case competitions with a finance component. A case competition is an event where students come together to present solutions to real-world or fictional business problems using the skills they learned in management classes.  To gather data and insights from the students to understand their initial and retrospective perspectives on the case competition benefits they created a survey to obtain this information. The survey was created using a retrospective survey design and includes 3 types of questions: Likert Scale, select all that apply, and multiple-choice question. The questions range from the students backgrounds and initial knowledge of case competitions and the lessons learned, to post perceptions of case competitions with regards to the benefits and growth.  The main reason they decided to come to the SCS for help was they needed feedback on the survey design, to verify that there were no statistical errors, and learn about techniques for analysis to determine if the results were significant as well as learn about comparison tests between different populations. | | |
| **Progress of project at this time:** Design (No Data collected). | | |
| **Relevant information presented at meeting:**  At the start of the meeting, the client explained that the idea of the project is to gauge the academic and professional benefits of case competitions with financial components. They did this through creating a survey, to see if the students benefited from participating in the case competitions. They came to the SCS to validate the design of their survey and to see if there were any statistical errors with how they would collect their data.  As explained in the meeting, Christopher and Prof. Mayhook will not conduct a separate initial test to gather the prior perceptions of the competitions, consequently their project will be a retrospective study as they are focusing on the post perceptions from students after they participate in the competitions.  Professor Mayhook holds many case competitions throughout her course, as she explained, the types of competitions she holds involve: Presenting a business scenario to the students, they would then do research and create a presentation, and lastly give recommendations in business proceedings. The financial case competitions the client is exploring are those in academic settings and in extracurricular activities. They are doing this because one section of their survey asks participants about all case competitions they participated in. They might partner with classes in the business department which mandate a competition, but they are looking to broaden the diversity of the samples.  A concern that Dr. Gu had about this was that the survey can mean different things to different people, and focusing on different participant backgrounds yields better results. Whether it was the first time the student participated in the competition or not. There could be different varieties of case competitions, and it’s the responsibility of the survey taker to determine the worth of the case competition. To see if they personally benefitted from the competition or not. This is important to the analysis as it contributes to the fact that the participants don’t come from the same backgrounds, hence making the analysis more challenging.  A major concern that Dr. Gu had about the survey was the baseline background of the survey takers was blurred. This is problematic because whatever conclusions the client obtains at the end of their survey might not be significant, simply because they didn’t work with an audience from a common background. Once the baseline is clear, the conclusion might be more definite and significant. Once Dr. Gu said this, the client and Prof. Mayhook agreed that they might not get a clean conclusion. Because, the baseline isn't clear for the participants, since there are many kinds of case competitions; The broad baseline makes it hard to tell a story. This is one possible limitation of the study.  Although the client and Prof. Mayhook are currently in the design phase, and that analysis isn’t in view yet. One approach Dr. Gu recommended was that they use regression for the analysis, however given that the client and Prof. Mayhook did not have a clear question to address and that by the sound of their request then they could just do sample statistics or potentially analyze the relations among the covariates under a very general framework. The latter analysis method might be challenging under their current design, Furthermore, the SCS is unable to provide qualitative analysis services to clients as was mentioned in the meeting. The client mentioned that they would likely do a descriptive statistics analysis and ultimately a chi squared analysis for their data.  Regarding the questions asked in the survey, from a human factors’ perspective Sumeeth and Dr. Gu thought the description of the survey was too long and ultimately this could be a problem as it might dissuade participants from submitting their survey. Additionally, the Likert Scale questions were also seen as too lengthy and might cause disinterest among the survey takers.  The biggest concern in the meeting Dr. Gu and Sumeeth had about this project was that the client did not ask a specific research question. It was too broad and ultimately, they could not give any specific statistics or analysis advice without having the specific question in mind. However, some design advice was given for the question structure as well as some potential analysis methods the client can consider. | | |
| **Recommendations for Design and/or Analysis:**   1. The first recommendation given in this meeting was regarding the design component of the Likert scale questions. Since in the client’s original design all the Likert Scale questions in Q5, Q9, and Q11 are stacked on top of each other and contain multiple subscales, in terms of the analysis this will aggregate the questions together. If the clients care about the individual subscale questions it was recommended that they separate them. However, they don’t need to change the questions if the individual question does not matter. This was recommended but not enough information is known to do analysis using these data points. 2. To do the specific research questions, some suggested methods were regression, anova, etc. For the specific research questions, with the Likert scale ones, if the questions are treated as individuals and hence are viewed as ordinal, however if they are aggregated then they would be viewed as continuous. For the list all that apply questions they can be views as multiple binary responses. To give specific analysis advice, then we need specific research questions. 3. A big concern Dr. Gu worried about was that the baseline wasn't uniform which he feels will be the knife in the analysis and cause a lot of issues with respect to the interpretation. Additionally, the survey questions are too complicated and not clear to survey participants. So, it was recommended to the client to make their survey more inclusive and approachable to the non-uniform audience, whether it is through rewording or negating certain questions. 4. Although it was briefly mentioned in the discussion, since the client has contacts in multiple schools he wanted to send the survey to these schools. With regards to doing analysis on this it is best to do analysis in the individual schools first before comparing the populations. But to reiterate the second recommendation, the students need to have uniform backgrounds to establish the common baseline. Only then will the test results be relevant to the study. The client said they might not compare populations in the present study, but if they get enough respondents to their survey then this could be an option to consider. 5. Dr. Gu recommended that if regression is used, then the response to Question 8 could serve as an ordinal response variable, however it isn't definite because the specific research question has not been established.   The above recommendations were given using the general research question. However, without a specific research question, ultimately the SCS cannot give any meaningful recommendations for the design and analysis. | | |
| **Who will carry out these actions?**  Client:   * Come up with specific research questions to ask the Consultant and to consider for their analysis. * Establish the baseline audience they want to give the survey to and sample from. * Make their survey more approachable and inclusive to a non-uniform audience. * Make the Likert Scale questions less worddy. Additionally determine the specific questions they want to separate and highlight in their analysis. * Get IRB approval and determine ways to privatize the information of the participants.   Consultant:   * Meet with the client to see if the recommendations were followed. * Work with them to determine the correct analysis approaches once the client comes up with specific research questions. | | |
| **Status:** Follow up meeting needed. | | |

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