

However, see my remarks below about mass advertising to your friend lists on facebook, or dept major lists. Not a good idea for minimizing selection biases.

-BJ

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### Survey Proposal – A study on students’ change of majors and which ones they choose.

#### A. Interest:

As upperclassmen at CMU, we ourselves and other students alike have encountered decisions in switching majors, in which many claim to be a problem for various reasons. We also believe that some majors may be better at retaining students, and some majors have high turnover rates. We would hope to understand why some majors have better retention rates. We believe that everyone at some point has considered transferring to another major, and if they haven't, we would like to know what factors caused students stay in their major. This study would be most beneficial and significant for prospective students who are visiting. For example, if prospective students know reasons behind switching majors, they are able to choose their majors more carefully. This is also important for the university itself letting them make inference on how or why people change their majors. By conducting this survey, we would hope to be able to make inferences on specific majors on CMU campus, and obtain data regarding why people choose the majors they chose to pursue.

#### B. Some of the questions we propose to study are:

- a. What are students current majors
- b. What percentage of the students like their current major
- c. What percentage of the students have changed or are going to change their major
- d. Why would students want to change from their current major
- e. Which majors have the lowest and highest retention rate
- f. What are the major factors affecting students changing their major

#### C. Existing Research:

- a. <http://www.assessment.uci.edu/reports/documents/SurveyofMajorChangers.ppt>  
“Survey of Major Changers” presented by Dr. Judy Shoemaker of UC Irvine. Survey results were presented October 15, 2007, and the presentation can be found at the link above. The survey was conducted to determine why students change majors, how the major-change process is perceived and what can be done to improve the process at UC Irvine. While the

information gathered is similar to our goals, we would gather information primarily to develop inferences regarding specific majors. ✓

(a) the answers might be different at Carnegie Mellon & worth finding out  
(b) interesting to compare CMU to UCI

--Michael Len

b. [http://www.youngmoney.com/careers/career-advice/037\\_217/](http://www.youngmoney.com/careers/career-advice/037_217/)

This website gives some major reasons college students change their majors. This helps us develop our hypothesis and survey questions. ✓

– Dunyang Wang

c. <http://life.globaltimes.cn/life/2010-12/604400.html>

“Freshmen Keen to Switch Majors” - Jia Jianyu (December 27, 2010). A recent online news article reporting on a survey taking in Chinese universities regarding the high volume (and high demand) of students wishing to change their majors and pertinent reasons. The survey covered in the article has similar motivations to our proposed study, and can serve to aid us in crafting our questions by providing a number of possible responses. This will allow for easier coding of our collected responses into data and in turn, a more straightforward/less convoluted conclusion. ✓

- Oliver Lam

d.

<http://www.cs.washington.edu/homes/letchner/classwork/cs201/survey.html#switchingmajors>

“Whether Students Have Considered Switching Majors, and Why”- Stanford Survey Results. Sample size were 162 Stanford students divided into sub groups of Male-Female, and Non-Technical-Technical Majors, and within Technical majors if they are either CS or non-CS. This survey is a great resource to our survey since our university is very technical and this survey answers questions like “Influences on students’ choice of a major” and “whether students have considered switching majors, and why”. ✓

-Go Okumura

e. <http://www.parent.umn.edu/previousarchive.html>

Here it lists a simple survey conducted on parents of students, and what their perspectives. Not all survey result is significant to our survey, although few are right on the spot such as question like “Has the economic downturn of the past year affected your student’s choice of major or career?” Results on questions like these will help us make inference on why student’s change majors since we believe parents play a big role in student’s choice of majors. ✓

-Jude Zhu

#### D. Sampling frame:

- 1). All undergraduate students of classes 2011, 2012, and 2013 in Carnegie Mellon C-book
- 2). People who wrote Carnegie Mellon as school and classes from 2011-2013 on Facebook: People may be more likely to participate in surveys on Facebook rather than receiving emails. Also, there is no risk of survey emails going into “junk mail” folder. We can ensure that our sample will get the survey on Facebook.

you should draw your sample from this c-book frame. Then you can use email or facebook to contact the specific students in your c-book sample.

- 3). Students on undergrad list in every department

In case emails sent to C-book will be considered as “junk mail”, students may be more likely to read emails sent to his or her own department. Also, it’s easier for data collection to send email according to department.

I don't want you to do mass advertisement on facebook or department lists, since then you will have a respondent self-selection problem that will receive a lower

### E. Target population:

The target population is all Carnegie Mellon undergraduate students ~~except freshmen~~. We wish to make inference on Carnegie Mellon upper class undergraduate population regarding to our proposal topic.

It will be worth making the obvious point later (in your report) that freshmen are excluded since they haven't had a chance to change majors yet.

Carnegie Mellon C-book may not have all undergraduate students’ emails. There may be a high non-response error because emails sent to C-book list may be considered as “junk mail”. The people who respond to the survey from C-book may not be a random sample and can’t represent the target population well. We plan to send survey to the undergrad email list of each department to compensate these problems.

Not all Carnegie Mellon undergraduates write they’re from Carnegie Mellon and year of graduation on Facebook, and maybe not all the people who have matching information on Facebook are true. There’s a possible coverage error. We plan to send additional surveys to all of our Carnegie Mellon friend lists, and our friends’ Carnegie Mellon friend lists in order to get a higher response rate and a better chance of getting more accurate data. In this way, not only acquaintances or friends of our project members get survey messages, and the coverage error is also reduced.

There are fairly obvious selection bias problems with these approaches -- volunteer self-selection bias, biases in using your friend lists (your friends are not "representative" of CMU), etc.

### F. Mode of Data Collection:

Web-survey

Create a questionnaire on survey monkey, and send the link to the sample frame via emails or as a message on Facebook.

Fixing these problems is harder than simply doing a good job with

In order to get a higher response from C-book and ~~department email list~~, we plan to send a second email a week after reminding the survey.

### **G. Measuring Variables:**

A student's opinion about his or her current major (good stay with it/ thinking about switching)

Percentage of students changed major

Or percentage of students who thought about changing major actually changed

Most common factors causing a student changing his or her major

Most common factors constrained students from switching major when they want to switch

Percentage of students changed into or out of a certain major, maybe subgroup by departments.

Percentage of students stayed in the major ever since they declined it, maybe subgroup by departments