

[36-303] A Study on Students' Change of Majors, What they Choose and Why.



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Our study

- Many students have considered switching majors.
- What factors cause students to stay in their major? if not transfer?
- Reasons and concerns regarding switching/retaining majors.
 - Time
 - Financial Concerns
 - Future job opportunities
 - Social influences



Our Study

- Beneficial to prospective students
- Significant addition to school statistics.



Motivation/ Research Question

We hope to explore the factors that affect a student's decision to change or retain their majors and how prevalent these factors are in the decision making process.



Our Study

- Points of Study/Measured Variables
- Existing Research
- Sampling and Target Population Details
- Questionnaire
- Current Progress
- Next Steps

Points of Study/Measured Variables

- **Quantitative:**

- The distribution of majors across the our sample size (percentage/number of students in each major).
- The percentage of students who enjoy their current major.
- The percentage of students who have changed or wish to change their major..
- The retention rates within each major/field.



Points of Study/Measured Variables

- **Categorical:**

- The main motivations that drive a student to change major.
- What keeps students stay in their current majors.
- What are the factors that have possibly stopped students from changing majors even though they have thought about it.
- The type of majors people tend to/have switched to.

- **Data Analysis**

- Counting, pattern of distribution



Existing Research

- "Survey of Major Changers", Presented by Dr. Judy Shoemaker of UC Irvine
 - Survey conducted to determine why students change majors and how easy the process is
- "Freshmen Keen to Switch Majors" - Jia Jianyu (December 27, 2010)
 - Survey regarding the high volume Chinese University students wishing to change majors



Sampling and Target Population Details

- Target Population: Carnegie Mellon Undergraduate Population
- Sampling frame: Carnegie Mellon C-Book email list (may consider social networking sites such as Facebook)
- Sampling Scheme: Stratified Random Sample without replacement (if email lists are classified by class level)



Sampling and Target Population Details

- Sample Size: 1765 students (more details later)
- Mode of Data Collection: Email invitation to the online survey link we created.
 - *Note: lack of resource for a random sample through phone calls and too much time and effort through interpersonal interview.*

Sampling Size

- Total Undergrad population: 5619
- Want just sophomores, juniors, and seniors.
- Simple random survey without replacement
$$n_0 = (z^2)(SD^2)/(ME^2) = (1.96^2)(.5^2)/(.05^2) = 384.16$$
$$n > (N \cdot n_0)/(N + n_0); n > (4214 \cdot 384)/(4214 + 384) = 352.06$$
- Minimum response sample size: 353 responses
- Standard deviation: 1/2 95% CI 5% ME
- Increase minimum response sample 5 times to account for 20% response rate
- Final sample size: 1765 Students
- Additional Sampling to fix representativeness issues

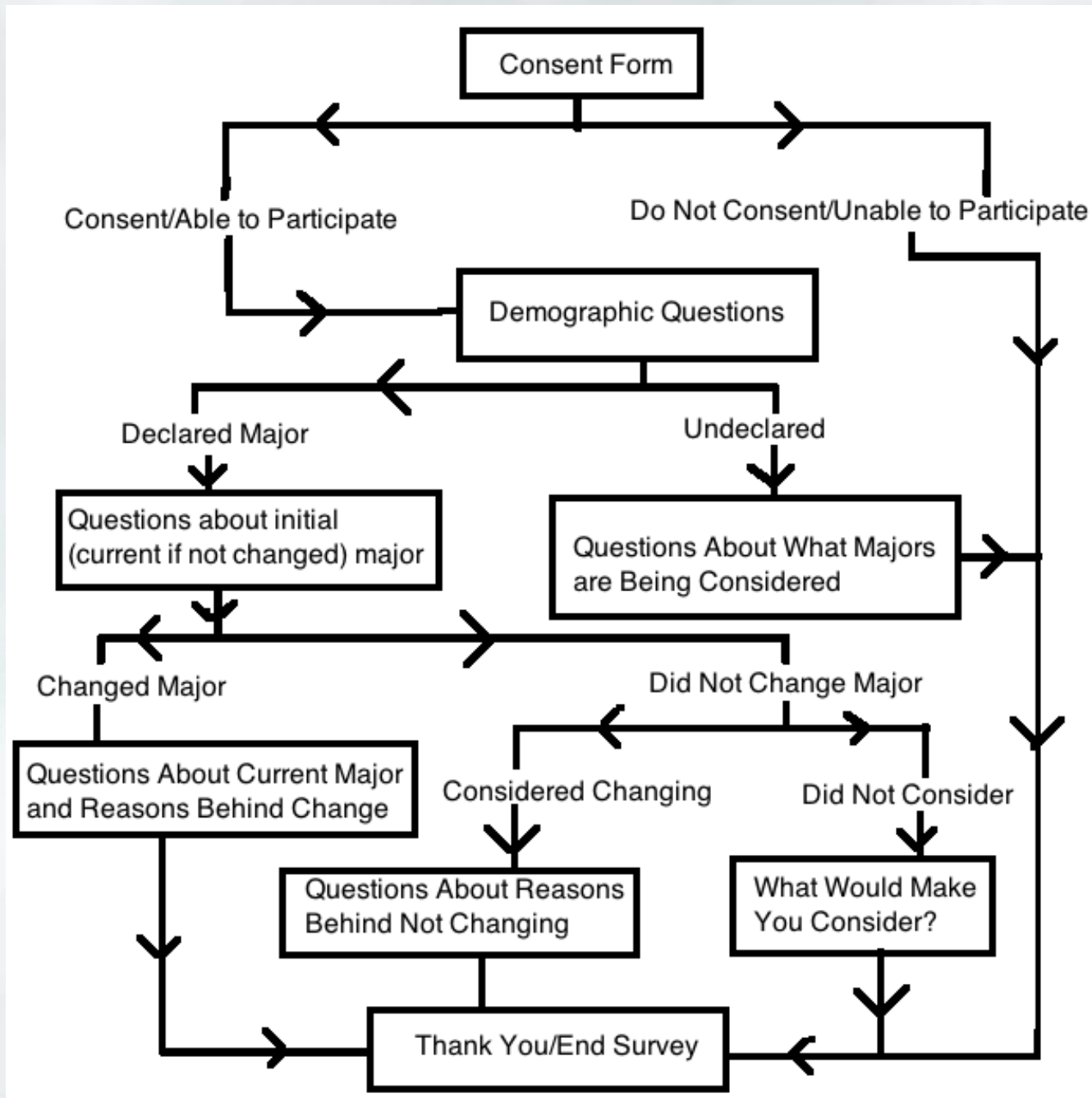


Sample Questions




- What led you to choose your current major?
- Would you pursue the field of your major in future professional career?
- Why did you leave your first major?
- Why did you choose your original major?
- What factors influenced your choice to change majors?
- Why didn't you change?
- Do you think the University should put more emphasis on major selection counseling?



Questionnaire Flowchart



Current Progress

 <https://spreadsheets0.google.com/formResponse?hl=en&formkey=dGJlSHR5TIBKNzdHOEZKVmh5a1JLV2c6MQ&ptok=9103034>  

Major Satisfaction Survey - Consent Form

* Required

Major Satisfaction Survey

What is your gender? *

- ☐ Male
- ☐ Female

What year are you? *

- ☐ Freshman
- ☐ Sophomore
- ☐ Junior
- ☐ Senior
- ☐ 5th Year Undergraduate
- ☐ Other:

What college are you in? *

- ☐ CIT
- ☐ CFA

Current Progress

- In the process of sending emails to our sample.
- Taking a longer to randomly sample than expected
 - C-Book is sorted by name, not by department or year, although that information is available
- Not enough time has elapsed to make an accurate conclusion for non-response rate.
- Some questions have been re-phrased

Next Steps

**Finish sampling &
Gathering data!**



Next Steps

- We will cut off collection near April 1, or later if we have too few responses (send one more reminder)
- Stratify our results by year after our simple random sample.
- Compare our results between year

Any Questions?

Thank you!

