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Final Project Proposal: Political Attitudes and Academic Major of Carnegie Mellon Students

A.
It's always been interesting to me the relationship between the major that students pursue in college and their political philosophy. It would be interesting to know if certain areas in academia draw people with certain political leanings or if such a differentiation doesn't exist. For example, will the stereotype hold that students studying art or music are more left wing when it comes to political and social issues? Breaking or reinforcing long thought stereotypes can be a very interesting task. Which major has the most relatively right wing students and what can be said about that subject and its relationship to such politics? The information that will be obtained from such a survey won't necessarily be the most applicable; however, it will be an interesting expose of Carnegie Mellon students from which all of us can learn a bit more about the community in which we study and live in. Possibly the results from such a survey could be published in the school newspaper. In all, we view this survey as a diagnostic of our community, similar to how several polls are conducted on the US population regarding certain issues that in all serve as a diagnostic of how people think and the relationships that exist.

B.
The most important question that we will want to study is if there is a distinguishable relationship between one's primary major and political philosophy. The questions that we pose to students will try to gauge their political philosophy, but also social views. For example, questions regarding size of government, views on abortion, traditional marriage, etc. Hence, another question may arise from this regarding social views and political philosophy and how well they run parallel, which we assume will be rather often. Given the fact that many students have double majors and minors in different fields, we will focus on the given student's primary major. While we will only test our school community, the bigger question at hand is if students with certain views both politically and socially are more probable to choose certain majors and what can be said about those areas of study in relationship with the prevalent political/social view. In addition to noting the primary major, it will be important to also take heed of other variables that may exist in influencing one's views for example, where one is from, religion, sex, and age. All of this will have to be recorded as well.

C.
While many stereotypes regarding this question exist, not much tangible research has been done. However, there was this notable research done at University of Minnesota regarding this exact question. The results from this survey concluded that there wasn't a significant relationship between one's university major and social views, however a tangible relationship existed between one's chosen university major and economic views. It will be very interesting to compare the results from the CMU community to this university's community and see if similar relationships exist. The paper also references some other papers that researched this question, which will add nicely to background with which our results can be compared.

"Choice of Major and Political Attitudes: A Study of University of Minnesota Students" , Spring 2010, (Rachel Gage, Jennifer Zick, Kaylie Tully, and Elaina Simon), Department of Psychology, University of Minnesota. Published in University of Minnesota Undergraduate Journal of Psychology (Sentience).
http://www.psych.umn.edu/sentience/files/Gage_2010.pdf

Another source found was a university article which investigates the liberalisation of students' socio-political orientations. The article however does not employ a survey, but provides an extensive history and analysis regarding this trend which is crucial to this topic.

"Higher education and sociopolitical orientation: The role of social influence in the liberalisation of students" Brianne Hastie, University of South Australia, European Journal of Psychology of Education 2007

This third article examines the argument that political orientation is significant in affecting academic success in university. The sample size utilised in the paper are undergraduate students at an American university and their respective grades. The statistical analysis includes multilevel regression modelling.

"What's in a Grade? Academic Success and Political Orientation" Kemmelmeier, Danielson, Basten, Personality and Social Psychology Bulletin, 2005

The fourth paper is regarding voting behaviour of parents and their children at university. The paper includes some useful data regarding political attitudes of students and since this research was done via survey, the questionnaire is shown in the paper.

http://www.manchester.edu/oaa/Programs/MISC/files/documents/KnightBriannaandLupkinAlycaandMcFaddenKaty-Paper.pdf

D.
The sampling frame for this topic would include the undergraduate students at Carnegie Mellon. However, this sampling frame would have to be narrowed down to students who have a declared primary major; hence, many first year students will become illegible units. Most likely it will be 3rd and 4th year students that are included the most in this sampling frame because most if not all have a declared primary major. Given this, the units will be sampled from email addresses in C-book, rather than exclude all the first year students, we plan on having our first question "filter" students who do not have declared majors.

E.
Rather than have the target population be general US undergraduate students, we will have it confined to just Carnegie Mellon undergraduates. A target population of US undergraduate students would yield substantial coverage errors and given our recourses - it will be best to make our inference regarding the sphere of Carnegie Mellon. Obviously, our sample selection will be a small part of this population and coverage error could come from over representation in a certain school or major. Another source of error could come from the fact that most freshmen will be excluded and hence the input of the younger students will be minimal.

F.
The mode of collecting the data will be via short questionnaire which will be hosted on one of the online surveying hosts (Surveymonkey). The questionnaires will be sent via email to the sample population. For this topic, this method seems the easiest as one can choose the people of his sample size carefully, representing a variety of majors, and doesn't require much physical involvement. Of course one downside is the lower response rate that will come with this method, thus we will probably have to utilise an incentive scheme.

G.

The questionnaire will be relatively short, but still longer and more detailed than the Univ. of Minn. study's. The first things we will have to ask are demographical. For example, we will want to know if they have a declared major or not and possibly a question regarding their background (such as religion or homeland). The variables of the content core will have to gauge the individual's attitude towards big/debated questions of political and economic philosophy such as the size of government and government welfare. The other variables will have to gauge the person's views towards the most controversial social issues such as abortion. A combination of these variables will give us a pretty informative picture of individual in our sample.

H.

The topic regarding academic major and political views was chosen. The proposal parts were revised.

I.

The IRB form was submitted.

J.

Since our survey will not be collecting names, there will be no identifiers of our survey results to the actual participants. In addition, the data that is collected will be of a benign nature, concerning simple demographics (major/hometown) and personal views on some issues.

K.

Since our survey's objective is dependent on groups of people according to their academic major, we will be utilising a stratified SRS without replacement for our sampling scheme. Since we do not have concrete, prior knowledge regarding the effect of academic major on political attitudes, we will use a proportionate stratified sample with equal probabilities. We will divide the stratum groups according to school rather than each and every major. However, at a school like H&SS with a wide variety of academic majors, we will divide the academic majors into relevant groups. We believe this sampling scheme will be more efficient in giving us a representative sample than a regular SRS without replacement.

L.

Demographic

1. What is your grade level?
   Freshman/Sophomore/Junior/Senior
2. What is your primary major if any?
   Fill in
3. In which country have you spent most of your life in? If in the US, please specify your state.
   Fill in
4. What is your race?
   White/Black/Hispanic/American Indian/Asian/Pacific Islander /Other

Economic Attitude

5. Is government intervention in the business sector via regulations and monetary stimuli justified outside a recession?
0(I don't know)/1(Yes)/2/3(indifferent)/4/5(no)

6. Is a progressive tax based on income, where the wealthy members of society pay the most, justified?
0(I don't know)/1(Yes)/2/3(indifferent)/4/5(no)

7. Should trade with foreign nations be restricted in order to protect businesses and workers at home?
0(I don't know)/1(Yes)/2/3(indifferent)/4/5(no)

8. Do the poorest members of society deserve economic support?
0(I don't know)/1(Yes)/2/3(indifferent)/4/5(no)

9. Should more goods be made in America even if it means paying higher prices for them?
0(I don't know)/1(Yes)/2/3(indifferent)/4/5(no)

10. Is government spending on public goods justified (e.g. roads, parks, bridges)?
0(I don't know)/1(Yes)/2/3(indifferent)/4/5(no)

11. Should the US K-12 public education system be run as a business?
0(I don't know)/1(Yes)/2/3(indifferent)/4/5(no)

Social Attitude

12. Should marriage be between a man and a woman only?
0(I don't know)/1(Yes)/2/3(indifferent)/4/5(no)

13. Are abortions for non-rape victims morally wrong?
0(I don't know)/1(Yes)/2/3(indifferent)/4/5(no)

14. Should traditional gender roles, such as domestic housewives, be broken?
0(I don't know)/1(Yes)/2/3(indifferent)/4/5(no)

15. Are religious values an integral part of society?
0(I don't know)/1(Yes)/2/3(indifferent)/4/5(no)

16. Should universities give free contraception to students?
0(I don't know)/1(Yes)/2/3(indifferent)/4/5(no)

17. Is the recreational use of marijuana acceptable?
0(I don't know)/1(Yes)/2/3(indifferent)/4/5(no)

18. Is racial profiling for the sake of security sometimes justified by law enforcement?
0(I don't know)/1(Yes)/2/3(indifferent)/4/5(no)

Political Attitude

19. Is it justified to sacrifice liberty for security in a national security crisis?
0(I don't know)/1(Yes)/2/3(indifferent)/4/5(no)

20. Is larger government more effective?
0(I don't know)/1(Yes)/2/3(indifferent)/4/5(no)

21. Should governmental regulation of firearms be stricter?
0(I don't know)/1(Yes)/2/3(indifferent)/4/5(no)

22. Should the size of the military be reduced?
0(I don't know)/1(Yes)/2/3(indifferent)/4/5(no)

23. Are people adequately represented by their government?
0(I don't know)/1(Yes)/2/3(indifferent)/4/5(no)

24. Should taxpayer money be sent for the economic development of 3rd world countries?
0(I don't know)/1(Yes)/2/3(indifferent)/4/5(no)

25. Should burning your national flag be considered a crime?
    0(I don't know)/1(Yes)/2/3(indifferent)/4/5(no)

26. Where do you stand on social issues?
    Left/Centre-Left/Centre/Centre-Right/Right
27. Where do you stand on economic issues?
    Left/Centre-Left/Centre/Centre-Right/Right
28. Where do you stand on political issues?
    Left/Centre-Left/Centre/Centre-Right/Right

M.

Are abortions for non-rape victims morally wrong?
0(I don't know)/1(Yes)/2/3(indifferent)/4/5(no)

$$\hat{p} = \frac{1}{2} , z = 1.96 \ (assuming \ 95\% \ confidence)$$

$$ME = .071$$

$$n = \frac{\hat{p}(1-\hat{p})}{\left(\frac{ME}{Z}\right)^2} = \frac{.25}{(\frac{.071}{1.96})^2} \approx 191$$

$$n \geq \frac{Nn_0}{N + n_0} \rightarrow \frac{(6178)(191)}{6178 + 191} = 185$$

$$ME = .05$$

$$n = \frac{\hat{p}(1-\hat{p})}{\left(\frac{ME}{Z}\right)^2} = \frac{.25}{(\frac{.05}{1.96})^2} \approx 384$$

$$n \geq \frac{Nn_0}{N + n_0} \rightarrow \frac{(6178)(384)}{6178 + 384} = 362$$

The resulting sample sizes seem feasible.