

Academic Major and Political Attitudes at CMU

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Introduction

- Is there a relationship between academic major and political views among undergraduate students at CMU?
- Motivation?
 - Debunking/Supporting stereotypes of certain majors
 - Political diagnostic of the school community

Questionnaire

***7. Is government intervention in the business sector via regulations and monetary stimuli justified outside a recession?**

	I don't know	Yes, absolutely	Probably yes	Indifferent	Probably no	No, absolutely not
Answer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

***8. Is a progressive tax based on income, where the wealthy members of society pay the most, justified?**

	I don't know	Yes, absolutely	Probably yes	Indifferent	Probably no	No, absolutely not
Answer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

***9. Should trade with foreign nations be restricted in order to protect businesses and workers at home?**

	I don't know	Yes, absolutely	Probably yes	Indifferent	Probably no	No, absolutely not
Answer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

*10. Do the poorest members of society deserve economic support?

	I don't know	Yes, absolutely	Probably yes	Indifferent	Probably no	No, absolutely not
Answer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

***11. Should more goods be made in America even if it means paying higher prices for them?**

[illegible]

So far...

- Data collection over
- Data analysis being finalised

Survey Methodology

- Sample Frame: online student directory
- SRS Sample Size
 - No prior probabilities
 - Divided Sample Size among our 7 strata
 - Sampled from each of the 7 strata

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

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

Survey Methodology (2)

- Questionnaire in Surveymonkey
- Respondents contacted via email (andrew webmail lists)
- Strata:
 - CIT
 - SCS
 - MCS
 - CFA
 - Tepper + Econ
 - SDS + Stats
 - Humanities
- Ineligible Units:
 - Interdisciplinary Majors
 - Part Time Students

Survey Glitches

- Survey was prone to miscopying andrew webmail addresses
- Online student directory sometimes does not clearly distinguish between undergrads and grads
- Initial email failed to mention course name

Response Rate

- 1st Batch
 - Total: 76
 - Total completed: 61
 - Response Rate: 21%
- 2nd Batch
 - Total: 61
 - Total completed: 49
 - Response Rate: 17%
- Total
 - Total: 137
 - Total completed: 110
 - Response Rate: 19%

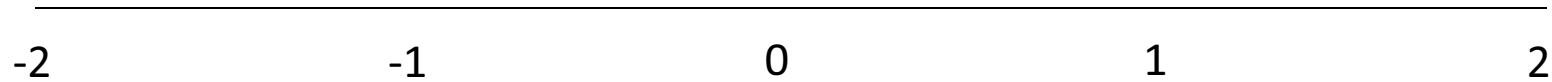
Strata Response

- CIT
 - 16, 15%
- SCS
 - 13, 13%
- MCS
 - 20, 19%
- Hum
 - 18, 17%
- CFA
 - 8, 8%
- Tepper
 - 15, 14%
- SDS/Stats
 - 20, 19%

Response Analysis

- No distinguishing features among non-responders
- Incomplete surveys are not analysed
- Shortage of respondents from CFA
- Fill demographics, fail to respond to content

Coding



- Values
 - -2: Very Left
 - -1: Left
 - 0: Centre
 - 1: Right
 - 2: Very Right
- Value Assigned to each question response
- Average of all values for each respondent (Y_i)

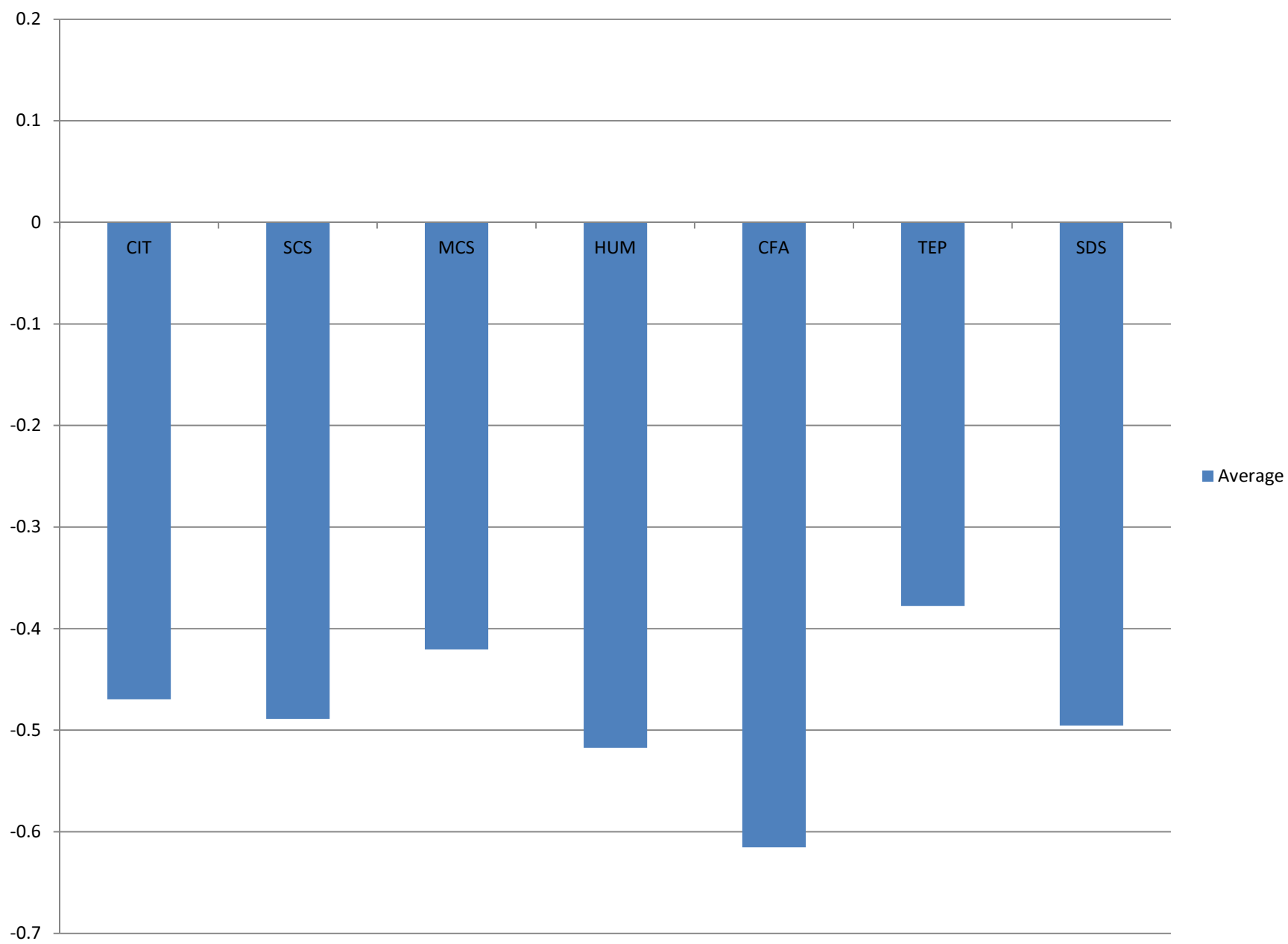
Unweighted Averages

	Econ	Social	Pol	Total
CIT	-.6860119	-.8303571	.05803571	-.5052057
SCS	-.9025641	-.6190476	-.0970696	-.5364276
MCS	-.6082143	-.7154762	.11642857	-.4159226
Hum	-.6653439	-.944709	.02896825	-.5401037
CFA	-.485119	-1.014881	-.25	-.5896884
Tepp	-.6595238	-.5825397	.13904762	-.3811066
SDS	-.8928571	-.672619	.11261905	-.483145
Total	-.6999477	-.7685185	.0154328	-.4930857

Weighted Averages

Stratum	Weight
CIT	1.82
SCS	.752
MCS	.615
Hum	1.04
CFA	2.01
Tepper	.54
SDS	.171

Stratum	Avg
CIT	-.46955
SCS	-.48884
MCS	-.42049
Hum	-.51721
CFA	-.61526
Tepper	-.37778
SDS	-.49541



Variances

- Taylor Series Method

Stratum	Variance
CIT	.024121
SCS	.026874
MCS	.029429
Hum	.018098
CFA	.057832
Tepper	.172724
SDS	.301804

Statistical Inference

- Hypothesis Testing
 - Small-Sample Tests for Comparing Two Populations Means
 - Student t distribution
 - Pooled Variance

$$t^* = \frac{((\bar{x}_1 - \bar{x}_2) - \mu_d)}{\sqrt{\frac{sp^2}{n_1} + \frac{sp^2}{n_2}}} \quad sp^2 = \frac{(n_1 - 1)s_1^2 + (n_2 - 1)s_2^2}{(n_1 + n_2 - 2)}$$

Table of Probabilities

	CIT	SCS	MCS	HUM	CFA	Tepper	SDS
CIT		.748	.380	.344	.0851	.415	.857
SCS			.264	.601	.167	.375	.967
MCS				.0629	.0229	.680	.564
HUM					.193	.1884	.8708
CFA						.154	.560
Tepper							.493
SDS							

Analysis

- We see a marginally significant difference of political attitudes between
 - CIT & CFA
 - MCS & Humanities
 - MCS & CFA
- Demographics
 - Large portion of white persons from northeast

Conclusion

Can political views be predicted from academic major?

While there were significant differences in political attitude between a few of the academic groups, there wasn't a consistent enough significant trend to conclude that political views in general can be predicting from academic major. However, political views can be predicted given the lone pairings of certain academic groups (CIT/CFA, MCS/HUM, MCS/CFA).

Questions?