

# UCSD Students' Motivation to Learn a Second Language

Nhan Quach | Joseph Morales | Lauren Molony | Aditya Datta | Taylor Chin | Chris Villafan



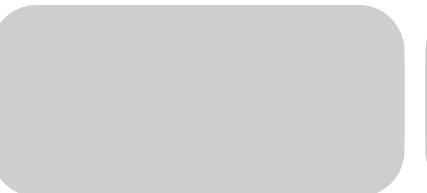
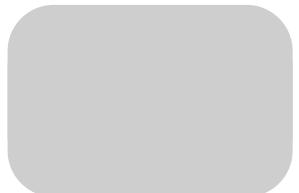
the investigational level of most research into the neurobiology of language

anatomical

or

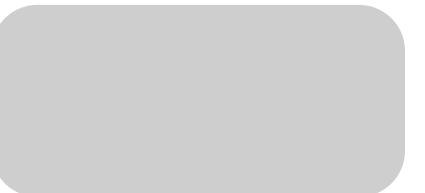
systems

neuroscience



molecular

bio

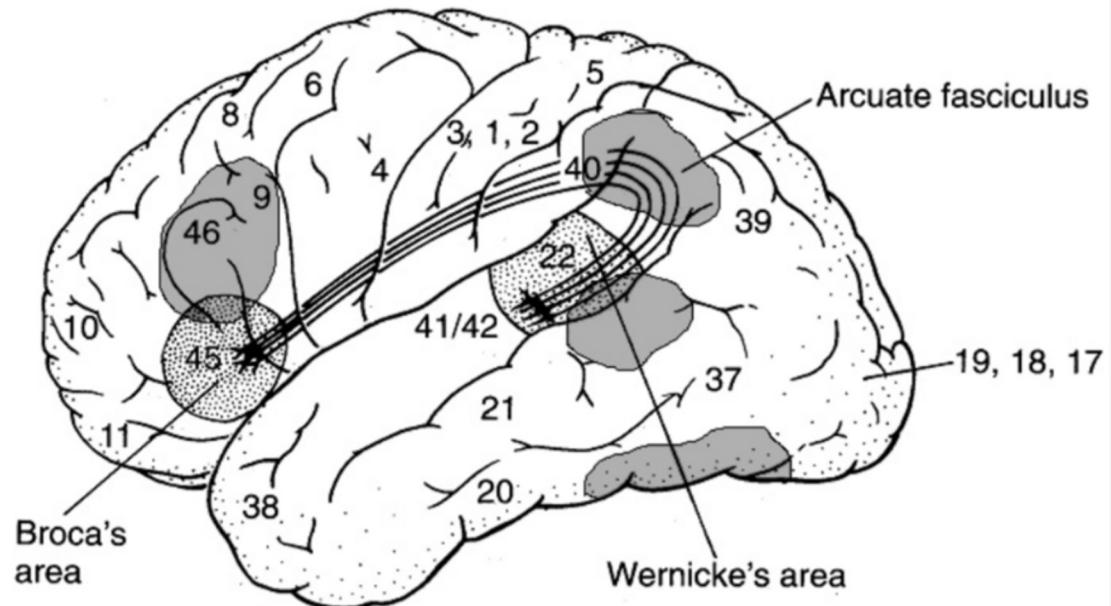


chemical





## Wernicke-Geschwind Model



(Outdated, but Influential!)





# Two Proposed Language Learning Systems

(Optiz & Friederici, 2003)

1. similarity-based learning system; MTL
2. language-related processing system; lPFC

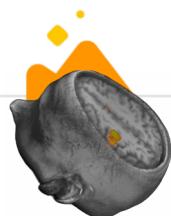
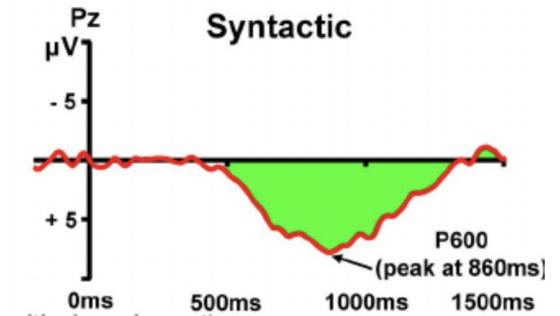
“increased proficiency level of artificial language → decreased left hippocampal activity, but increased recruitment of Broca's area”



# 3 Steps of Language Comprehension

(Friederici & Kotz, 2003)

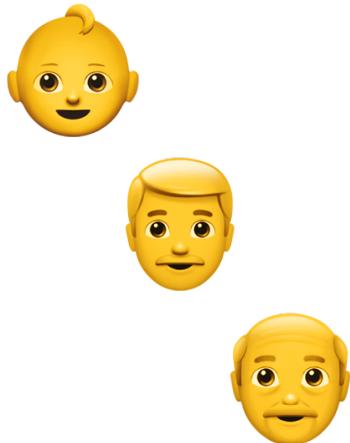
1. initial structure building;  
left anterior temporal region  
& left inferior frontal region
2. semantic integration; left anterior and  
central parietal regions
3. late syntactic integration; STG, left  
frontal operculum, BG



# Benefits of Learning Second Language



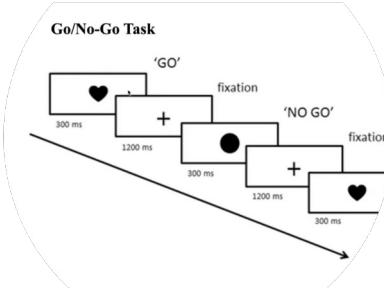
⬆️ GM + WM



▶️ ages



⬆️ inhibition



go/no-go task

(Li & Litcofsky, 2014)

(Sullivan et al., 2014)

# LANGUAGE LEARNING STRATEGIES

only implicit training led to an electrophysiological  
signature typical of native speakers

Morgan-Short et al., 2012

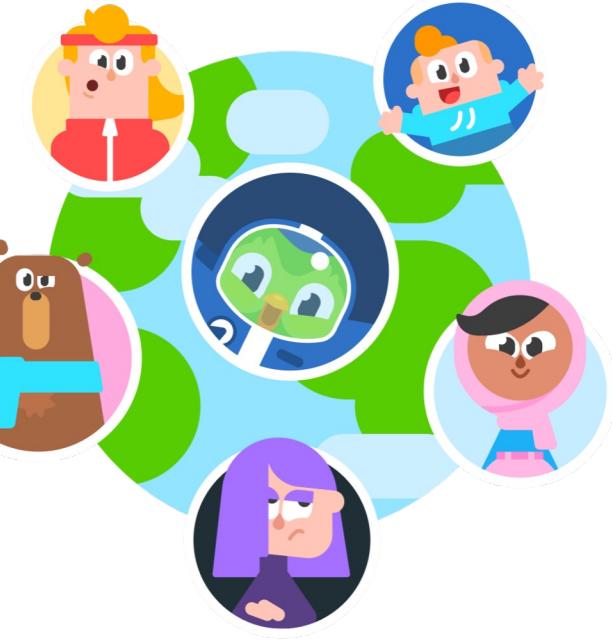


# GARDNER'S SOCIO-EDUCATIONAL MODEL

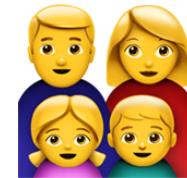
motivation to learn additional language  
relates to attitudes towards  
learning situation and integrativeness

(Gonzales (n.d.))





learning to connect with  
your partner's parents  
speaking that language is a  
form of integrative motive



family



culture

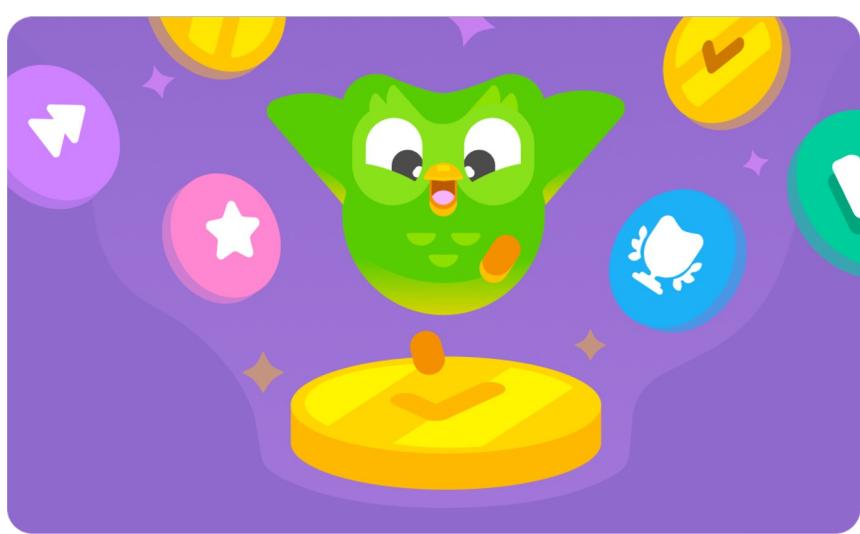


global citizenship

# integrative motive

(Manap et al. 2020)

(n.) interest to languages with regards to  
integration, attitudes of the second language  
community



taking language courses  
because your college requires it  
is an instrumental motive



Self-Improvement



Gen Ed.



Media

# instrumental motive

(Masgoret et al., 2003)

(n.) interest in foreign language for practical,  
utilitarian purposes

# Survey Design

Questions based on:

- Attitude/Motivation Test Battery
- Integrative/Instrumental & Subcategories



## Language Motivations

Within this section, please answer the following questions to the best of your ability. Please rank these motivators on what is most applicable to you.

- **Family:** Reasons pertaining to individuals you consider family. These motivators include feelings of wanting to understand a family member better, desire to be capable of expressing oneself to their family, or because family members actively encouraged the pursuit of the learned language.

- **Media Consumption:** Reasons pertaining to the comprehend entertainment or other media in additional languages. These motivators include wanting to listen to a show in its native language without subtitles or wanting to understand literature written within its original language.

- **General Education:** Reasons pertaining to the requirements of a college education. These motivators include requirements within General Education, fulfillment of elective requirements, or as a buffer for grades.

- **Cultural Appreciation:** Reasons pertaining to better understanding the culture affiliated with the language. These motivators include wanting to understand cultural aspects of language such as slang, understanding phrases or words which are not directly translatable to another language, or to be capable of better understanding individuals on a cultural level who speak that language.

- **Self-Improvement:** Reasons pertaining to improving one's capacity and skills. These motivators include wanting to improve career prospects, have additional talents, or improving one's own intellect.

- **Global Citizenship:** Reasons pertaining to the prospect of one's sense of global integration. These motivators include wanting to be capable (but not necessarily) of emigrating, identifying with a global community, or a better awareness of the global affairs of the world.

- **Other:** Reasons which may not fit within the defined categories.

## Integration

Why are you learning your learned language? (Please rank in order from strongest to weakest motivator)

	1st	2nd	3rd	4th	5th	6th	7th
Family	<input type="radio"/>						
Media Consumption	<input type="radio"/>						
General Education	<input type="radio"/>						
Cultural Appreciation	<input type="radio"/>						
Self-Improvement	<input type="radio"/>						
Global Citizenship	<input type="radio"/>						
Other	<input type="radio"/>						



# Demographic

## 93 Respondents

LISP 1A Spanish Conversation

LISP 1C Spanish Conversation

LISP 1D Spanish Conversation

LISP17 Intermediate Spanish for Social Sciences

LISP18 Intermediate Spanish for Health Sciences

JAPN 10C First Year Japanese III

JAPN 20C Second Year Japanese III

CHIN 10CD First Year Chinese/Dialect III

CHIN 20CD Second Year Chinese/Dialect III

CHIN 100CN Third Year Chinese/Non Native III

LTKO 2C Intermediate Korean: Second Year III

CHIN 10CM First Year Chinese/Mandarin III

CHIN 10CN First Year Chinese/Non Native III

CHIN 20CN Second Year Chinese/Non Native III

LTKO 1C Beginning Korean: First Year III

LTKO 130C Advanced Korean: Third Year III

LIGM 1C German Conversation

LIPO 1C Portuguese Conversation

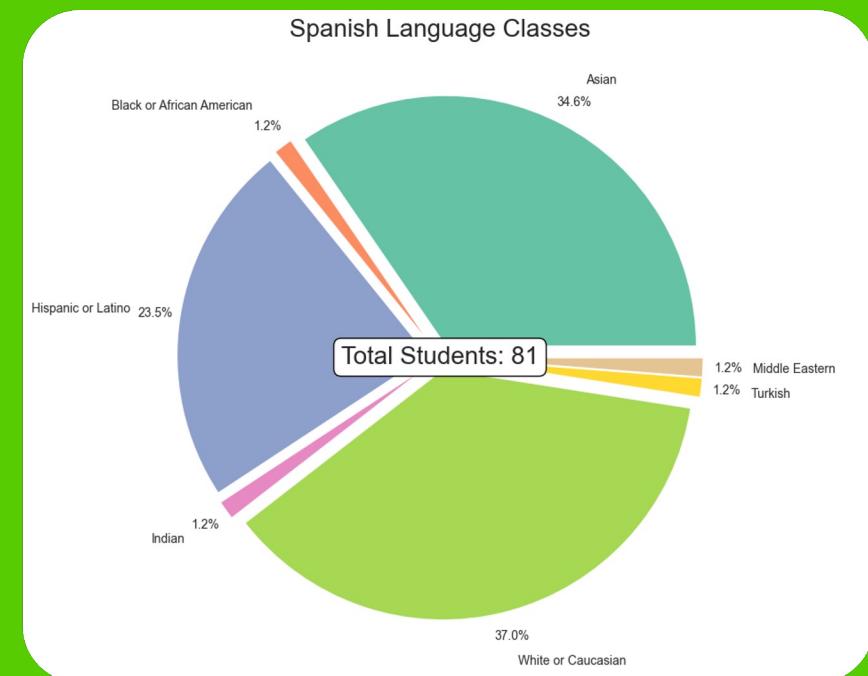
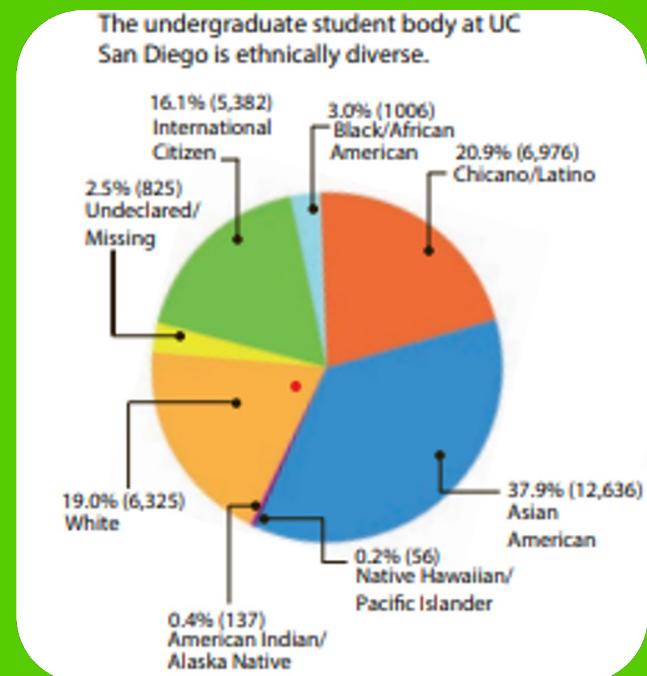
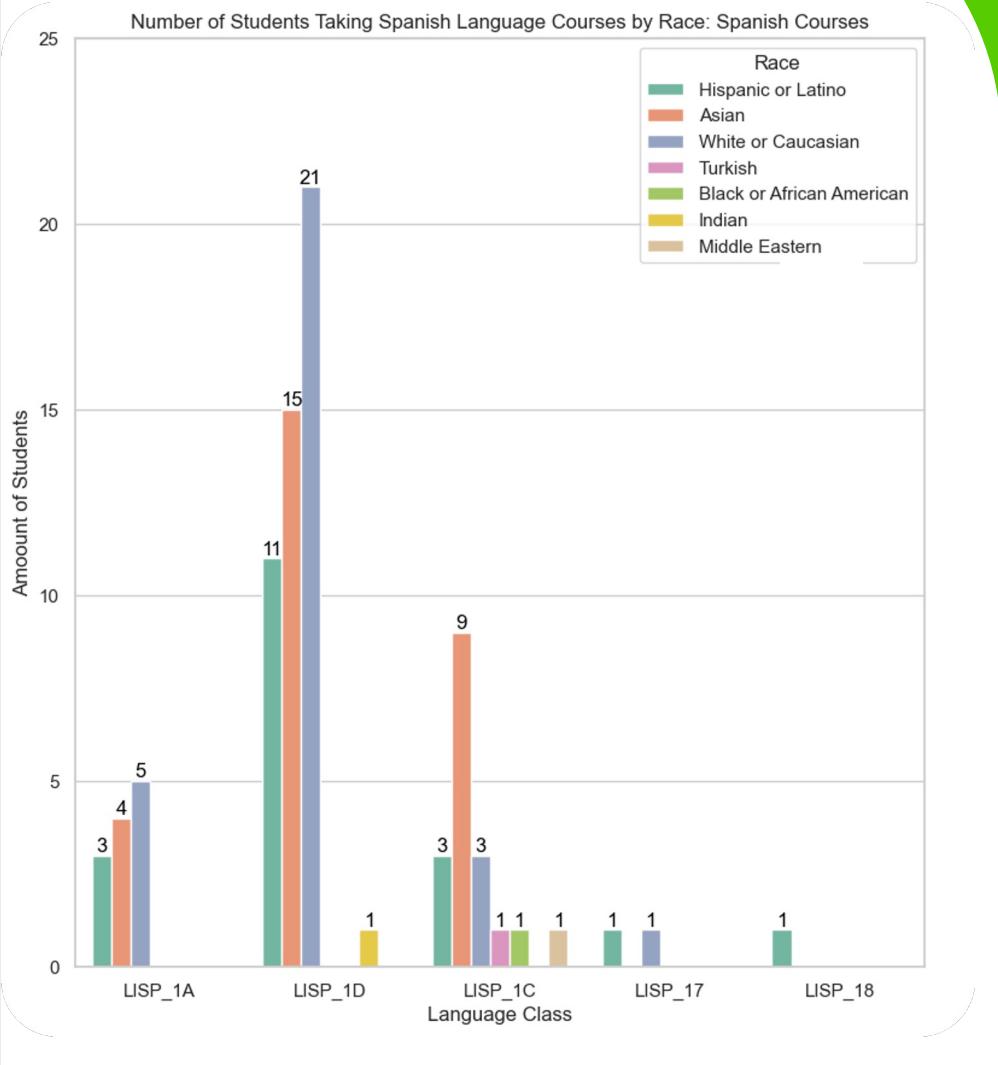
LIIT 1C Italian Conversation

JAPN 130C Third Year Japanese III

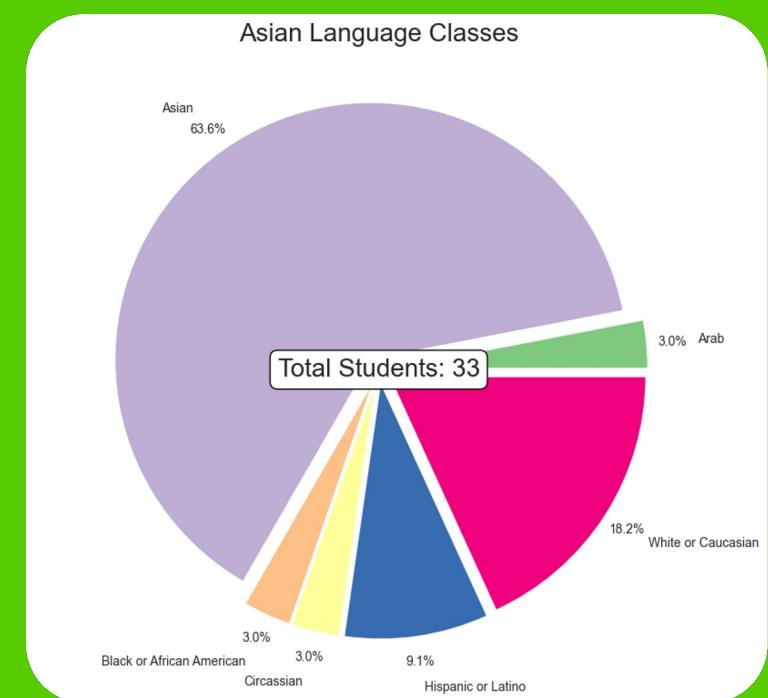
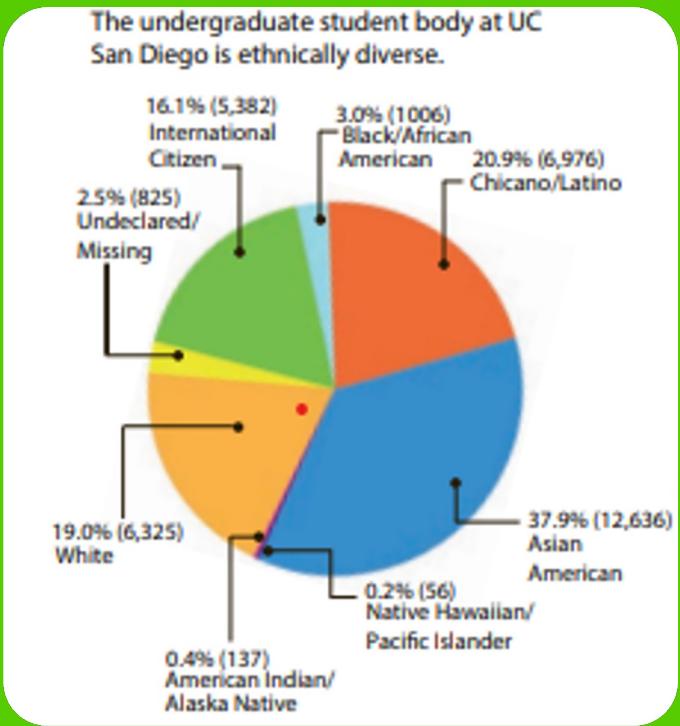
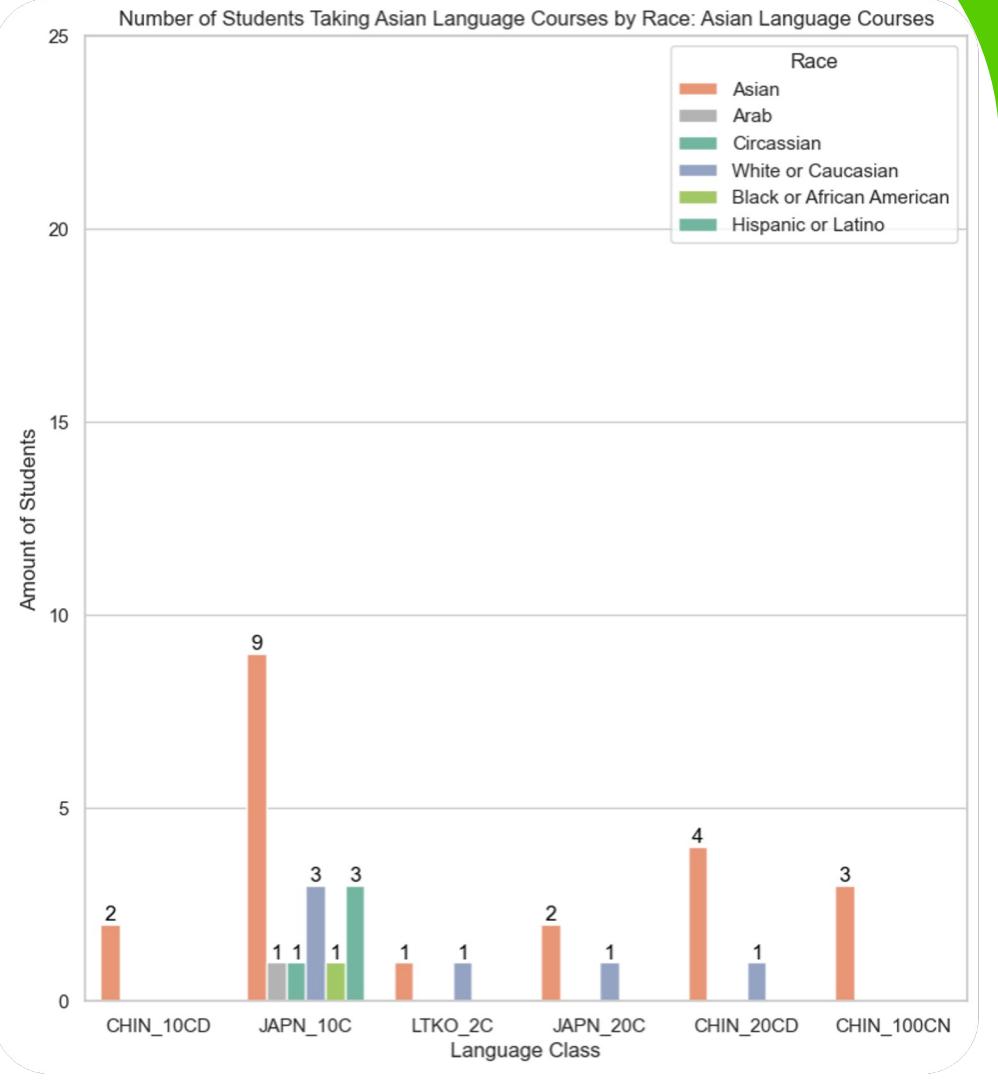
JAPN 135C Japanese for Professional Purposes III

JAPN 140C Fourth Year Japanese III

# Demographic



# Demographic





**Research Question**

Do different motivations affect language retention and acquisition?

# STATS TIME

(n.) Horror Plots, Regressions, Clusters, etc.

GitHub for Methods

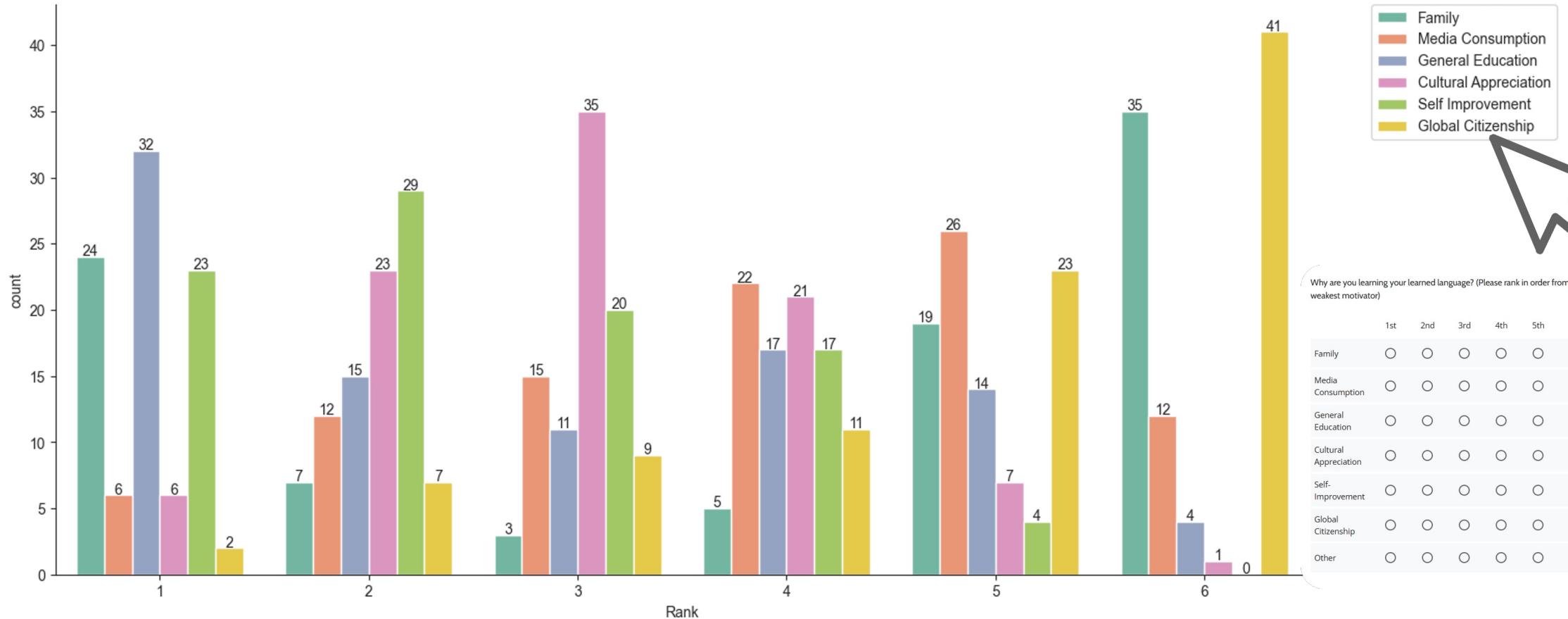


# HYPOTHESIS I

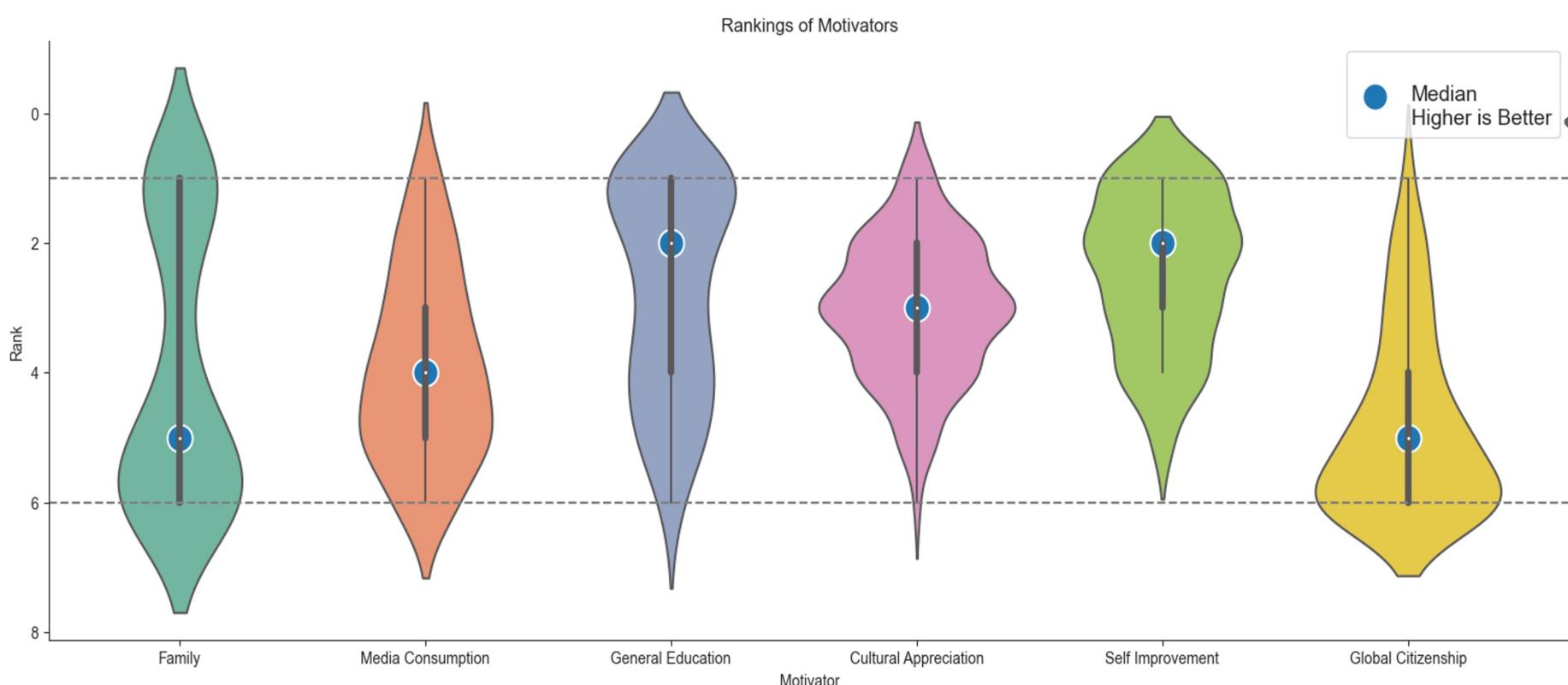
UCSD Students are taking language  
courses for a variety of different  
motivators



# Statsy Stats



# Statsy Stats



Friedman Test

Kendall's W | 0.228766

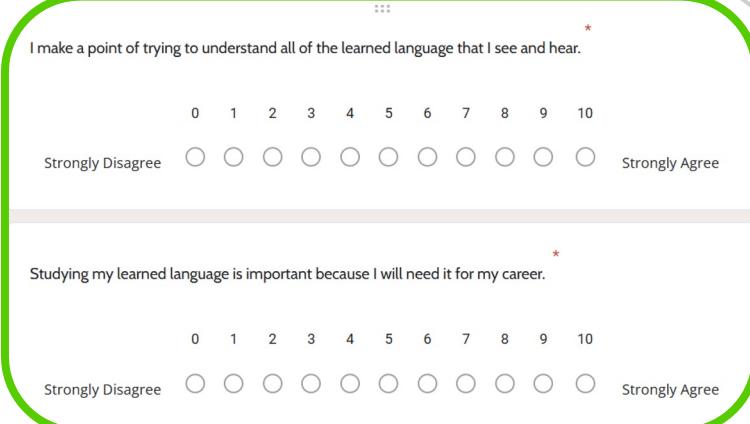
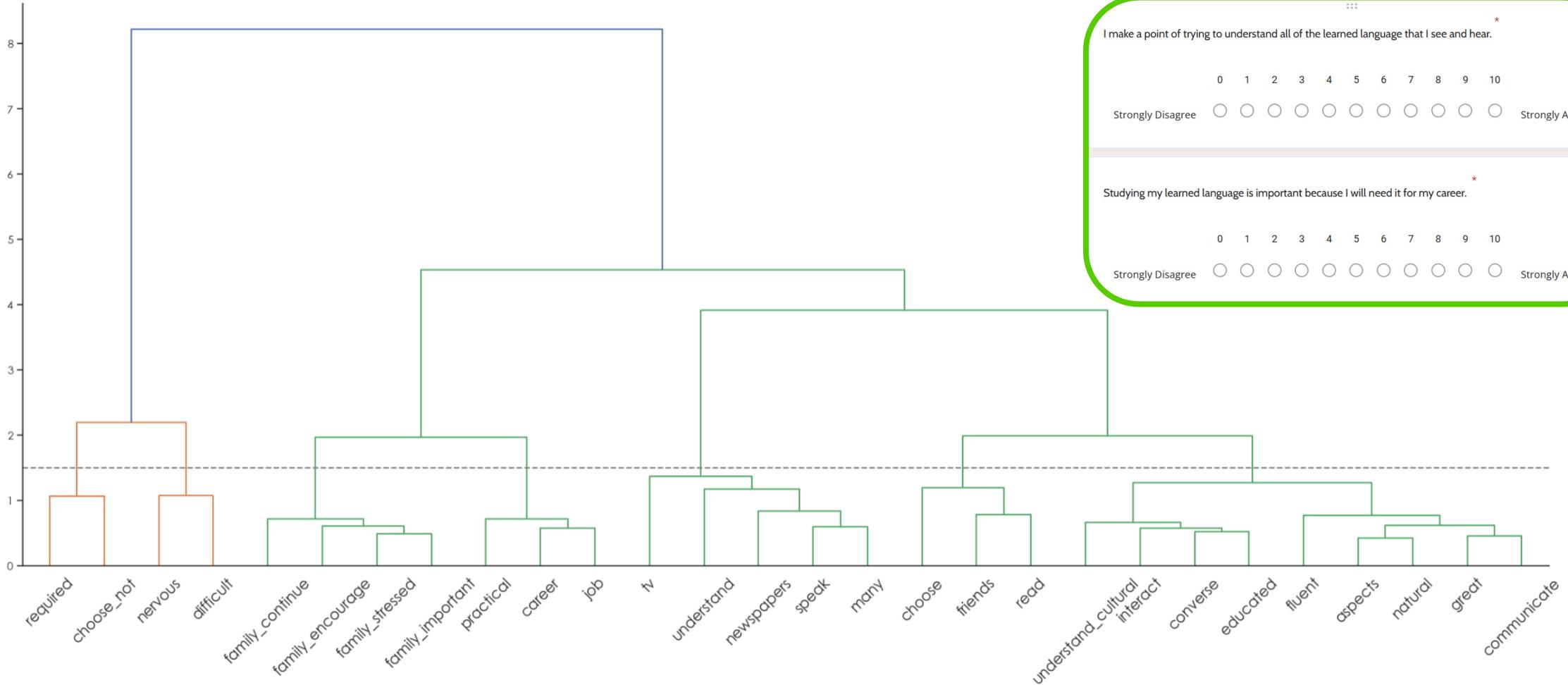
p-value | << 0.05

# HYPOTHESIS 2

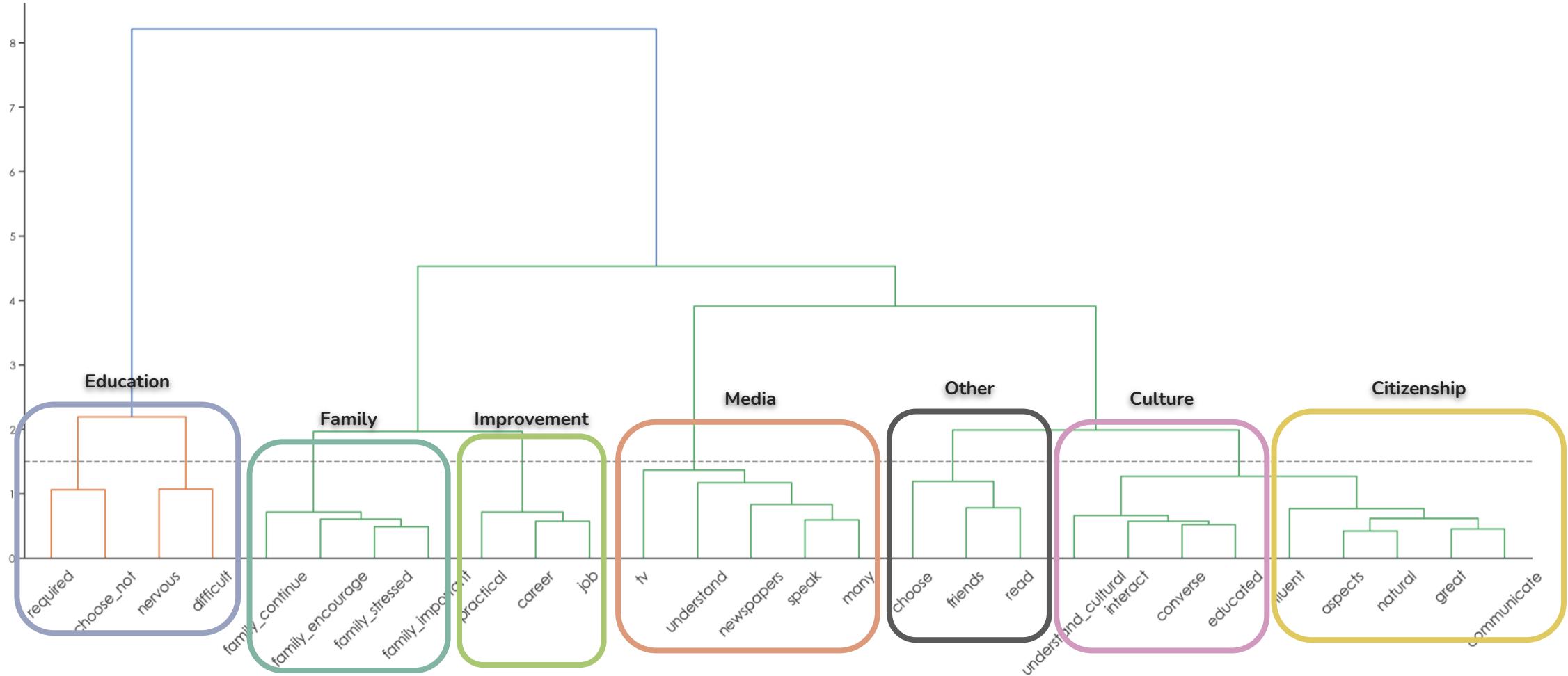
Language motivators converge onto  
specific categories such as  
Integrative, Instrumental, and  
subcategories



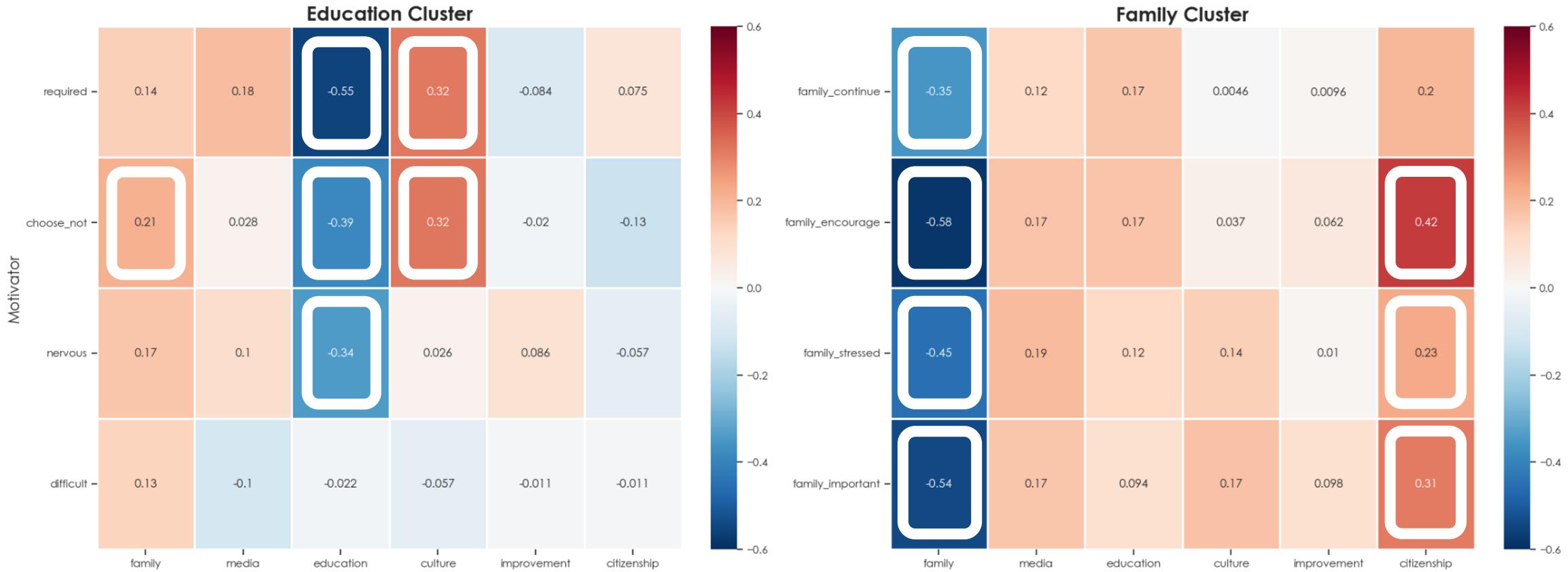
# Dendrogram of Motivators



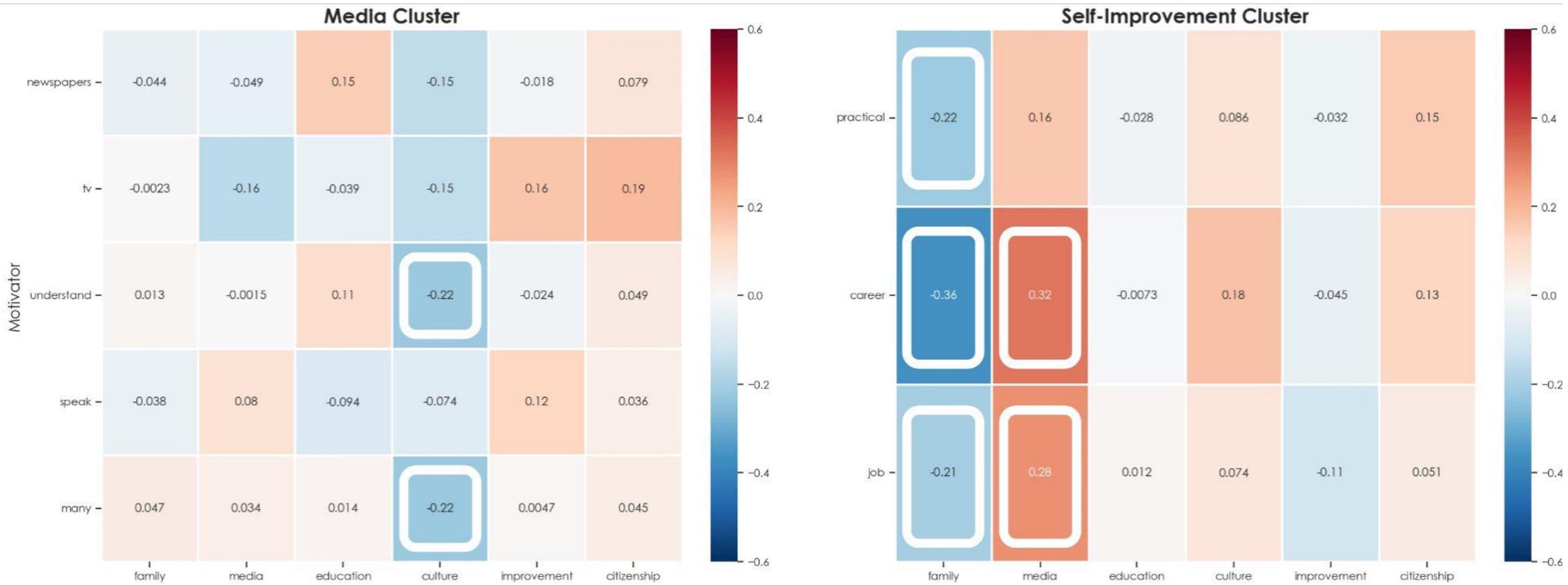
# Dendrogram of Motivators



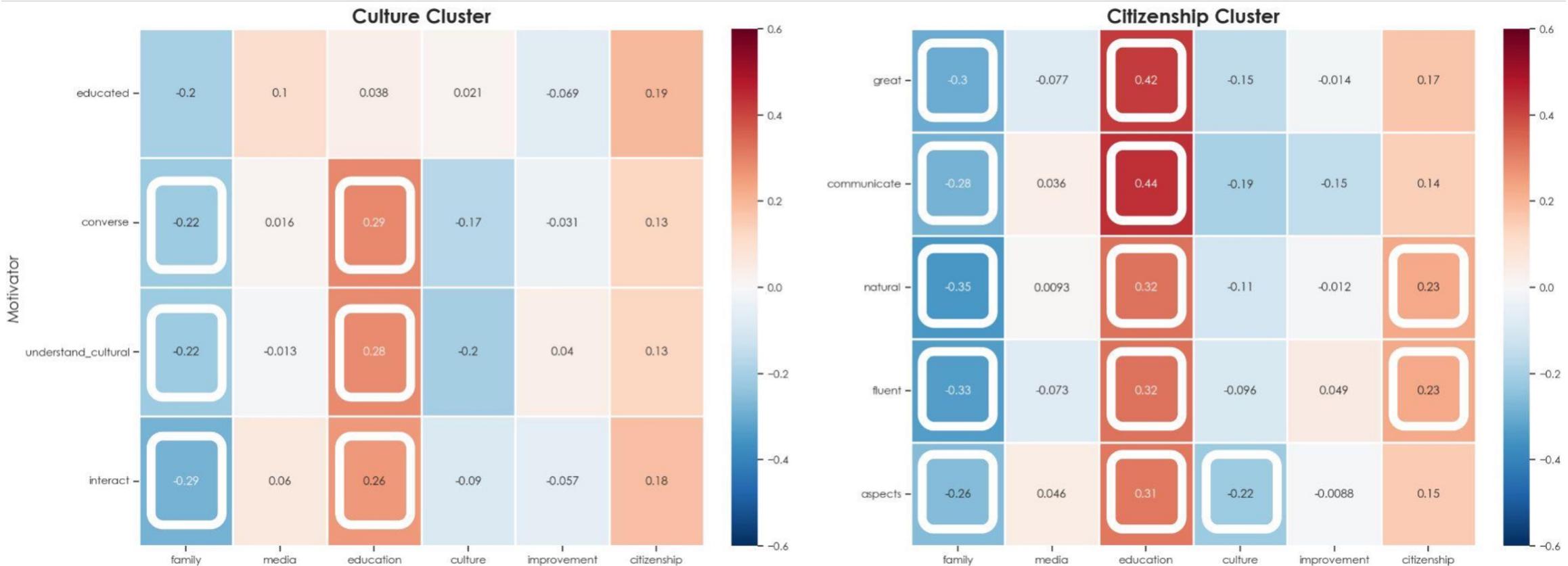
# Correlation of Motivators by Group & Rank (I)



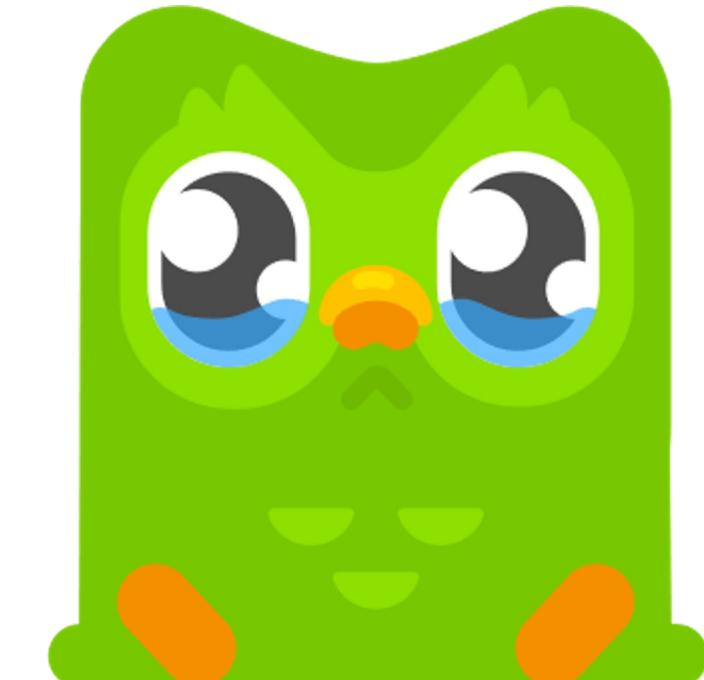
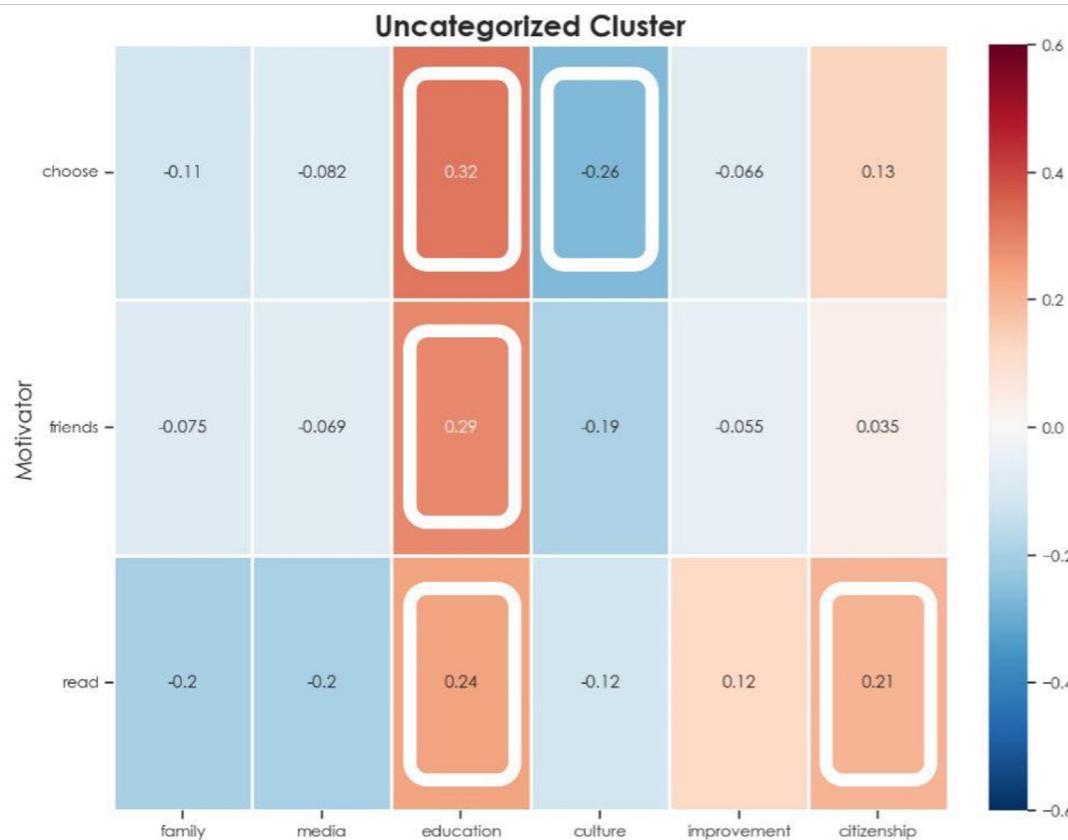
# Correlation of Motivators by Group & Rank (II)



# Correlation of Motivators by Group & Rank (III)



# Correlation of Motivators by Group & Rank (IV)



# HYPOTHESIS 3

Certain motivators have a relationship  
on the usage and acquisition of  
language



# Linear Regression of Perception onto Motivators (I)

Feel Not Learned Enough		Comfortable Small Conversation		Comfortable Adequate Conversation		Consider Fluent		Continue Learning	
	Coefficients		Coefficients		Coefficients		Coefficients		Coefficients
Constant	0.0646	Constant	0.0135	Constant	-0.0214	Constant	0.0121	Constant	0.0370
Family Continue	0.0480	Family Continue	0.0729	Family Continue	-0.0480	Family Continue	-0.1319	Family Continue	-0.0676
Family Encourage	0.2996	Family Encourage	-0.1137	Family Encourage	-0.1300	Family Encourage	-0.1419	Family Encourage	0.2159
Family Stressed	-0.0116	Family Stressed	-0.0534	Family Stressed	0.0632	Family Stressed	-0.0499	Family Stressed	-0.0134
Family Important	-0.1153	Family Important	0.0016	Family Important	-0.0232	Family Important	-0.0339	Family Important	-0.1549
<b>Required</b>	<b>0.1886</b>	<b>Required</b>	0.0329	<b>Required</b>	0.0396	<b>Required</b>	0.0802	<b>Required</b>	-0.0776
Choose Not	0.1429	Choose Not	0.0418	Choose Not	-0.0014	<b>Choose Not</b>	-0.0279	Choose Not	0.0288
<b>Nervous</b>	<b>0.2598</b>	<b>Nervous</b>	-0.1947	<b>Nervous</b>	<b>-0.2953</b>	<b>Nervous</b>	<b>-0.3011</b>	Nervous	0.0214
Difficult	0.1065	Difficult	0.0612	Difficult	-0.0464	<b>Difficult</b>	<b>-0.2854</b>	Difficult	0.0073
Newspapers	0.2687	<b>Newspapers</b>	<b>-0.3596</b>	Newspapers	-0.1712	<b>Newspapers</b>	<b>-0.2471</b>	Newspapers	0.1439
TV	0.0466	TV	0.2004	<b>TV</b>	<b>0.2823</b>	TV	0.0234	TV	0.0232
<b>Understand</b>	<b>-0.3015</b>	<b>Understand</b>	<b>0.2468</b>	Understand	0.0609	Understand	0.1477	Understand	0.0366
Speak	-0.2105	Speak	-0.0293	Speak	0.1709	<b>Speak</b>	<b>0.3377</b>	Speak	-0.2997
Many	-0.0540	<b>Many</b>	<b>0.3146</b>	Many	0.0280	Many	0.0162	Many	0.0731
Practical	-0.1855	Practical	0.1549	Practical	0.2434	Practical	0.0515	Practical	-0.0905
Career	0.1288	Career	-0.1222	Career	-0.0859	Career	0.0668	Career	-0.0203
Job	-0.2066	Job	0.0189	Job	-0.0257	<b>Job</b>	<b>0.3234</b>	Job	0.0406
Educated	0.2072	Educated	0.0978	Educated	-0.0290	Educated	0.1965	Educated	0.0126
Understand Cultural	0.0977	Converse	0.1337	Converse	-0.2250	Converse	-0.3744	Converse	-0.0989
Interact	-0.1854	Understand Cultural	-0.1980	Understand Cultural	0.1975	Understand Cultural	-0.0138	Understand Cultural	0.0781
Great	-0.0560	Interact	0.1706	Interact	0.2789	Interact	0.0212	Interact	-0.0433
Communicate	0.1405	Great	0.2362	Great	0.3178	Great	0.1038	<b>Great</b>	<b>0.6559</b>
Natural	-0.0093	<b>Communicate</b>	<b>0.4230</b>	Communicate	0.0688	Communicate	0.1439	Communicate	0.0802
Fluent	0.1091	Natural	-0.2393	Natural	-0.2629	Natural	-0.2963	Natural	0.3259
Aspects	0.0618	Fluent	0.2123	Fluent	0.2178	Fluent	-0.0457	Fluent	0.1166
Choose	0.0364	Aspects	-0.1925	Aspects	0.1914	<b>Aspects</b>	<b>0.3650</b>	Aspects	0.2478
Friends	0.0428	Choose	-0.1883	Choose	-0.0705	Choose	-0.1020	Choose	0.1359
Read	-0.0485	Friends	-0.0072	Friends	-0.2705	Friends	-0.0784	Friends	-0.1498
Family	-0.0471	Read	-0.1681	Read	-0.1975	Read	-0.1283	Read	-0.0315
Education	0.0304	Family	0.0995	Family	-0.0955	Family	0.3266	Family	0.0501
Media	0.1490	Education	-0.0169	Education	-0.0722	Education	-0.2410	Education	0.2106
Improvement	0.2558	Media	0.1848	Media	-0.0499	Media	0.2684	Media	0.0237
Culture	0.5136	Improvement	0.2834	Improvement	0.3353	Improvement	0.0668	Improvement	0.2823
Citizenship	0.4544	Culture	-0.2226	Culture	-0.4002	Culture	-0.0318	Culture	0.0268
No. Fluent Language	0.1217	Citizenship	-0.0453	Citizenship	-0.1678	Citizenship	-0.1352	Citizenship	0.1830
<b>No. Years Learning</b>	<b>-0.3736</b>	No. Fluent Language	-0.0141	<b>No. Fluent Langug</b>	<b>0.9786</b>	<b>No. Fluent Langug</b>	<b>1.1471</b>	No. Fluent Language	-0.2002
Speaks at Home	-0.6474	No. Years Learning	0.2404	<b>No. Years Learning</b>	<b>0.3840</b>	<b>No. Years Learning</b>	<b>0.4696</b>	No. Years Learning	-0.0819
Spoken at Home	0.6698	Speaks at Home	1.1242	Speaks at Home	0.5453	Speaks at Home	0.6086	Speaks at Home	-0.5625
R-Squared	0.671	Spoken at Home	0.4370	Spoken at Home	0.4842	Spoken at Home	0.6572	Spoken at Home	1.3059
No. Observations	93	R-Squared	0.636	R-Squared	0.719	R-Squared	0.838	R-Squared	0.732
		No. Observations	93	No. Observations	93	No. Observations	93	No. Observations	93

# Linear Regression of Perception onto Motivators (II)

	Continue Structured Learning	Become Certified Fluent	Comfortable Speaking	Comfortable Reading	Comfortable Writing	Comfortable Listening
Motivator Questions	Coefficients	Coefficients	Coefficients	Coefficients	Coefficients	Coefficients
Constant	0.0144	-0.0079	0.0492	0.0180	0.0643	0.0478
<b>Family Continue</b>	<b>0.4532</b>	<b>Family Continue</b>	<b>Family Continue</b>	<b>Family Continue</b>	<b>Family Continue</b>	<b>Family Continue</b>
Family Encourage	-0.3268	0.1131	0.1546	-0.0187	0.2087	0.2093
Family Stressed	0.1010	-0.1645	-0.0988	-0.0329	-0.0040	-0.2071
Family Important	-0.0833	0.1317	-0.0232	0.1151	-0.0951	0.0875
Required	-0.0329	0.1242	-0.0434	0.1498	-0.0448	-0.0756
Choose Not	0.1604	0.0434	0.0781	0.1212	0.1321	0.0360
Nervous	0.0297	-0.0037	-0.0447	-0.0319	-0.1727	
Difficult	0.1383	0.0401	-0.1487	0.2126	<b>Difficult</b>	-0.0509
Newspapers	-0.1281	-0.0006	-0.0377	-0.0056	0.0920	<b>Newspapers</b>
TV	-0.0703	0.1133	0.1222	0.1596	0.0671	0.2249
Understand	0.0463	-0.0366	0.0985	0.1392	0.0744	0.2146
Speak	0.0151	0.3057	0.1216	0.1115	0.3123	0.1879
Many	0.1982	<b>Many</b>	-0.0870	-0.1169	-0.2049	0.0132
Practical	0.0350	0.1361	<b>Practical</b>	<b>Practical</b>	<b>Practical</b>	<b>Practical</b>
Career	0.2007	0.0381	Career	-0.1162	0.0336	0.0907
Job	-0.0315	-0.1276	Job	0.0863	-0.0634	0.0260
Educated	-0.2523	0.1389	Educated	-0.3342	-0.0989	-0.0115
Converse	-0.3526	-0.1001	Converse	0.0009	-0.1280	-0.1176
Understand Cultural	0.2309	0.1376	Understand Cultural	0.0987	0.1353	-0.0181
Interact	0.1974	-0.1624	Interact	0.2883	0.1079	-0.0273
<b>Great</b>	<b>0.5439</b>	Great	0.1268	0.1650	-0.3914	-0.0447
Communicate	-0.0794	0.3569	Communicate	0.3059	<b>Communicate</b>	0.1117
Natural	0.2811	-0.1154	Natural	-0.6800	<b>Natural</b>	-0.3416
Fluent	-0.1821	0.2010	Fluent	0.1819	<b>Fluent</b>	-0.0281
Aspects	-0.0858	<b>Aspects</b>	<b>Aspects</b>	<b>Aspects</b>	Aspects	<b>Aspects</b>
<b>Choose</b>	<b>0.2642</b>	Choose	-0.0825	-0.2215	Choose	<b>0.4971</b>
Friends	-0.1207	Friends	-0.0026	-0.1296	Friends	-0.1099
Read	0.0103	Read	-0.0757	-0.0934	Read	0.0382
Family	0.0127	Family	0.0293	0.0103	Family	0.1600
Education	-0.0232	Education	-0.1013	0.0103	Education	-0.0254
Media	0.0987	Media	-0.0347	0.3484	Media	<b>0.4806</b>
Improvement	0.2104	Improvement	0.1199	0.2056	Improvement	0.2304
Culture	-0.0508	Culture	0.1653	-0.2228	Culture	0.0576
Citizenship	0.0544	Citizenship	-0.3446	0.1303	Citizenship	0.1005
No. Fluent Language	-0.5075	No. Fluent Language	0.2476	0.0938	No. Fluent Language	-0.2349
No. Years Learning	0.0369	No. Years Learning	0.0661	<b>No. Years Learning</b>	<b>No. Years Learning</b>	<b>0.4535</b>
Speaks at Home	0.9639	Speaks at Home	-1.3918	Speaks at Home	Speaks at Home	0.1527
Spoken at Home	-0.3467	Spoken at Home	1.0587	-0.8734	Spoken at Home	0.0397
R-Squared	0.625	R-Squared	0.658	R-Squared	R-Squared	0.629
No. Observations	93	No. Observations	93	No. Observations	No. Observations	93

# Linear Regression of Usage onto Motivators

Times Held Short Conversation		Times Read Outside of Class		Times Watched/Listened Outside Class		Times Had Opportunity to Use		Times Used Duolingo/Software	
	Coefficients		Coefficients		Coefficients		Coefficients		Coefficients
Constant	0.0921	Constant	-0.0414	Constant	0.1636	Constant	-0.1120	Constant	0.0428
Family Continue	-0.0630	Family Continue	-0.1942	Family Continue	0.2301	Family Continue	-0.1278	Family Continue	-0.3759
Family Encourage	0.4404	Family Encourage	-0.6670	Family Encourage	-0.6012	Family Encourage	-0.3827	Family Encourage	0.4956
Family Stressed	-0.4268	Family Stressed	0.5137	Family Stressed	0.2932	Family Stressed	0.4090	Family Stressed	-0.7902
Family Important	-0.1241	Family Important	-0.3411	Family Important	-0.9061	Family Important	0.5738	Family Important	1.0448
Required	-0.2648	Required	0.1130	Required	-0.1700	Required	-0.1542	Required	-0.1321
Choose Not	-0.3410	Choose Not	-0.1213	Choose Not	-1.0225	Choose Not	0.2141	Choose Not	-0.4103
Nervous	-0.1504	Nervous	-0.2455	Nervous	-0.8430	Nervous	-0.0033	Nervous	0.5926
Difficult	-0.3639	Difficult	0.2548	Difficult	0.0541	Difficult	0.5172	Difficult	0.0340
Newspapers	0.1332	Newspapers	0.0112	Newspapers	0.0080	Newspapers	-0.6374	Newspapers	0.4090
TV	0.0726	TV	0.2779	TV	0.4038	TV	0.1050	TV	-0.2226
Understand	0.3560	Understand	<b>1.2982</b>	Understand	<b>1.6999</b>	Understand	0.1502	Understand	-0.4987
Speak	0.0886	Speak	-0.5956	Speak	0.4746	Speak	<b>0.9686</b>	Speak	0.7329
Many	0.0350	Many	0.6440	Many	0.8205	Many	-0.5025	Many	<b>-1.7639</b>
Practical	0.0420	Practical	-0.2763	Practical	0.0913	Practical	-0.3834	Practical	0.2515
Career	-0.1318	Career	-0.8899	Career	-0.0606	Career	0.2473	Career	0.8396
Job	0.2827	Job	0.6298	Job	0.1861	Job	0.2128	Job	-0.9933
Educated	0.0150	Educated	1.2099	Educated	0.1208	Educated	0.6538	Educated	-0.3875
Converse	-0.3862	Converse	0.3042	Converse	1.1576	Converse	<b>1.0844</b>	Converse	<b>-2.1712</b>
Understand Cultural	-0.0284	Understand Cultural	-0.8429	Understand Cultural	-0.8653	Understand Cultural	-0.5563	Understand Cultural	1.5134
Interact	-0.2103	Interact	0.6244	Interact	-0.0119	Interact	-0.0670	Interact	1.5799
<b>Great</b>	<b>1.0036</b>	<b>Great</b>	<b>1.8620</b>	<b>Great</b>	-0.1744	<b>Great</b>	<b>1.1038</b>	<b>Great</b>	1.0235
Communicate	0.0983	Communicate	-1.1245	Communicate	-0.4859	Communicate	0.0176	Communicate	-1.3767
Natural	-0.7293	Natural	0.5402	Natural	0.8136	Natural	-0.8365	Natural	-0.9457
Fluent	0.5281	Fluent	-0.5054	Fluent	-0.3862	Fluent	-0.1928	Fluent	-0.5238
Aspects	-0.1957	Aspects	-1.3900	Aspects	-0.7481	Aspects	-0.6039	Aspects	0.6980
<b>Choose</b>	<b>-0.8898</b>	<b>Choose</b>	-0.5859	<b>Choose</b>	-1.0148	<b>Choose</b>	0.0849	<b>Choose</b>	0.4453
Friends	0.4325	Friends	0.0319	Friends	-0.2173	Friends	0.3190	Friends	0.1039
Read	-0.4837	Read	-0.0661	Read	-0.4346	Read	-0.3308	Read	0.3505
Family	0.2299	Family	0.2202	Family	0.2435	Family	-0.2433	Family	-0.4512
Education	0.7577	Education	-0.5144	Education	0.1738	Education	-0.5477	Education	-0.2231
Media	-0.3150	Media	0.3320	<b>Media</b>	<b>2.1604</b>	Media	-0.1578	Media	1.3755
<b>Improvement</b>	<b>0.8093</b>	Improvement	-1.1517	Improvement	0.3876	Improvement	-0.5059	<b>Improvement</b>	<b>1.9187</b>
Culture	0.5638	Culture	0.3506	Culture	0.5865	Culture	-0.4040	Culture	-1.1651
Citizenship	-0.1113	Citizenship	-0.1061	Citizenship	-0.1153	Citizenship	-0.4937	Citizenship	-0.5566
No. Fluent Languages	-0.1792	No. Fluent Languages	0.6745	No. Fluent Languages	-1.3307	No. Fluent Languages	-0.6123	No. Fluent Languages	2.9737
No. Years Learning	-0.2655	No. Years Learning	0.1707	No. Years Learning	-0.1989	No. Years Learning	-0.4100	No. Years Learning	-0.3437
Speaks at Home	3.1390	Speaks at Home	-5.4585	Speaks at Home	4.6490	Speaks at Home	0.0237	Speaks at Home	-6.8386
<b>Spoken at Home</b>	<b>5.5371</b>	<b>Spoken at Home</b>	<b>8.2786</b>	Spoken at Home	4.5920	Spoken at Home	0.6531	Spoken at Home	0.9066
R-Squared	0.714	R-Squared	0.481	R-Squared	0.694	R-Squared	0.507	R-Squared	0.544
No. Observations	82	No. Observations	82	No. Observations	82	No. Observations	82	No. Observations	82

# Ordinal Logistic Regression of Grades onto Motivators

	Current Grade		Expected Grade	
		Coefficients		Coefficients
Motivator Questions	Family Continue	0.3639	Family Continue	0.1427
	Family Encourage	- 1.3226	Family Encourage	- 0.1068
	Family Stressed	- 0.3700	Family Stressed	0.0806
	Family Important	0.7969	Family Important	- 0.0340
	Required	0.9357	Required	0.0620
	Choose Not	- 1.3144	Choose Not	<b>- 0.4899</b>
	Nervous	0.5947	Nervous	- 0.0665
	Difficult	1.5374	Difficult	<b>0.5855</b>
	Newspapers	- 0.8395	Newspapers	- 0.2476
	TV	1.7224	TV	0.3108
	Understand	0.1639	Understand	0.0250
	Speak	1.8990	Speak	0.3806
	Many	- 0.4268	Many	- 0.0865
	Practical	- 1.1088	Practical	- 0.2816
	Career	- 0.4025	Career	- 0.0677
	Job	1.7990	Job	<b>0.4055</b>
	Educated	1.1274	Educated	0.2177
	Converse	0.5222	Converse	- 0.0372
	Understand Cultural	1.4142	Understand Cultural	0.3000
	Interact	- 1.7965	Interact	- 0.1269
Ranks	Great	1.8368	Great	0.2900
	Communicate	1.1038	Communicate	0.0553
	Natural	- 1.7980	Natural	- 0.3361
	Fluent	- 2.0639	Fluent	<b>- 0.6586</b>
	Aspects	1.0667	Aspects	- 0.0507
	Choose	- 1.9216	Choose	<b>- 0.4863</b>
	Friends	- 0.6738	Friends	- 0.0281
	Read	- 1.5931	Read	- 0.1059
	Family	- 0.3732	Family	0.4159
	Education	- 0.9939	Education	0.1978
	Media	1.0616	Media	0.1553
	Improvement	0.2452	Improvement	0.1651
	Culture	- 0.4823	Culture	0.3474
Demo	Citizenship	- 1.6144	Citizenship	- 0.1980
	No. Fluent Languages	- 7.7542	No. Fluent Language	<b>- 1.5236</b>
	No. Years Learning	<b>- 1.1054</b>	No. Years Learning	<b>- 0.4184</b>
	Speaks at Home	0.4400	Speaks at Home	0.6531
	Spoken at Home	4.3105	Spoken at Home	- 0.9384
	No. Observations	84	No. Observations	84



# Limitations and Future Directions

- Larger, more diverse sample size
- Further data analysis
  - View correlates between each motivator to learning outcome/perception
- One Takeaway:  
Help students become more comfortable with using a language



# Roles

Nhan Quach: Team Lead/Project Manager, Survey Developer, Data Analyst, Slide Beautifier

Lauren Molony: Literature Reviewer, Survey Developer, Presentation Designer

Aditya Datta: Outreach Coordinator, Data Collector, Survey Developer

Taylor Chin: Literature Reviewer, Data Collector, Survey Developer

Joseph Morales: Survey Developer, Data Analyst, Presentation Designer

Chris Villafan: Survey Assistant Developer, Data Collector

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