

American Language Center Market Research

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Abstract

The overarching question that our group aimed to answer is: How can ALC more effectively target global marketing efforts? In order to most effectively answer this, we further broke down the question by analyzing more specific aspects of the program. First, we looked into the demographic information of the students enrolled in the ALC program, analyzing factors such as age, gender, and country of origin in order to uncover any patterns within and between different groups. By looking into this information in combination with the medium that students hear about the ALC program, we could then target the most underserved groups and recommend future marketing improvement in these areas. Second, we analyzed and reviewed overall program satisfaction ratings and the factors that impacted these results. To do so, we extracted information from program evaluations, divided the data by course and level (beginner, intermediate, advanced), and performed logistic regression in order to determine which program factors were significant in predicting overall satisfaction.

Through conducting exploratory analysis, we were able to draw conclusions regarding the patterns and behavior of various demographic groups. In exploring geographic data, we were able to extract the most popular methods that students hear about the program within each region, with internet being the most common overall and methods such as friends/family and agents, for instance, being the most common in Saudi Arabia and Japan respectively. This information allows us to isolate the optimal method of advertisement in each region, consequently giving us a foundation for addressing our goal of improving global marketing efforts.

Through our logistic regression on program evaluation, we concluded that ALC should improve marketing by targeting Asian countries and women in their 20's, as well as increasing internet advertisements. Regarding specific aspects of the curriculum, we found that improvement in grammar and listening played a large role in overall satisfaction, making it essential that ALC focus on strengthening these areas. Moving forward, we can deepen our analysis through text mining, as this would allow us to target specific, recurring concerns that students have expressed about the program, enabling us to better tailor our recommendations.

American Language Center Market Research

Albert Na, Annie Choi, Breanna Qin, Tiffaney Pi

Clear Statement of the Problem to be solved (in context):

- a. How can the ALC more effectively target their global marketing efforts? By looking at well represented and underrepresented groups (ex: age, gender, region, etc.), we can determine how to improve marketing strategies.
- b. What parts of the ALC program (ex: instruction, curriculum, English learning, etc.) need improvement?

Variables of the study and how they were measured:

Program Evaluations: Each variable was converted to either 1 (satisfied) or 2 (not satisfied).

<u>Good/Bad</u> “Very good” → 1 “Somewhat good” → 1 “Somewhat bad” → 2 “Very bad” → 2	<u>Agree/Disagree</u> “I strongly agree” → 1 “I somewhat agree” → 1 “I somewhat disagree” → 2 “I strongly disagree” → 2	<u>Satisfied/Dissatisfied</u> “Very satisfied” → 1 “Somewhat satisfied” → 1 “Somewhat dissatisfied” → 2 “Very dissatisfied” → 2
<u>Improvement</u> “A - a lot” → 1 “B - some” → 1 “C - not much” → 2 “D - none” → 2	<u>Satisfied/Unsatisfied</u> “A-very satisfied” → 1 “B-somewhat satisfied” → 1 “C-somewhat unsatisfied” → 2 “D-very unsatisfied” → 2	<u>Satisfied overall (Response)</u> A → 1 B → 1 C → 2 D → 2

Response variable: Satisfied with the ALC program in general

Predictor variables & how they were measured (19): General Evaluation of the Teacher (Good/Bad), General Evaluation of the Course (Good/Bad), Teacher is organized and prepared (Agree/Disagree), Teacher gives interesting activities (Agree/Disagree), Teacher explains things clearly (Agree/Disagree), Teacher answers questions well (Agree/Disagree), Teacher gives

American Language Center Market Research

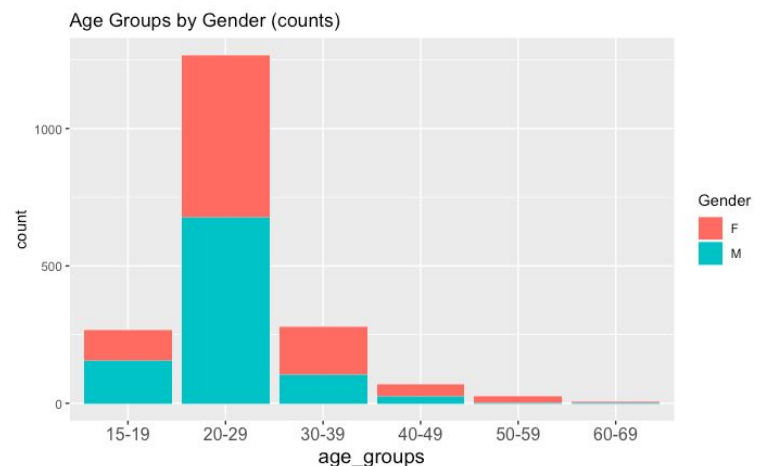
Albert Na, Annie Choi, Breanna Qin, Tiffaney Pi

students chances to participate in class (Agree/Disagree), Satisfied with textbooks (Satisfied/Dissatisfied), Satisfied with handouts/materials (Satisfied/Dissatisfied), Listening skills (Improvement), Speaking skills (Improvement), Grammar skills (Improvement), Knowledge of vocabulary/idioms (Improvement), Knowledge of American culture (Improvement), Pronunciation (Improvement), Satisfied with academic counseling (Satisfied/Unsatisfied), Satisfied with visa counseling (Satisfied/Unsatisfied), Satisfied with Lindbrook office (Satisfied/Unsatisfied), Satisfied with help from main ALC office (Satisfied/Unsatisfied)

Exploratory Data Analysis:

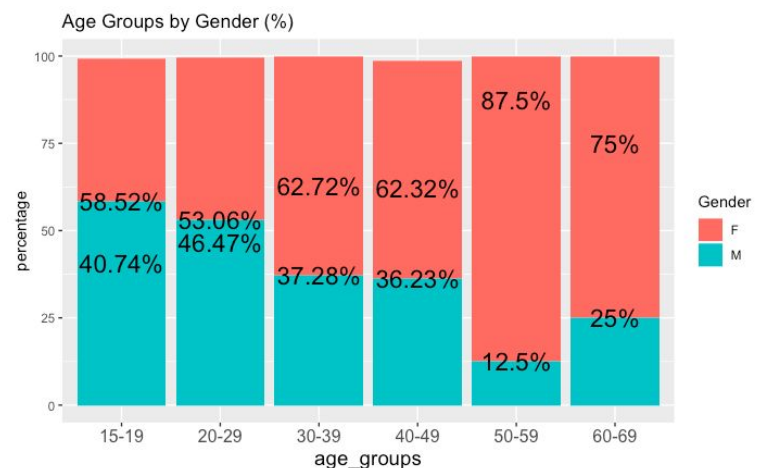
Age Groups by Gender (counts):

The majority of students in the ALC program are between 20-29 years old, which is not surprising because that is the typical age for university students. Within each of the age groups, the different colors in the bar represent the proportion of Male (blue) versus Female (red) students.



Age Groups by Gender (%):

Now that we know the most common age range of ALC students, we can take a closer look into the exact breakdown of gender within every age group. In every age group, more than half of the students are Female. It is interesting that as age



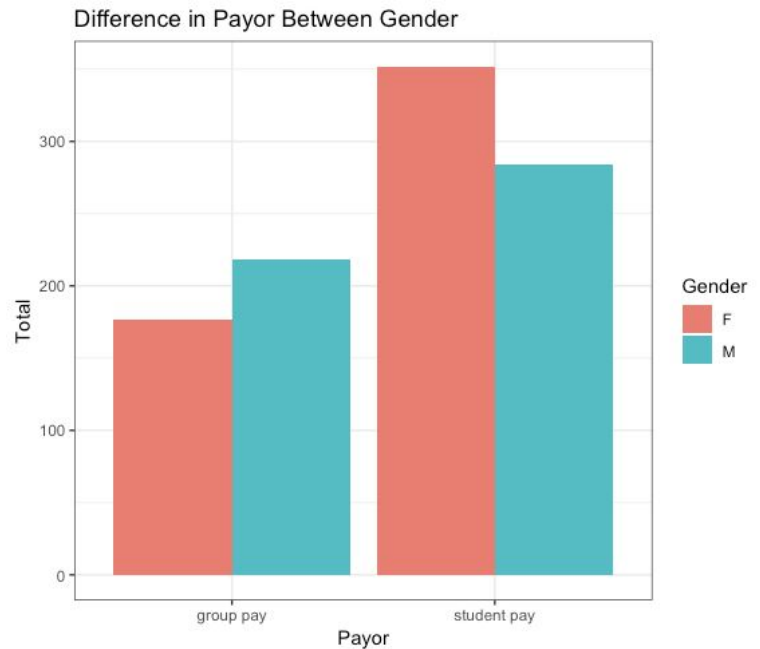
American Language Center Market Research

Albert Na, Annie Choi, Breanna Qin, Tiffaney Pi

increases, the proportion of Female students get significantly larger. For ages 50-59, the proportion of Female students is nearly 90%.

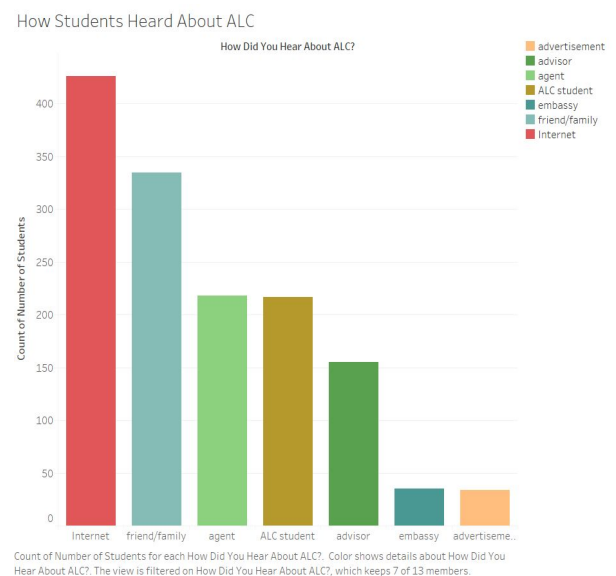
Difference in Payor By Gender:

There are two payment options: group pay and student pay. Overall, we can see that the majority of students rely on student pay to pay for the ALC program, meaning that they independently pay for the program. Within these groups, however, we see that more females use student pay, whereas more males use group pay.



How Students Heard About ALC:

There are several options in which ALC students could have heard about the program, the top one by far was the Internet. This plot should convey to ALC that any program information online is extremely influential if they want to maintain steady enrollment. Word of mouth is also very important in publicizing the ALC program.



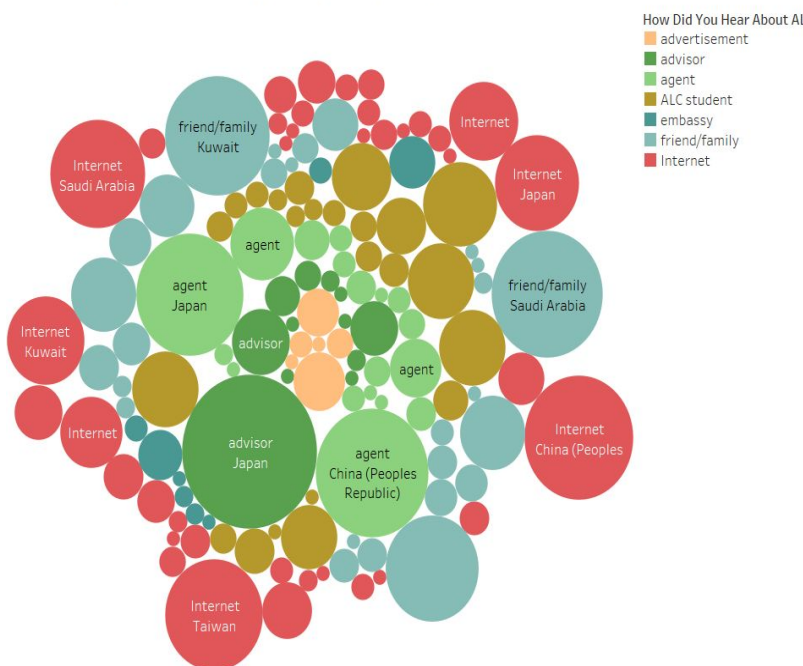
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Albert Na, Annie Choi, Breanna Qin, Tiffaney Pi

How Students Heard About ALC (By Country):

Continuing from the plot above, we take a deeper look into the way students heard about ALC split by their country of citizenship. The color represents the various ways students heard about ALC and the size of the circles represents the count by country. When we split by country, we see that specifically students from Asia (China, Japan, Taiwan) hear about the program from agents/advisors. Students from the top countries (Saudi Arabia, Japan, China, Taiwan) all equally hear about the ALC on the Internet. We recommend that ALC divert their marketing efforts according to the country they are trying to market to. For the most part, they want to increase advertising through the internet or encourage ways to promote the program through word of mouth. However, in China, Japan, and other East Asian countries, they should try to maintain contact with agents/advisors in these countries, possibly through sending emails or brochures to different agencies/institutions promoting ALC.

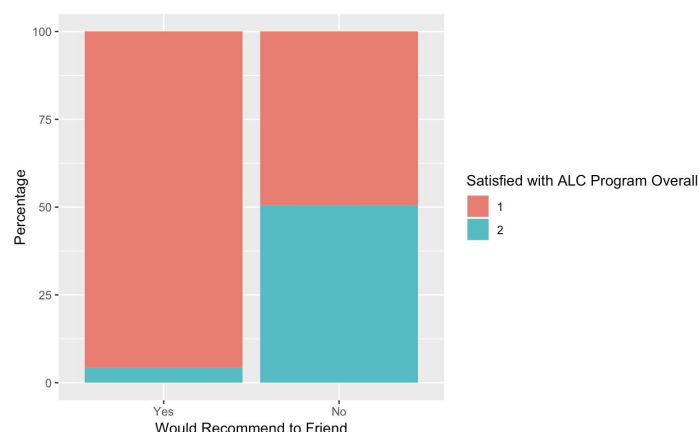
How Students Heard About ALC By Country



How Did You Hear About ALC? and Country of Citizenship. Color shows details about How Did You Hear About ALC?. Size shows count of How Did You Hear About ALC?. The marks are labeled by How Did You Hear About ALC? and Country of Citizenship. The view is filtered on How Did You Hear About ALC?, which keeps 7 of 13 members.

Are you Satisfied with the ALC program Overall?

In this plot, we take a look at the proportion of students who are satisfied with the ALC program overall split by the binary variable: would recommend the program to a friend (Yes or No).

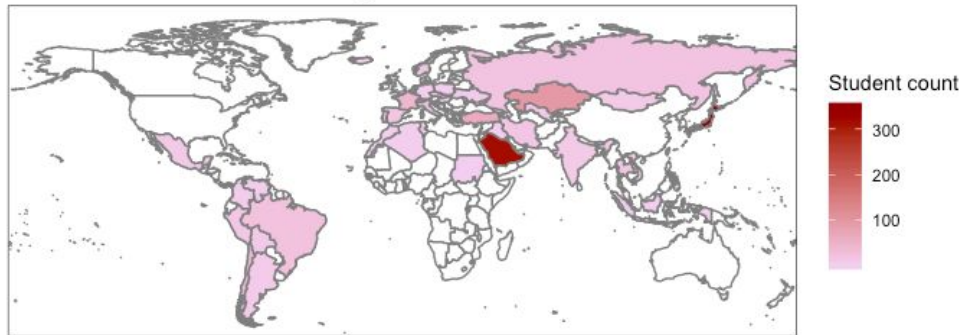


American Language Center Market Research

Albert Na, Annie Choi, Breanna Qin, Tiffaney Pi

For those who would recommend the program to a friend, nearly all of them were satisfied with the program overall. And for those who would *not* have recommended the program to a friend, only about half of them were satisfied with the program overall.

Where are ALC students coming from?



Where are ALC students coming from (map, above):

According to the world map where the countries are highlighted in dark pink and red, most students come from the Middle East and Asia. Specifically, the top two countries of students' citizenship appear to be Saudi Arabia and Japan. This result makes sense because the ALC program is an English intensive training program and students are coming from countries where English is not the primary language.

Statistical analysis used to answer the research question: Logistic Regression

Because of how heavily word of mouth contributes to publicizing ALC, we use the Program Evaluations data to grab insight into which aspects of the ALC program can be improved to increase student satisfaction. Since students who are satisfied with the program are likely to also recommend ALC to their friends, we want to find if there is anything in particular

American Language Center Market Research

Albert Na, Annie Choi, Breanna Qin, Tiffaney Pi

that should be improved in the ALC program. As mentioned previously, we converted all the values in the Program Evaluations data to a scale of 1 (indicating satisfaction or agreement to a question) or 2 (indicating dissatisfaction or disagreement).

We also split the data into 3 different groups depending on what time the class was offered. Each time corresponds to different class structures, for example, the Monday 9AM-12PM class focuses on reading, writing, and grammar, the Monday 1-3 PM class focuses on speaking, listening, and discussion, while the Tuesday/Thursday class focuses on English electives. We further split these 3 classes into 3 levels: beginner, intermediate, and advanced. Courses in the 100-101 range were considered to be beginner courses, the 102-104 range were intermediate courses, while courses greater than 105 were considered to be advanced courses.

9AM-12PM (Reading, Writing, Grammar)	1-3PM (Speaking, Listening, Discussion Based)	T/R (Electives)
Beginner (n=410)	Beginner (n =206)	Beginner (n = 172)
Intermediate (n=1,273)	Intermediate (n=642)	Intermediate (n = 559)
Advanced (n=1,005)	Advanced (n=508)	Advanced (n = 473)

We split our data in this way because students in differing class structures and levels may have different motivations and expectations out of ALC, and we want to see what aspects of the ALC program could be improved for each of these students. To do so, we run 9 different logistic regression models (see table above) in order to see which predictors are significant in determining whether ALC students are overall satisfied with the program.

Summary of results

9-12pm Beginners:

Variable	Coefficient	p-value	Log Odds	95% Confidence Interval
General evaluation of teacher	0.094668	0.50895	0.9477980	0.8085446 to 1.1110347
General evaluation of	-0.053614	0.12229	0.8775082	0.7438358 to 1.0352025

American Language Center Market Research

Albert Na, Annie Choi, Breanna Qin, Tiffaney Pi

course				
Teacher is organized and prepared	0.096575	0.31526	1.1013923	0.9124783 to 1.3294179
Teacher gives interesting activities	-0.030209	0.76683	0.9702424	0.7947665 to 1.1844615
Teacher explains things clearly	0.078032	0.38943	1.0811569	0.9053712 to 1.2910728
Teacher answers questions well	-0.244816	0.00987	0.7828486	0.6507900 to 0.9417048
Teacher gives students chances to participate in class	0.078788	0.52566	1.0819753	0.8485349 to 1.3796374
Satisfaction with textbooks used	0.078667	0.39370	1.0818437	0.9031716 to 1.2958619
Satisfaction with handouts and other materials used in the course	0.003731	0.95822	1.0037376	0.8730871 to 1.1539389
Listening skills improved	0.225480	4.46e-05	1.2529234	1.1261802 to 1.3939307
Speaking skills improved	-0.038074	0.37763	0.9626421	0.8846812 to 1.0474732
Grammar skills improved	0.068644	0.20544	1.0710551	0.9633113 to 1.1908497
Knowledge of vocabulary and idioms improved	0.167337	5.44e-05	1.1821526	1.0911757 to 1.2807147
Knowledge of American culture improved	0.061525	0.30585	1.0634566	0.9455065 to 1.1961207
Pronunciation skills improved	0.066657	0.27715	1.0689292	0.9480582 to 1.2052104
Satisfaction with academic counseling	-0.016333	0.82231	0.9837997	0.8532051 to 1.1343835
Satisfaction with visa counseling	-0.138399	0.16391	0.8707513	0.7169297 to 1.0575763
Satisfaction with Lindbrook office staff	0.851610	4.98e-11	2.3434171	1.8349300 to 2.9928136

American Language Center Market Research

Albert Na, Annie Choi, Breanna Qin, Tiffaney Pi

Satisfaction with help from main ALC office, applications, enrollment, housing	-0.073769	0.14786	0.9288863	0.8407851 to 1.0262192
Recommend ALC to friends	-0.061248	0.19745	0.9405901	0.8571181 to 1.0321912

9-12pm Intermediates:

Variable	Coefficient	p-value	Log Odds	95% Confidence Interval
General evaluation of teacher	0.2038992	0.00258	1.2262	1.0743 to 1.3995
General evaluation of course	0.2501610	8.74e-06	1.2842	1.1509 to 1.4330
Teacher is organized and prepared	-0.0224322	0.66867	0.9778	0.8824 to 1.0836
Teacher gives interesting activities	-0.1602239	0.01262	0.8520	0.7514 to 0.9660
Teacher explains things clearly	-0.1451770	0.06220	0.8649	0.7426 to 1.0072
Teacher answers questions well	-0.0558336	0.34506	0.9457	0.8423 to 1.0618
Teacher gives students chances to participate in class	-0.1446119	0.00199	0.8654	0.7898 to 0.9482
Satisfaction with textbooks used	0.0129806	0.73673	1.0131	0.9393 to 1.0927
Satisfaction with handouts and other materials used in the course	-0.0005606	0.99207	0.9994	0.8948 to 1.1163
Listening skills improved	-0.0721923	0.04218	0.9304	0.8679 to 0.9973
Speaking skills improved	0.0931743	0.00623	1.0977	1.0269 to 1.1732
Grammar skills improved	0.1844113	3.46e-06	1.2025	1.1130 to 1.2992

American Language Center Market Research

Albert Na, Annie Choi, Breanna Qin, Tiffaney Pi

Knowledge of vocabulary and idioms improved	-0.0905513	0.00275	0.9134	0.8610 to 0.9690
Knowledge of American culture improved	0.0833770	0.00281	1.0870	1.0293 to 1.1479
Pronunciation skills improved	0.0340963	0.31137	1.0347	0.9686 to 1.1052
Satisfaction with academic counseling	0.2480703	3.97e-11	1.2816	1.1918 to 1.3781
Satisfaction with visa counseling	0.1009255	0.00595	1.1062	1.0296 to 1.1885
Satisfaction with Lindbrook office staff	-0.2864174	1.12e-10	0.7509	0.6891 to 0.8183
Satisfaction with help from main ALC ALC office, applications, enrollment, housing	0.1237321	2.23e-05	1.1317	1.0692 to 1.1979
Recommend ALC to friends	0.0853562	0.00773	1.0891	1.0230 to 1.1595

9-12pm Advanced:

Variable	Coefficient	p-value	Log Odds	95% Confidence Interval
General evaluation of teacher	-0.016997	0.790081	0.9831	0.8676 to 1.1141
General evaluation of course	-0.015738	0.812254	0.9844	0.8645 to 1.1208
Teacher is organized and prepared	0.232414	1.19e-05	1.2616	1.1380 to 1.3987
Teacher gives interesting activities	0.058440	0.247171	1.0602	0.9604 to 1.1704
Teacher explains things clearly	0.189290	1.36e-05	1.2084	1.1104 to 1.3150
Teacher answers questions well	-0.006671	0.886013	0.9934	0.9068 to 1.0882
Teacher gives students chances to participate	-0.072952	0.181844	0.9296	0.8353 to 1.0346

American Language Center Market Research

Albert Na, Annie Choi, Breanna Qin, Tiffaney Pi

in class				
Satisfaction with textbooks used	-0.100253	0.002014	0.9046	0.8491 to 0.9638
Satisfaction with handouts and other materials used in the course	0.056803	0.121131	1.0584	0.9852 to 1.1371
Listening skills improved	0.172516	1.46e-05	1.1883	1.0998 to 1.2839
Speaking skills improved	0.079069	0.000417	1.0823	1.0360 to 1.1306
Grammar skills improved	-0.005469	0.856398	0.9945	0.9374 to 1.0552
Knowledge of vocabulary and idioms improved	-0.158321	1.19e-07	0.8536	0.8056 to 0.9044
Knowledge of American culture improved	0.136227	1.59e-07	1.1459	1.0897 to 1.2051
Pronunciation skills improved	-0.005347	0.794534	0.9947	0.9555 to 1.0355
Satisfaction with academic counseling	0.276840	2.51e-14	1.3190	1.2305 to 1.4137
Satisfaction with visa counseling	0.012063	0.707609	1.0121	0.9503 to 1.0780
Satisfaction with Lindbrook office staff	-0.217231	0.001007	0.8047	0.7075 to 0.9154
Satisfaction with help from main ALC ALC office, applications, enrollment, housing	-0.091051	0.018535	0.9130	0.8465 to 0.9846
Recommend ALC to friends	-0.229363	1.33e-06	0.7950	0.7252 to 0.8716

M 1-3pm Beginners:

Variable	Coefficient	p-value	Log Odds	95% Confidence Interval
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American Language Center Market Research

Albert Na, Annie Choi, Breanna Qin, Tiffaney Pi

General evaluation of teacher	0.393207	0.15577	1.4817	0.8634 to 2.5428
General evaluation of course	1.235425	0.00221	3.4398	1.5818 to 7.4805
Teacher is organized and prepared	NA	NA	NA	NA
Teacher gives interesting activities	0.135137	0.33873	1.1447	0.8687 to 1.5084
Teacher explains things clearly	NA	NA	NA	NA
Teacher answers questions well	-0.410547	0.03509	0.6633	0.4544 to 0.9682
Teacher gives students chances to participate in class	0.121032	0.60279	1.1287	0.7162 to 1.7787
Satisfaction with textbooks used	0.136160	0.57925	1.1459	0.7089 to 1.8522
Satisfaction with handouts and other materials used in the course	-1.098991	0.02571	0.3332	0.1282 to 0.8663
Listening skills improved	0.202314	0.02049	1.2242	1.0337 to 1.4499
Speaking skills improved	-0.006097	0.91669	0.9939	0.8868 to 1.1140
Grammar skills improved	0.195719	0.00529	1.2162	1.0621 to 1.3926
Knowledge of vocabulary and idioms improved	0.190893	0.00151	1.2103	1.0782 to 1.3587
Knowledge of American culture improved	0.194406	0.01674	1.2146	1.0377 to 1.4216
Pronunciation skills improved	-0.002860	0.97166	0.9971	0.8518 to 1.1673
Satisfaction with academic counseling	-0.137430	0.27007	0.8716	0.6834 to 1.1116
Satisfaction with visa	-0.146358	0.29864	0.8638	0.6562 to 1.1373

American Language Center Market Research

Albert Na, Annie Choi, Breanna Qin, Tiffaney Pi

counseling				
Satisfaction with Lindbrook office staff	0.645188	0.00443	1.9063	1.2312 to 2.9518
Satisfaction with help from main ALC ALC office, applications, enrollment, housing	-0.137045	0.05115	0.8719	0.7606 to 0.9995
Recommend ALC to friends	-0.137733	0.07424	0.8713	0.7499 to 1.0125

M 1-3pm Intermediates:

Variable	Coefficient	p-value	Log Odds	95% Confidence Interval
General evaluation of teacher	-0.39789	0.06254	0.6717	0.4424 to 1.0199
General evaluation of course	0.08161	0.61921	1.0850	0.7866 to 1.4966
Teacher is organized and prepared	-0.17682	0.02016	0.8379	0.7222 to 0.9721
Teacher gives interesting activities	0.12099	0.34259	1.1286	0.8793 to 1.4485
Teacher explains things clearly	-0.04269	0.57256	0.9582	0.8262 to 1.1112
Teacher answers questions well	0.03721	0.70216	1.0379	0.8578 to 1.2558
Teacher gives students chances to participate in class	0.48109	0.04660	1.6178	1.0087 to 2.5947
Satisfaction with textbooks used	-0.05792	0.18600	0.9437	0.8662 to 1.0282
Satisfaction with handouts and other materials used in the course	0.29227	0.00261	1.3395	1.1086 to 1.6184
Listening skills improved	-0.05086	0.38676	0.9504	0.8471 to 1.0663
Speaking skills improved	0.16541	0.00214	1.1799	1.0624 to 1.3104

American Language Center Market Research

Albert Na, Annie Choi, Breanna Qin, Tiffaney Pi

Grammar skills improved	0.14971	0.00738	1.1615	1.0416 to 1.2952
Knowledge of vocabulary and idioms improved	-0.07894	0.07360	0.9241	0.8477 to 1.0073
Knowledge of American culture improved	0.08964	0.02327	1.0938	1.0126 to 1.1815
Pronunciation skills improved	-0.01885	0.70833	0.9813	0.8891 to 1.0831
Satisfaction with academic counseling	0.25041	1.24e-05	1.2846	1.1497 to 1.4352
Satisfaction with visa counseling	0.10862	0.03603	1.1147	1.0074 to 1.2334
Satisfaction with Lindbrook office staff	-0.31821	1.69e-06	0.7275	0.6398 to 0.8271
Satisfaction with help from main ALC ALC office, applications, enrollment, housing	0.09988	0.01242	1.1050	1.0222 to 1.1946
Recommend ALC to friends	0.11522	0.01303	1.1221	1.0250 to 1.2285

M 1-3pm Advanced:

Variable	Coefficient	p-value	Log Odds	95% Confidence Interval
General evaluation of teacher	NA	NA	NA	NA
General evaluation of course	-0.245504	0.206495	0.7823	0.5351 to 1.1438
Teacher is organized and prepared	-0.009255	0.93342	0.9908	0.7976 to 1.2308
Teacher gives interesting activities	NA	NA	NA	NA
Teacher explains things clearly	NA	NA	NA	NA
Teacher answers questions well	NA	NA	NA	NA

American Language Center Market Research

Albert Na, Annie Choi, Breanna Qin, Tiffaney Pi

Teacher gives students chances to participate in class	NA	NA	NA	NA
Satisfaction with textbooks used	-0.251864	0.007251	0.7774	0.6478 to 0.9327
Satisfaction with handouts and other materials used in the course	0.381834	0.000301	1.4650	1.1947 to 1.7964
Listening skills improved	0.156682	0.013962	1.1696	1.0332 to 1.3240
Speaking skills improved	0.059671	0.105761	1.0615	0.9877 to 1.1408
Grammar skills improved	-0.016357	0.741167	0.9838	0.8929 to 1.0839
Knowledge of vocabulary and idioms improved	-0.065595	0.275391	0.9365	0.8326 to 1.0534
Knowledge of American culture improved	0.140942	0.000762	1.1514	1.0618 to 1.2485
Pronunciation skills improved	-0.019485	0.594341	0.9807	0.9129 to 1.0535
Satisfaction with academic counseling	0.414395	1.12e-08	1.5135	1.3195 to 1.7359
Satisfaction with visa counseling	0.039928	0.412452	1.0407	0.9461 to 1.1448
Satisfaction with Lindbrook office staff	-0.311074	0.004337	0.7327	0.5929 to 0.9054
Satisfaction with help from main ALC ALC office, applications, enrollment, housing	-0.096719	0.084098	0.9078	0.8138 to 1.0126
Recommend ALC to friends	-0.044849	0.605369	0.9561	0.8067 to 1.1332

7. T/R Elective Beginners:

American Language Center Market Research

Albert Na, Annie Choi, Breanna Qin, Tiffaney Pi

Note: The first nine variables (General Evaluation of the teacher... .. Satisfied with handouts/materials) were not used in the T/R Beginners model because > 90% of the survey responses for those questions were left blank and subsequently treated as NA values.

Variable	Coefficient	p-value	Log Odds	95% Confidence Interval
Listening improved	0.2170	0.0016	1.242	1.0884 to 1.418
Speaking improved	-0.0161	0.7872	0.984	0.876 to 1.106
Grammar improved	0.279	6.32e-05	1.322	1.157 to 1.510
Vocab/Idioms improved	0.1293	0.04262	1.138	1.005 to 1.288
Knowledge of American culture improved	0.03198	0.6296	1.032	0.907 to 1.176
Pronunciation improved	-0.0998	0.1644	0.905	0.787 to 1.041
Satisfied with academic counseling	0.0824	0.3369	1.0859	0.918 to 1.284
Satisfied with visa counseling office	0.1012	0.1018	1.107	0.981 to 1.248
Satisfied with Lindbrook office	0.3511	0.0027	1.421	1.133 to 1.781
Satisfied with ALC main office	0.022	0.7299	1.022	0.902 to 1.158

8. T/R Elective Intermediates:

Variable	Coefficient	p-value	Log Odds	95% Confidence Interval
General Evaluation of the teacher	-0.100	0.5604	0.904	0.645 to 1.268
General Evaluation of the course	0.2667	0.0085	1.306	1.072 to 1.589
Teacher is organized and prepared	0.1663	0.6113	1.181	0.622 to 2.241

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Albert Na, Annie Choi, Breanna Qin, Tiffaney Pi

Teacher gives interesting activities	0.04659	0.5229	1.0477	0.908 to 1.208
Teacher explains things clearly	-0.1258	0.4609	0.8818	0.632 to 1.231
Teacher answers questions well	-0.0487	0.8112	0.9525	0.639 to 1.42
Teacher gives students chances to participate in class	0.0129	0.7537	1.0129	0.935 to 1.098
Satisfied with textbooks	0.0422	0.3942	1.050	0.916 to 1.204
Satisfied with handouts/materials	-0.1778	0.02565	0.837	0.717 to 0.978
Listening improved	0.0347	0.5652	1.035	0.9199 to 1.165
Speaking improved	0.0422	0.3942	1.043	0.947 to 1.149
Grammar improved	-0.0137	0.8141	0.986	0.88 to 1.106
Vocab/Idioms improved	-0.153	0.0071	0.8579	0.768 to 0.958
Knowledge of American culture improved	0.210	0.00029	1.233	1.103 to 1.380
Pronunciation improved	-0.0264	0.6642	0.9739	0.8646 to 1.097
Satisfied with academic counseling	0.0641	0.111	1.0661	0.9856 to 1.153
Satisfied with visa counseling office	0.0578	0.0438	1.0595	1.002 to 1.120
Satisfied with Lindbrook office	0.0149	0.7553	1.015	0.924 to 1.115
Satisfied with ALC main office	-0.0945	0.0112	0.9098	0.846 to 0.978

9. T/R Elective Advanced:

Variable	Coefficient	p-value	Log Odds	95% Confidence Interval
General Evaluation of the teacher	-0.2328	0.2381	0.7923	0.539 to 1.166
General Evaluation of the course	-0.0714	0.5904	0.931	0.718 to 1.207

American Language Center Market Research

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Teacher is organized and prepared	0.2349	0.2681	1.265	0.835 to 1.915
Teacher gives interesting activities	-0.181	0.0261	0.8344	0.712 to 0.978
Teacher answers questions well	0.1793	0.4406	1.196	0.759 to 1.886
Teacher gives students chances to participate in class	0.0802	0.025	1.083	1.010 to 1.162
Satisfied with textbooks	-0.1453	0.0725	0.8648	0.738 to 1.013
Satisfied with handouts/materials	0.160	0.2893	1.1735	0.873 to 1.577
Listening improved	0.321	2.32e-12	1.378	1.264 to 1.503
Speaking improved	0.1429	5.45e-06	1.154	1.086 to 1.226
Grammar improved	0.099	0.1025	1.072	0.986 to 1.166
Vocab/Idioms improved	-0.0714	0.0751	0.931	0.861 to 1.007
Knowledge of American culture improved	0.1965	1.48e-07	1.2171	1.133 to 1.308
Pronunciation improved	0.0250	0.4114	1.0253	0.966 to 1.088
Satisfied with academic counseling	0.0368	0.2747	1.0367	0.972 to 1.106
Satisfied with visa counseling office	0.0597	0.031	1.0615	1.006 to 1.120
Satisfied with Lindbrook office	-0.1544	0.0001	0.8569	0.793 to 0.926
Satisfied with ALC main office	0.0104	0.7103	1.0105	0.956 to 1.068

American Language Center Market Research

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Interpretation of results:

9-12pm classes

Beginners - The teacher answers questions well, listening skills improved, knowledge of vocabulary and idioms improved, and satisfaction with Lindbrook office staff were all significant predictors (p -values < 0.05) in determining satisfaction with the overall ALC program. It appears that the improvement of English skills in general played a large role in determining student satisfaction with the program, as students who felt their listening skills improved were 25% more likely to be satisfied with the program, while students who felt their knowledge of idioms and vocabulary improved were 18% more likely to be satisfied with the program. In addition, satisfaction with the Lindbrook office staff seems to be the greatest contributor to satisfaction with the ALC program, as students who were satisfied with the Lindbrook office staff were 2.34 times more likely to be satisfied with ALC.

Intermediates - General evaluation of teacher, general evaluation of course, teacher gives more interesting activities, teacher gives students more chances to participate in class, listening skills improved, speaking skills improved, grammar skills improved, knowledge of vocabulary and idioms improved, knowledge of American culture improved, satisfaction with academic counseling, satisfaction with Visa counseling, satisfaction with Lindbrook office staff, and satisfaction with help from main ALC were all significant predictors (P -value < 0.05) in determining satisfaction with the ALC program. Again, it appears that the improvement of English skills was an important factor for students, however, their evaluation of their teachers skills also was an important metric for student satisfaction. In particular, if students rated their teachers highly, they were 22.3% more likely to be satisfied with the ALC program, and if they rated the course highly, they were 28% more likely to be satisfied with ALC. It is recommended for ALC to continue to ensure that the quality of their teachers are met for these intermediate students, as well as to maintain friendly office staff and helpful academic counselors.

Advanced - Satisfaction with textbooks, satisfaction with handouts and course material, listening skills improved, knowledge of American culture improved, satisfied with academic counseling, and satisfied with Lindbrook Office staff were all significant predictors in

American Language Center Market Research

Albert Na, Annie Choi, Breanna Qin, Tiffaney Pi

determining satisfaction with the ALC program. For the advanced students, it appears that the material that they are using to learn English is important, and particularly, students who were satisfied with the handouts and course material were about 47% more likely to be satisfied with the ALC program. Thus, it is recommended for ALC to ensure that textbooks and other course material are relevant to what these advanced students are learning. Another significant factor was satisfaction with academic counseling, as students who were satisfied with their academic counseling were also 51% more likely to be satisfied with ALC.

M 1-3pm classes

Beginners - General evaluation of the course, improvement of listening skills, improvement of grammar skills, knowledge of vocabulary and idioms, knowledge of American culture, and satisfaction with the Lindbrook office staff are all aspects of the ALC program that students are satisfied with. The data shows that these are important factors in a students' satisfaction with the general program ($p\text{-value} < .05$). The teachers ability to answer questions well and student satisfaction with handouts and other material were both significant predictors in our model ($p\text{-values} < .05$); however, they had a log odds < 1.00 . The odds of the students being satisfied with the ALC program overall was 34% less likely if they thought their teacher answered questions well. Similarly, the odds of students being satisfied with the ALC program overall was 66% less likely if they were satisfied with the handouts and other materials.

Intermediates - Student chances to participate, satisfaction with handouts and other materials, improved speaking skills, improved grammar skills, knowledge of american culture, satisfaction with academic counseling, satisfaction with the visa counseling office, satisfaction with the main ALC office, and recommendations to friends about ALC program were all significant aspects in determining if students were satisfied with the general ALC program ($p\text{-value} < .05$). Satisfaction with the Lindbrook office staff and teacher organization and preparation were also significant predictors in our model ($p\text{-value} < .05$); however, they had a log offs < 1.00 . In context, this indicates that the odds of students being satisfied with the ALC program overall was 16% less likely if they thought their teacher was organized and prepared. Similarly, the odds of students being satisfied with the ALC program was 27% less likely if they were satisfied with the Lindbrook office staff.

American Language Center Market Research

Albert Na, Annie Choi, Breanna Qin, Tiffaney Pi

Advanced - Satisfaction with the handouts and other materials, improvement of listening skills, knowledge of American culture, and satisfaction with academic counseling are all significant predictors for a students' satisfaction with the general program ($p\text{-value} < .05$). Satisfaction with textbooks and the Lindbrook office staff were also significant predictors in our model ($p\text{-value} < .05$); however, they both had a log odds < 1.00 . The odds of students being satisfied with the ALC program overall was 27% less likely if they were satisfied with the textbooks and 27% less likely if they were satisfied with the Lindbrook office staff.

T/R Electives:

Beginners - Improving grammar, listening, and vocabulary/idioms as well as help from the Lindbrook office staff were all significant predictors ($p\text{-values} < 0.05$) in students being satisfied overall with the ALC program. The ALC should keep up their good work in those categories because being satisfied with those means the odds of the student also being satisfied with the program overall are relatively high compared to the other variables. According to our statistical model, in particular, the odds of the students being satisfied with the ALC program overall was 42% more likely if they were satisfied with the Lindbrook office staff.

Intermediates - General evaluation of the course, knowledge of American culture, and the visa counseling office were all significant predictors ($p\text{-values} > 0.05$) in students being satisfied overall with the ALC program. The ALC should keep up their work in those areas because if students were satisfied in those areas, it means they are more likely to be satisfied with the program as a whole. Being satisfied with the handouts/materials, having vocabulary improvement, and being satisfied with the ALC main office were also significant predictors of overall satisfaction, but with log odds < 1.00 , it means they were less likely to be satisfied with the program overall. For instance, the odds of the students being satisfied with the ALC program overall was 16% less likely if they were satisfied with the handouts/materials.

Advanced - Participation, listening, speaking, knowledge of American culture improving, and the visa counseling office were all significant predictors ($p\text{-values} > 0.05$) in students being satisfied overall with the ALC program. The ALC should keep up their work in those areas because if students were satisfied in those areas, it means they are more likely to be satisfied with the program as a whole. Having interesting activities and being satisfied with the

American Language Center Market Research

Albert Na, Annie Choi, Breanna Qin, Tiffaney Pi

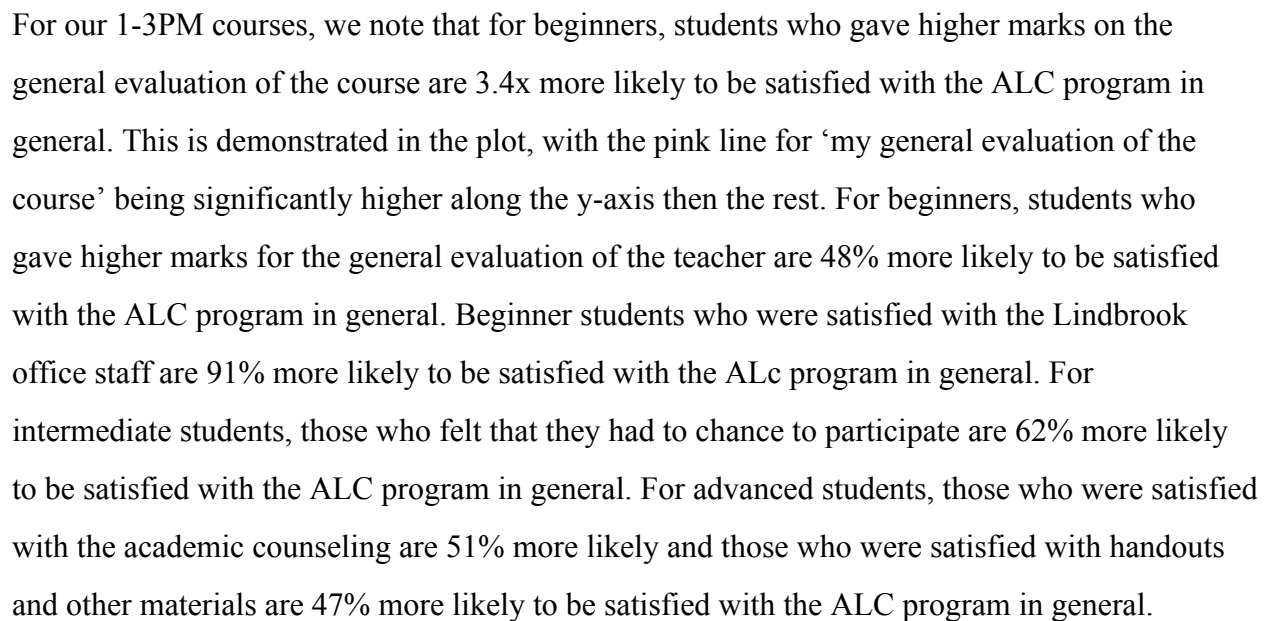
Lindbrook office were also significant predictors of overall satisfaction, but with log odds < 1.00, it means they were less likely to be satisfied with the program overall. For instance, the odds of the students being satisfied with the ALC program overall was 17% less likely if they thought their teacher gave interesting activities.

Interpretation of plots

The following plots succinctly summarize our results above for the 9-12PM courses, 1-3PM courses, and Tuesday/Thursday electives. For the log odds plots, we see that if the confidence interval crosses the horizontal line, then the null value lies within the 95% confidence interval. This implies that the predictor did not observe a statistically significant difference between the satisfied and unsatisfied students. Additionally, the longer the line, the wider our confidence interval and the less reliable our results are.

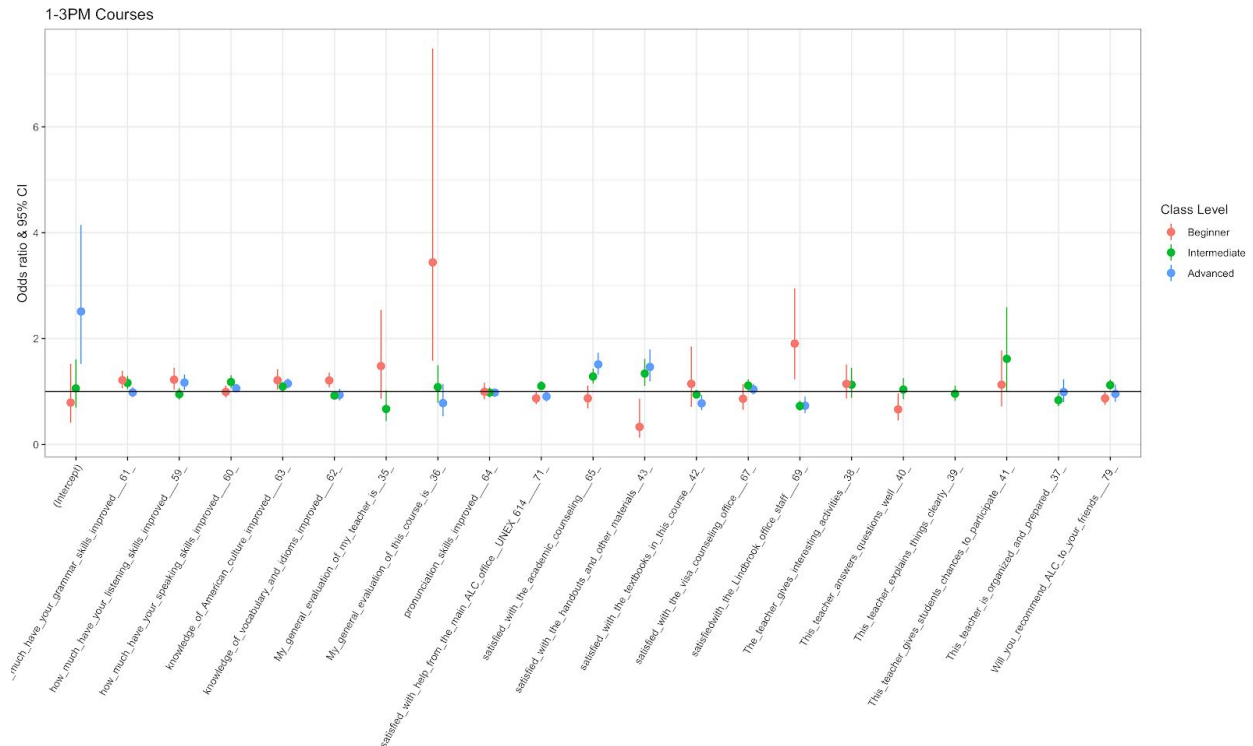
For the 9-12PM courses, as mentioned before, we see that students who were satisfied with the Lindbrook office staff are 2.34x more likely to be satisfied with the ALC program in general. We see this very clearly with on the plot, with the pink beginner box odds for ‘how satisfied with the Lindbrook office staff’ marked significantly higher than the others. Students in the intermediate courses who were satisfied with the academic counseling and gave higher marks on the course evaluation and teacher evaluation are 28%, 28%, and 23% more likely to be satisfied with the ALC program in general. Additionally, students in the advanced courses who felt their teacher was organized and prepared and their teacher explained things clearly were 26% and 21% more likely to be satisfied with the program in general.

Albert Na, Annie Choi, Breanna Qin, Tiffaney Pi



American Language Center Market Research

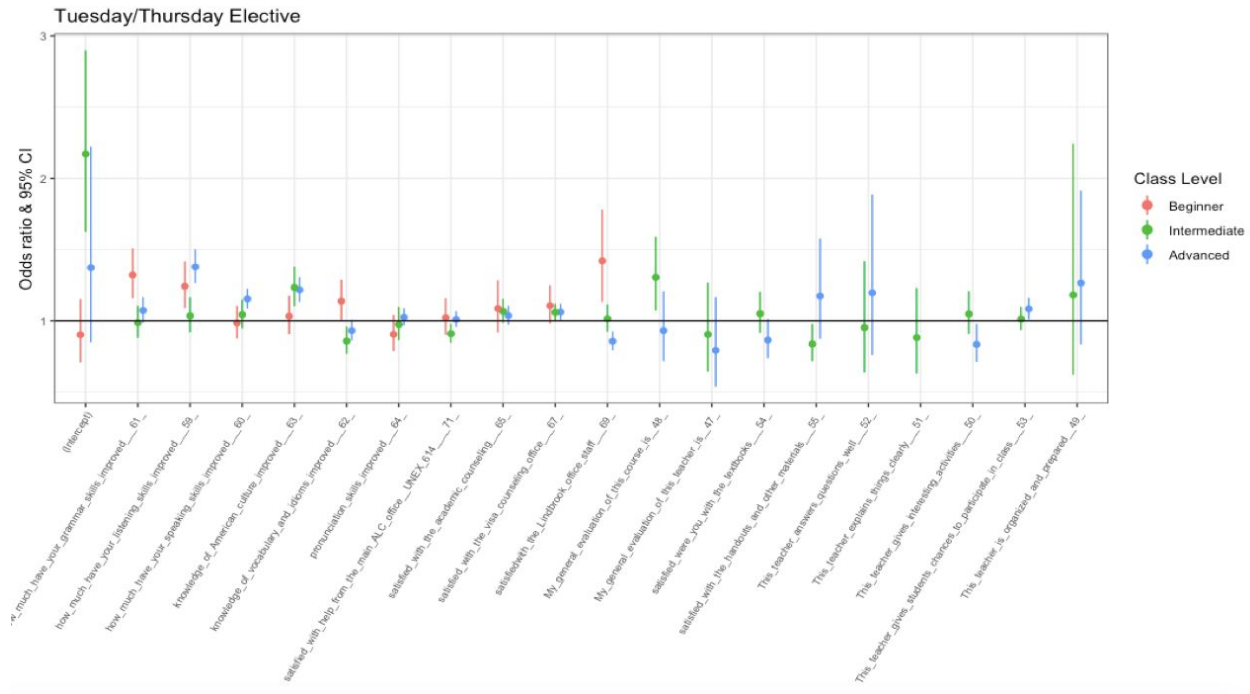
Albert Na, Annie Choi, Breanna Qin, Tiffany Pi



For the Tuesday Thursday elective courses, students in the beginner courses who felt their grammar skills improve and listening skills improve are 30% and 24%, more likely to be satisfied with the ALC program in general. Additionally, those in beginner courses who were satisfied with the Lindbrook office staff are 42% more likely to be satisfied with the program in general. We note that for beginners, from my general evaluation of the course on, we do not have log odds plotted because the value was null due to too many missing values in the data. For intermediate courses, students who gave higher marks on the general evaluation of the course are 31% more likely to be satisfied with the general program. For students in advanced courses, those who felt their listening skills improved, felt their teacher answers questions well, felt their teacher was organized and prepared were 38%, 19%, and 27% more likely to have been satisfied with the ALC program in general.

American Language Center Market Research

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Conclusion:

After completing our analysis, we came to the conclusion that global marketing should target three main points: a focus region, demographic, and platform. From our exploratory data analysis, the ALC should definitely narrow in on the Middle East and Asia, especially Saudi Arabia and Japan. They should cater their campaigns toward Females aged 20-29, and allocate a majority of their marketing resources to develop a strong web presence. The ALC could also possibly consider offering a sibling or referral discount since word of mouth is a huge factor in enrollment. As for specific improvements within the ALC program, for the 9-12pm classes overall, the service from the Lindbrook and academic counseling offices, curriculum, and listening & grammar skills could definitely be improved. For the Monday 1-3pm classes, improve on creating effective handouts/materials and the service at the Lindbrook office. For the Tuesday/Thursday electives, focus on improving vocabulary/idiom learning and presenting more interesting activities and materials.

Challenges and Limitation of the Study:

American Language Center Market Research

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A major obstacle we encountered was the overwhelming amount of NULL values due to students that failed to complete the survey. Due to this, we had a lack of information when conducting our models, especially for the Tuesday/Thursday beginner data, as the majority of the data was missing. This makes it more challenging for us to draw meaningful conclusions, since we were only able to work with a limited amount of data. Similarly, our data was limited to the past 2 years of enrollment, meaning that we were constrained to a relatively brief time period. Due to this, we did not have an extensive amount of historical data when conducting analyses and analyzing patterns. Since we grouped our data by course and enrollment level and ran multiple models, it became more challenging for us to draw a single, general conclusion, as results slightly varied between these groups.

Future Recommendations:

Moving forward, we can look at text mining in the comments section of the survey in order to better target specific aspects of the program that need to be improved. Since comments are where students can voice their concerns about specific teachers and courses, we can use this information to isolate the weakest aspects of the program and tailor our recommendations to these areas. To do so, it would also be beneficial to encourage participation in the survey, as there currently seems to be a lack of completion, making modeling and analysis more challenging to conduct.