Investigation Into the Effect of
Specific Demographic Variables on Sentiment

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Introduction

In this report, we look at three collections of forum posts from the Online Deliberation project and investigate the effect of the posters' education level, ethnicity, age, employment, and gender on post sentiment. Each collection revolves around a different topic; the topics are: "Foreign Workforce in Singapore", "Singapore's Fertility Issue", and "Immigration: New Citizens in Singapore".

Coding

Sentiment

We measure sentiment using the sentiment and emotion values calculated by IBM Alchemy. Sentiment values range from -1.0 to 1.0, with -1.0 being a negative sentiment and 1.0 being a positive sentiment. Each observation contains five emotion variables (anger disgust, fear, joy, sadness), and their intensities range from 0.0 to 1.0, with 0.0 indicating absence and 1.0 indicating a strong presence of the emotion. From preliminary visual analysis, we have identified anger and fear as emotions that potentially contain patterns of interest.

Education

We use dummy variables to code the different categories of Education. Our baseline group (where all dummy variables = 0) is *Lower Secondary*. $edu\_secondary$ is coded 1 when a poster's highest level of education is secondary school, and 0 otherwise. $edu\_postSecVocational$ is coded 1 when a poster's highest level of education is a post-secondary (non-tertiary) general and vocational qualification, and 0 otherwise. $edu\_diploma$ is coded 1 when a poster's highest level of education is a polytechnic diploma, and 0 otherwise. $edu\_univFirst$ is coded 1 when a poster's highest level of education is an undergraduate degree, and 0 otherwise. $edu\_univPostGrad$ is coded 1 when a poster's highest level of education is a post-graduate degree, and 0 otherwise. $edu\_professionalOthers$ is coded 1 when a poster's highest level of education is a professional qualification or other diploma, and 0 otherwise.

Ethnicity

We use dummy variables to code the different ethnicities. Our baseline group (where all dummy variables = 0) is *Others*. $eth\_chinese$ is coded 1 when a poster's ethnicity is Chinese, and 0 otherwise. eth_malay is coded 1 when a poster's ethnicity is Malay, and 0 otherwise. eth_indian is coded 1 when a poster's ethnicity is Indian, and 0 otherwise.

Gender

We use a dummy variable *male* to represent gender; 1 if the poster is male, and 0 otherwise.

Employment

We use a dummy variable *employed* to represent a poster's employment status; 1 if the poster is a full-time worker, self-employed/business owner, or a part-time worker, and 0 otherwise.

Results

In this report, we take p-value < 0.05 to be the threshold for statistical significance. Variables with p-values < 0.05 are denoted by *, and variables with p-values < 0.01 are denoted by **.

Foreign Workforce in Singapore

Sentiment Value (Table 1)

Variable	Coef.	Std. Err.	P>|t|
age	-0.0018219	0.0011279	0.106
male	-0.0134703	0.0234621	0.566
edu_secondary	0.1883569	0.1196766	0.116
edu_diploma	0.3426743	0.1165245	0.003**
edu_postSecVocational	0.2950276	0.1136547	0.009**
edu_univFirst	0.180688	0.1140234	0.113
edu_univPostGrad	0.203579	0.1170664	0.082
edu_professionalOthers	0.3083562	0.1246567	0.013*
eth_chinese	0.2315014	0.4594445	0.614
eth_indian	0.184574	0.4614964	0.689
eth_malay	0.4621572	0.4617373	0.317
employed	0.0515821	0.0404021	0.202
wordcount	-0.0009374	0.0003178	0.003**
_cons	-0.3670397	0.4758135	0.441

From Table 1, we observe that posters with a highest education level of a post-secondary (non-tertiary) general and vocational qualification (*edu_postSecVocational*), polytechnic diploma (*edu_diploma*), or a professional qualification or other diploma (*edu_professionalOthers*) tend to have a more positive sentiment compared to posters with a maximum education level of "Lower Secondary". Polytechnic diploma holders tend to have the most positive sentiment, followed by professional qualification holders, then general and vocational qualification holders.
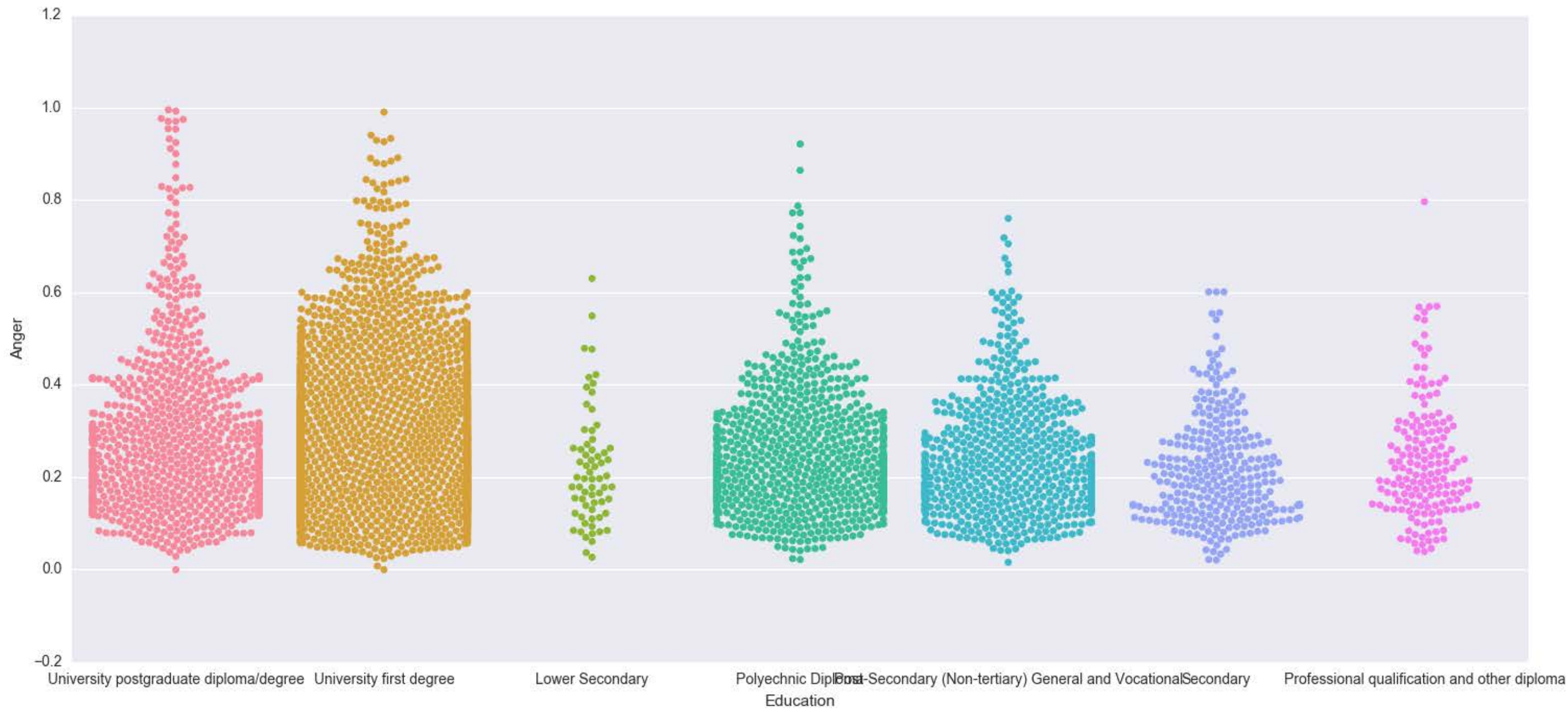
Anger (Table 2)

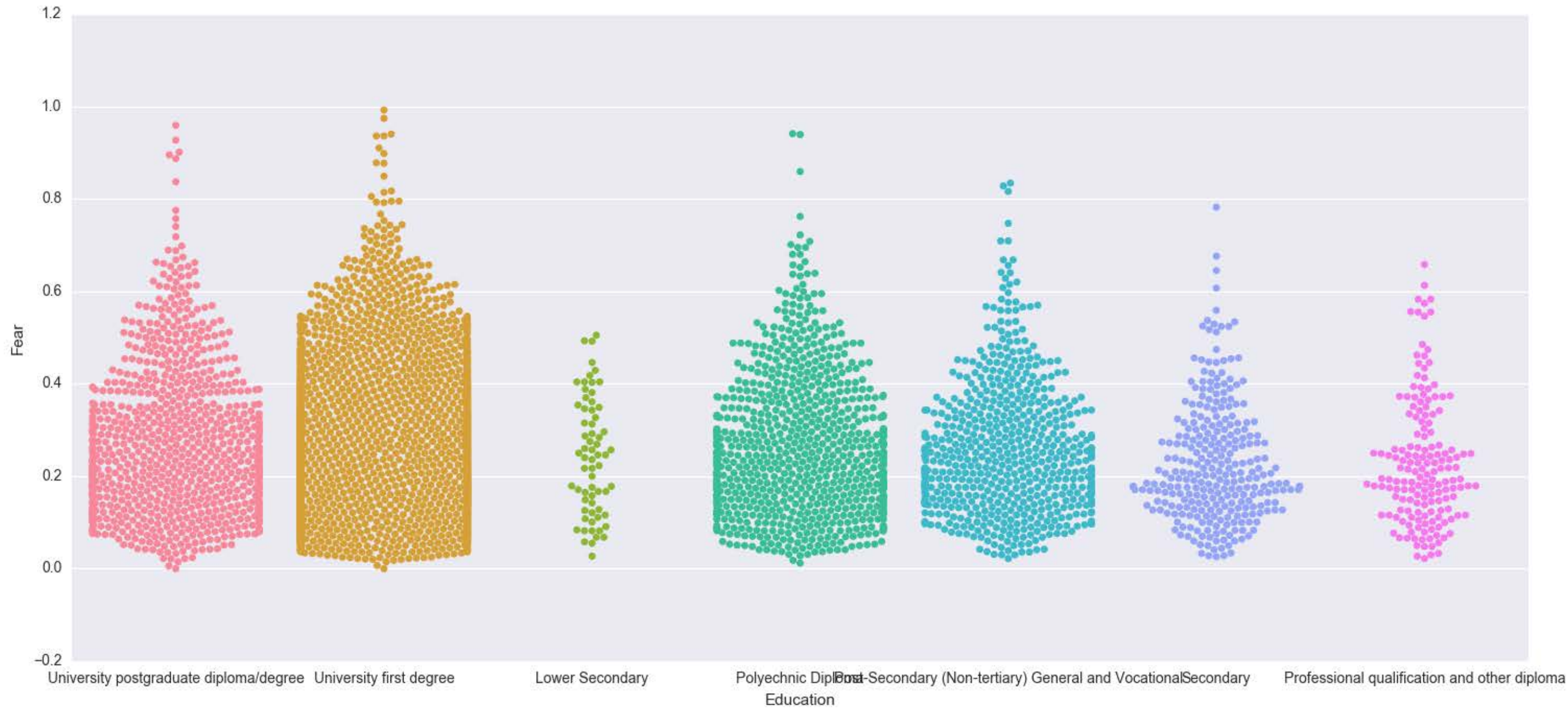| Variable	Coef.	Std. Err.	P>|t|
age	0.0004622	0.0002821	0.101
male	-0.0121369	0.0058689	0.039*
edu_secondary	0.0080153	0.0299362	0.789
edu_diploma	0.0217974	0.0291477	0.455
edu_postSecVocational	0.0250483	0.0284298	0.378
edu_univFirst	0.0366678	0.0285221	0.199
edu_univPostGrad	0.0453993	0.0292832	0.121
edu_professionalOthers	0.0270171	0.0311819	0.386
eth_chinese	0.0257468	0.1149264	0.823
eth_indian	0.0426663	0.1154396	0.712
eth_malay	-0.004039	0.1154999	0.972
employed	-0.0123536	0.0101063	0.222
wordcount	0.0019839	0.0000795	0.000**
_cons	0.1464673	0.119021	0.219

From Table 2, we observe that females tend to express more anger than males.
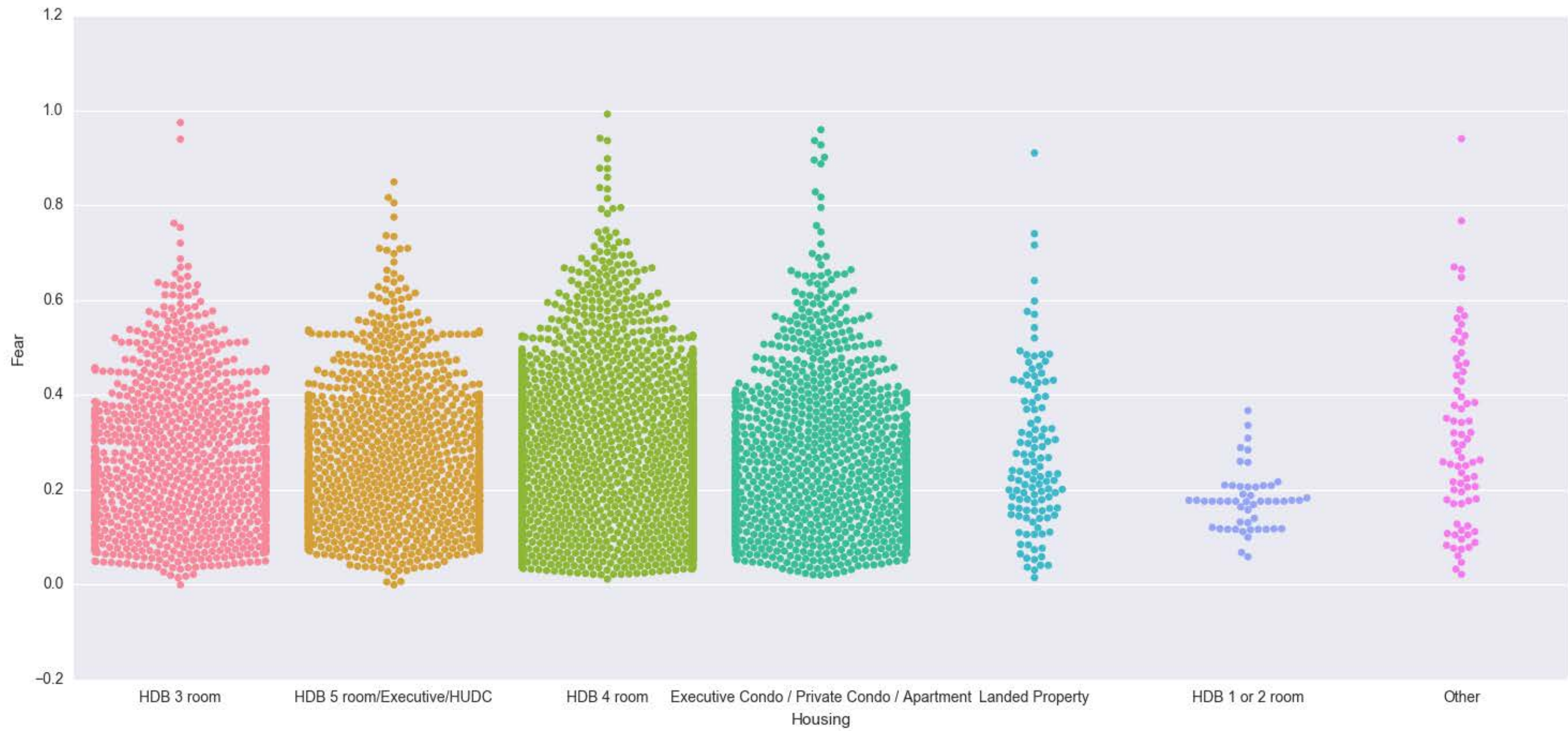
Fear (Table 3)

Variable	Coef.	Std. Err.	P>|t|
age	-0.000636	0.0003439	0.065
male	0.023482	0.0071535	0.001**
edu_secondary	-0.0260604	0.0364887	0.475
edu_diploma	-0.0097454	0.0355276	0.784
edu_postSecVocational	-0.0091279	0.0346526	0.792
edu_univFirst	-0.0153041	0.0347651	0.66
edu_univPostGrad	-0.0175198	0.0356929	0.624
edu_professionalOthers	-0.0171892	0.0380071	0.651
eth_chinese	0.041455	0.1400819	0.767
eth_indian	0.0363042	0.1407075	0.796
eth_malay	0.0699439	0.1407809	0.619
employed	0.0320786	0.0123184	0.009**
wordcount	0.0003485	0.0000969	0.000**
_cons	0.2052073	0.1450727	0.157

From Table 3, we observe that males or the employed tend to express more fear than females or the unemployed.

Joy (Table 4)

Variable	Coef.	Std. Err.	P>|t|
age	0.0009494	0.0004029	0.019*
male	-0.0266253	0.0083809	0.002**
edu_secondary	0.0453455	0.0427499	0.289
edu_diploma	0.1122829	0.0416239	0.007**
edu_postSecVocational	0.0318228	0.0405987	0.433
edu_univFirst	0.0339891	0.0407305	0.404
edu_univPostGrad	0.0764528	0.0418175	0.068
edu_professionalOthers	0.060718	0.0445288	0.173
eth_chinese	0.0488003	0.1641189	0.766
eth_indian	0.0847029	0.1648518	0.607
eth_malay	0.0637118	0.1649379	0.699
employed	-0.0030405	0.0144321	0.833
wordcount	-0.0017563	0.0001135	0.000**
_cons	0.1169121	0.169966	0.492

From Table 4, we observe that females or posters with a maximum education level of a polytechnic diploma tend to express more joy than males or posters with a maximum education level of "Lower Secondary". The posters' ages also correlate positively with joy.

Sadness (Table 5)

Variable	Coef.	Std. Err.	P>|t|
age	-0.0000672	0.0003374	0.842
male	0.0062937	0.0070176	0.37
edu_secondary	-0.0403723	0.0357958	0.259
edu_diploma	-0.0887225	0.034853	0.011*
edu_postSecVocational	-0.052524	0.0339946	0.122
edu_univFirst	-0.044576	0.0341049	0.191
edu_univPostGrad	-0.0419865	0.0350151	0.231
edu_professionalOthers	-0.0483377	0.0372853	0.195
eth_chinese	-0.0773728	0.1374218	0.573
eth_indian	-0.1092847	0.1380355	0.429
eth_malay	-0.1067092	0.1381076	0.44
employed	-0.0117391	0.0120844	0.331
wordcount	-0.0004892	0.0000951	0.000**
_cons	0.4533463	0.1423178	0.001

From Table 5, we observe that posts made by posters with a maximum education level of a polytechnic diploma tend to contain less sadness than posts made by posters with a maximum education level of "Lower Secondary".

Disgust (Table 6)

Variable	Coef.	Std. Err.	P>|t|
age	-0.0008931	0.0004635	0.054
male	0.017825	0.0096413	0.065
edu_secondary	-0.0176028	0.0491788	0.72
edu_diploma	-0.1022134	0.0478834	0.033*
edu_postSecVocational	-0.0287097	0.0467041	0.539
edu_univFirst	-0.0382706	0.0468557	0.414
edu_univPostGrad	-0.1054243	0.0481061	0.029*
edu_professionalOthers	-0.0490321	0.0512252	0.339
eth_chinese	-0.1525582	0.1887997	0.419
eth_indian	-0.2182481	0.1896428	0.25
eth_malay	-0.1393502	0.1897418	0.463
employed	0.00045	0.0166024	0.978
wordcount	0.0019013	0.0001306	0.000**
_cons	0.5761927	0.1955262	0.003

From Table 6, we observe that posters with a maximum education level of a polytechnic diploma or a postgraduate degree tend to express less disgust than posters with a maximum education level of "Lower Secondary".

Immigration: New Citizens in Singapore

In this dataset, *eth_malay* is our baseline group for *ethnicity* since there are only Chinese, Malays, and Indians present.
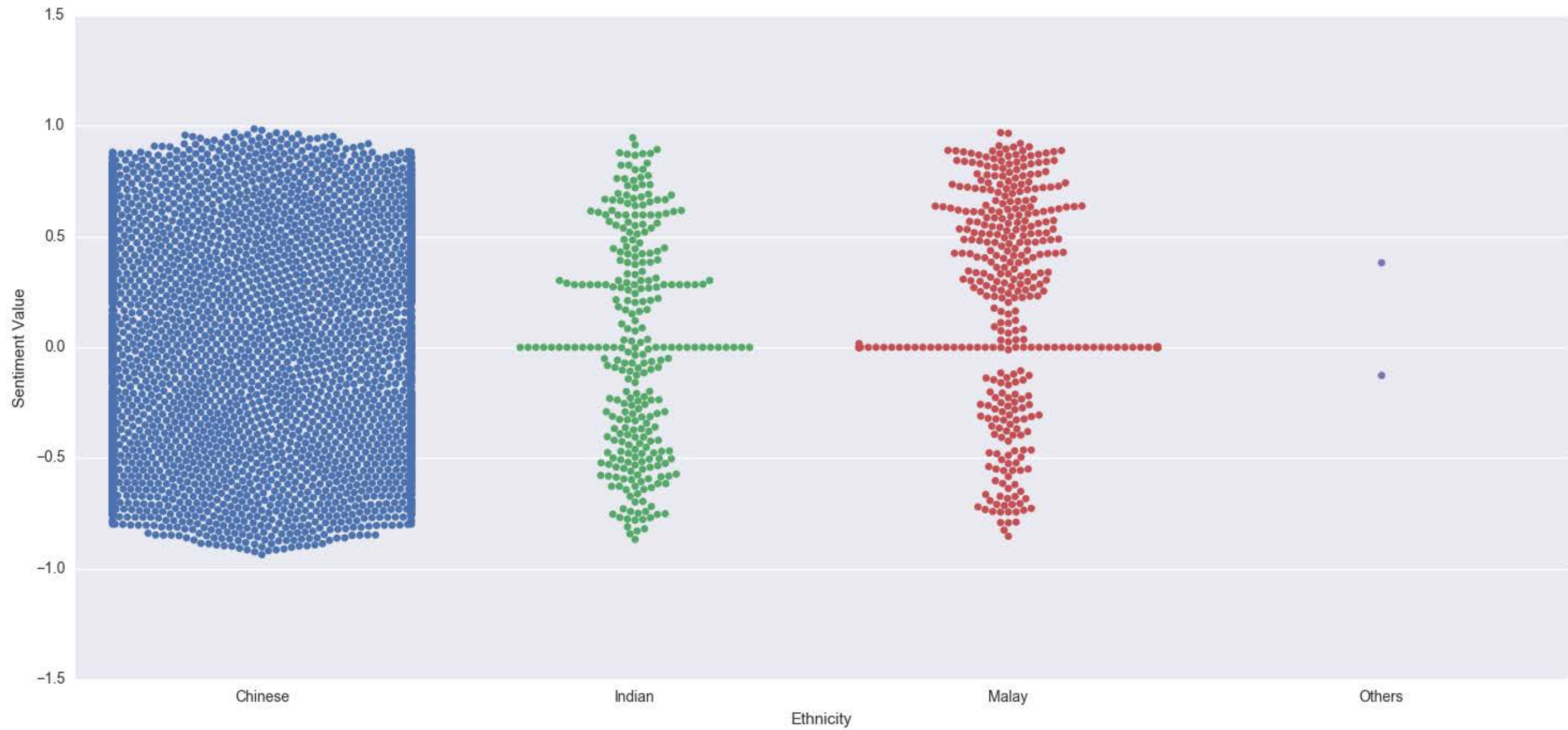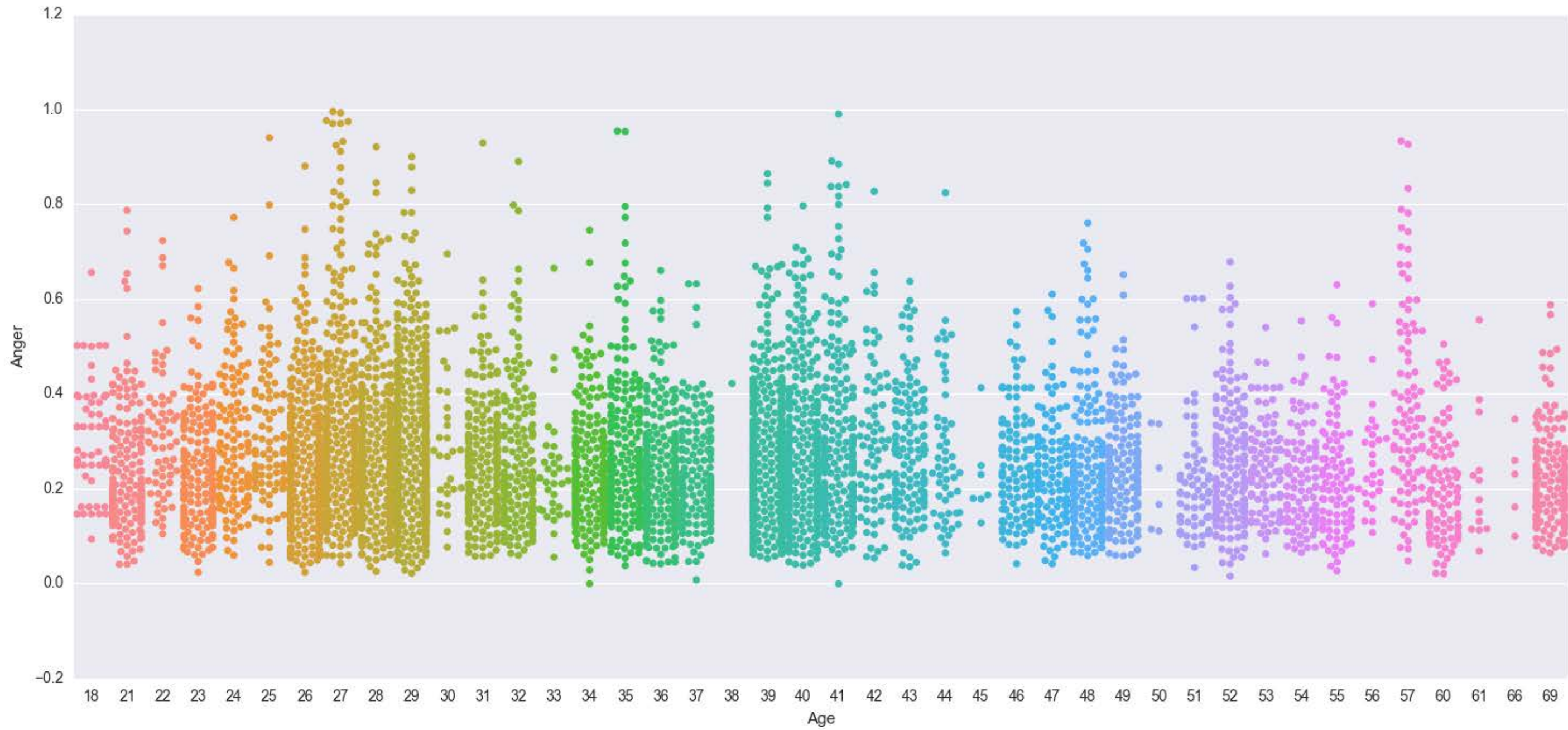
Sentiment Value (Table 7)

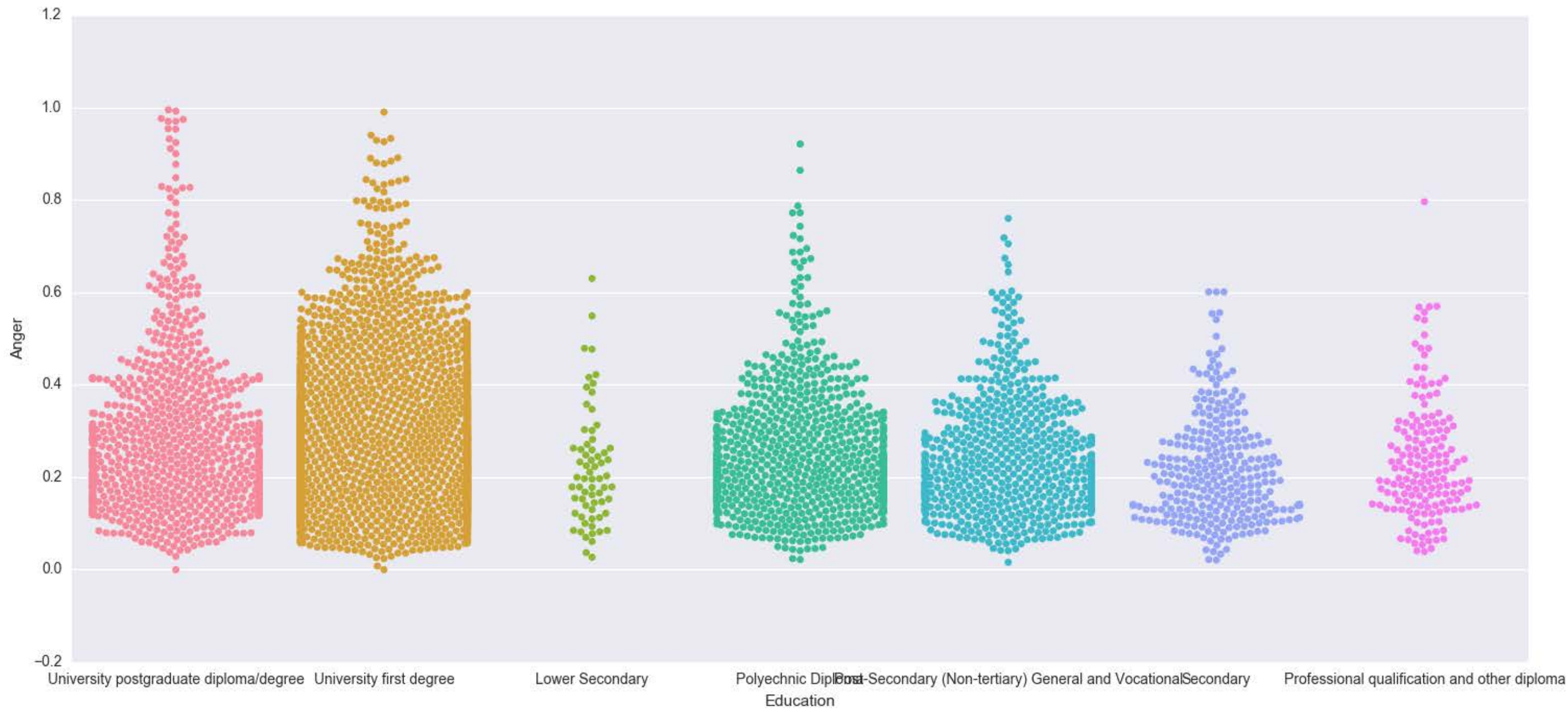| Variable	Coef.	Std. Err.	P>|t|
age	-0.0000313	0.0016229	0.985
male	0.0061649	0.0280459	0.826
edu_secondary	0.2409188	0.1031171	0.02*
edu_diploma	0.2536047	0.0988695	0.01*
edu_postSecVocational	0.3290745	0.093203	0.000*
edu_univFirst	0.1425557	0.0930178	0.126
edu_univPostGrad	0.2327221	0.0953207	0.015*
edu_professionalOthers	0.3874292	0.1091778	0.000**
eth_chinese	-0.2793359	0.0641839	0.000**
eth_indian	-0.3503248	0.0820199	0.000**
employed	0.0216838	0.0483157	0.654
wordcount	-0.0004099	0.0005292	0.439
_cons	0.1077566	0.1325192	0.416

From Table 7, we observe that in comparison to posters with lower secondary education, posters with a maximum education level of a professional qualification or other diploma tend to have the most positive sentiment, followed by posters with a post-secondary (non-tertiary) general and vocational qualification, a polytechnic diploma, secondary school education, and finally posters with a post graduate degree. We also observe that Malay posters tend to be more positive compared to Indian and Chinese posters.

Anger (Table 8)

Variable	Coef.	Std. Err.	P>|t|
age	0.0000403	0.0003928	0.918
male	-0.0236508	0.0067877	0.001**
edu_secondary	-0.0663648	0.0249564	0.008**
edu_diploma	-0.0150209	0.0239284	0.53
edu_postSecVocational	-0.0327824	0.022557	0.146
edu_univFirst	-0.0071015	0.0225122	0.752
edu_univPostGrad	-0.0210701	0.0230695	0.361
edu_professionalOthers	-0.0587877	0.0264232	0.026*
eth_chinese	0.0293163	0.0155338	0.059
eth_indian	0.0383657	0.0198504	0.053
employed	0.0237069	0.0116934	0.043*
wordcount	0.0016832	0.0001281	0.000**
_cons	0.1753486	0.0320723	0.000**

From Table 8, we observe that females tend to express anger more, in comparison to males. We also observe that posters with a professional qualification or other diploma or a secondary school education tend to express anger less, as compared to posters with a lower secondary education. Finally, we see that posters that are employed tend to express anger more, in comparison to posters that are unemployed.
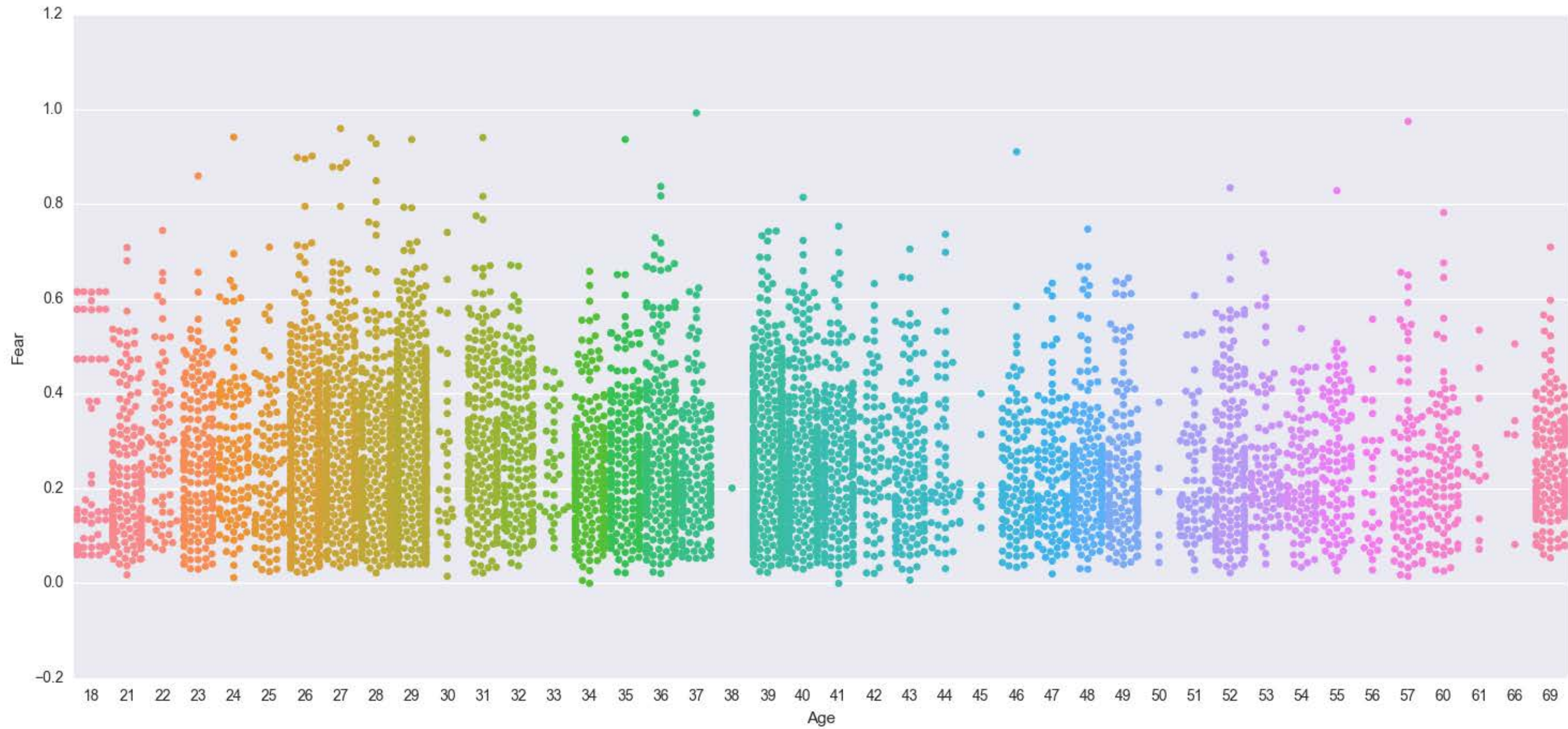
Fear (Table 9)

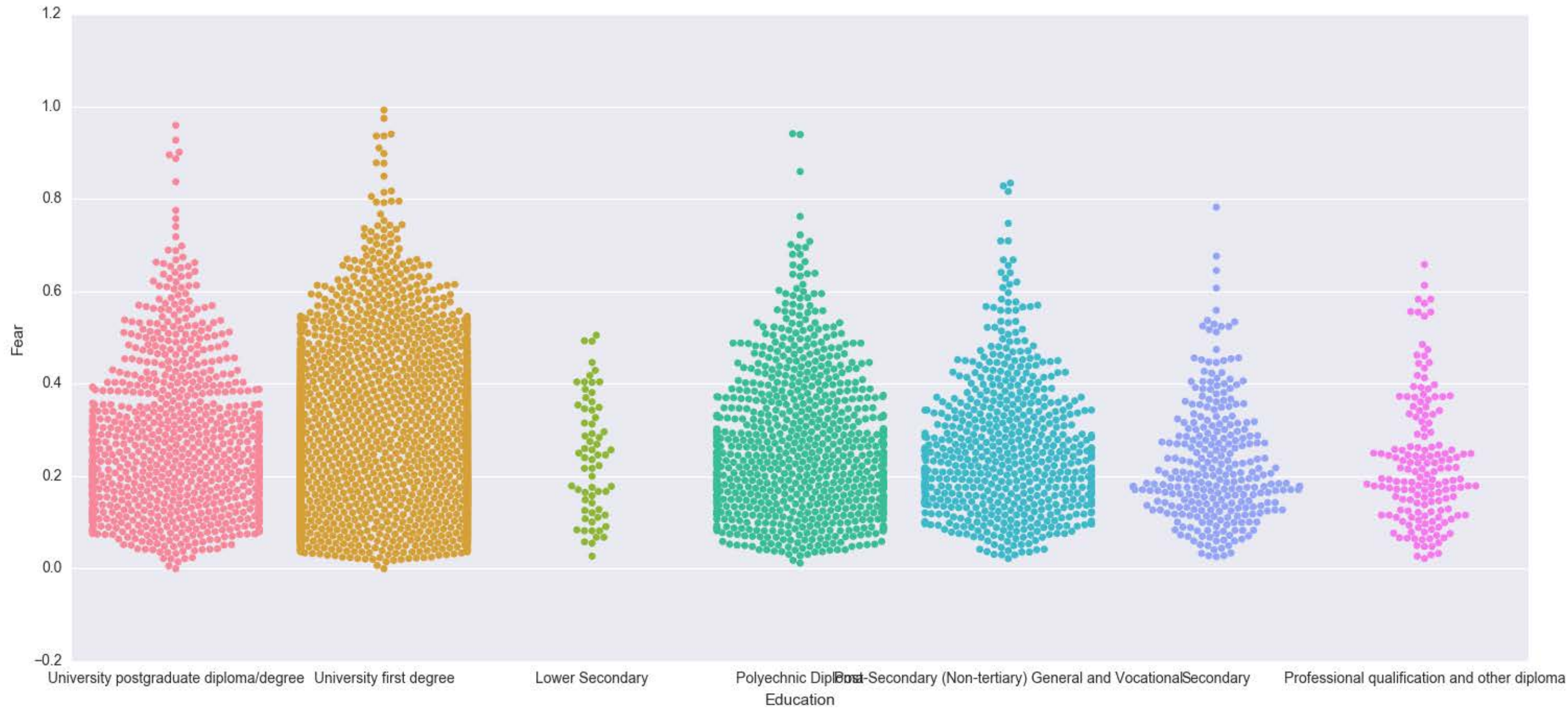| Variable	Coef.	Std. Err.	P>|t|
age	-0.0007672	0.0004933	0.12
male	-0.0024942	0.0085257	0.77
edu_secondary	0.0018305	0.0313467	0.953
edu_diploma	0.0171662	0.0300554	0.568
edu_postSecVocational	0.0051561	0.0283329	0.856
edu_univFirst	0.0152953	0.0282766	0.589
edu_univPostGrad	0.0308117	0.0289766	0.288
edu_professionalOthers	-0.0191493	0.0331891	0.564
eth_chinese	-0.0144898	0.0195113	0.458
eth_indian	-0.0268054	0.0249333	0.282
employed	0.024088	0.0146875	0.101
wordcount	0.0010665	0.0001609	0.000**
_cons	0.2602716	0.0402846	0.000**

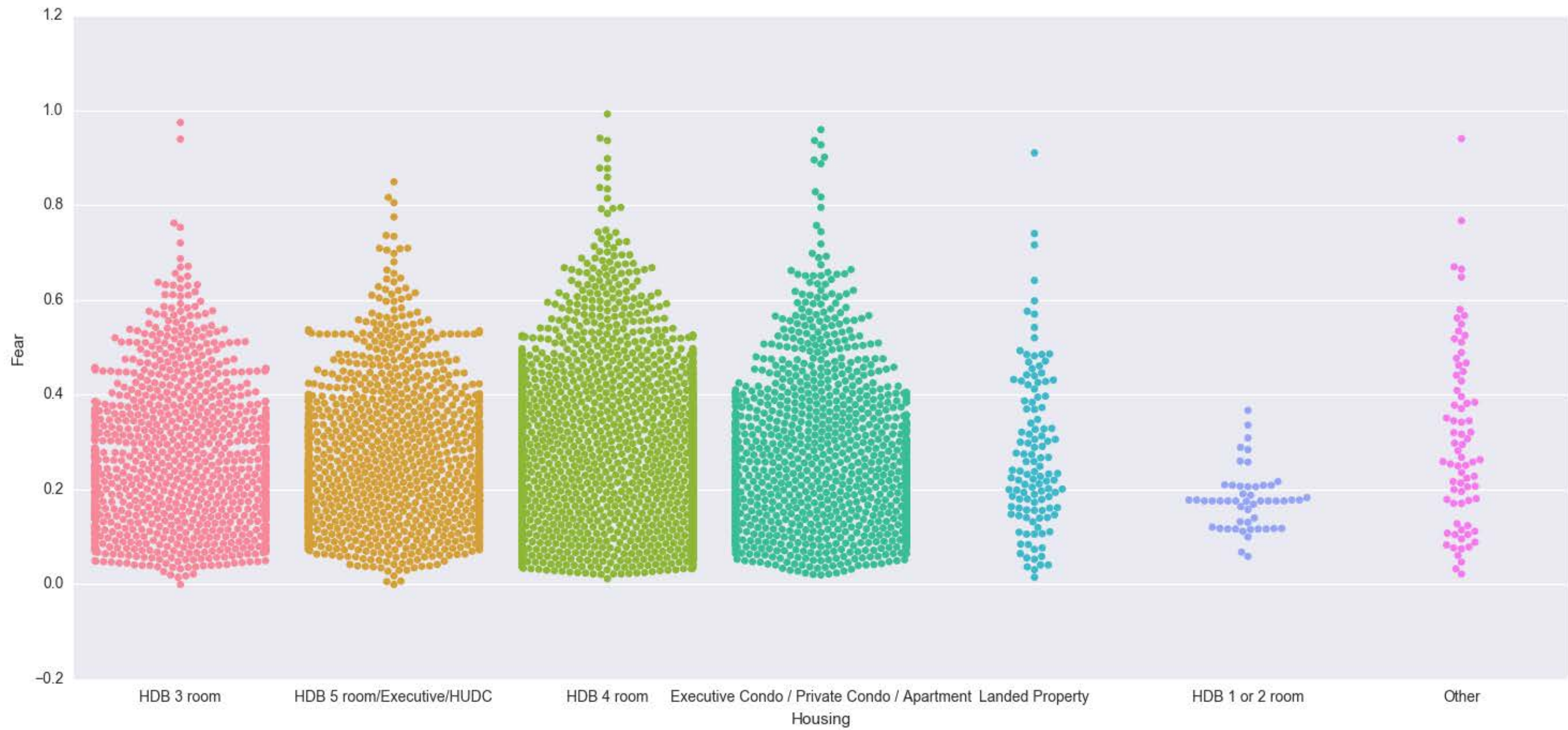All covariates of interest are not statistically significant (statistical significance: p-values ≤ 0.05).

Disgust (Table 10)

Variable	Coef.	Std. Err.	P>|t|
age	0.0010657	0.0006124	0.082
male	-0.0023793	0.0105836	0.822
edu_secondary	-0.0004669	0.0389129	0.99
edu_diploma	0.0555948	0.03731	0.136
edu_postSecVocational	0.0175991	0.0351717	0.617
edu_univFirst	0.0617734	0.0351018	0.079
edu_univPostGrad	0.0438203	0.0359708	0.223
edu_professionalOthers	0.0312215	0.0412	0.449
eth_chinese	0.0480645	0.0242208	0.047*
eth_indian	0.0465	0.0309515	0.133
employed	-0.0071343	0.0182327	0.696
wordcount	0.0020569	0.0001997	0.000**
_cons	0.1988464	0.0500083	0.000**

From Table 10, we observe that Chinese posters tend to express disgust more, as compared to Malay posters.

Joy (Table 11)

Variable	Coef.	Std. Err.	P>|t|
age	-0.0006353	0.0005237	0.225
male	0.0163988	0.00905	0.07
edu_secondary	0.0544997	0.0332743	0.102
edu_diploma	-0.0030235	0.0319036	0.925
edu_postSecVocational	0.035893	0.0300752	0.233
edu_univFirst	-0.0210368	0.0300154	0.483
edu_univPostGrad	-0.0119699	0.0307585	0.697
edu_professionalOthers	0.0858708	0.03523	0.015
eth_chinese	-0.0715969	0.0207111	0.001**
eth_indian	-0.0720776	0.0264665	0.007**
employed	-0.012836	0.0155907	0.41
wordcount	-0.0022047	0.0001708	0.000**
_cons	0.3420472	0.0427619	0.000**

From Table 11, we observe that Malay posters tend to express joy more, as compared to Chinese and Indian posters.

Sadness (Table 12)

Variable	Coef.	Std. Err.	P>|t|
age	-0.000578	0.0004668	0.216
male	-0.0109524	0.0080673	0.175
edu_secondary	-0.0326278	0.0296611	0.271
edu_diploma	-0.0273166	0.0284394	0.337
edu_postSecVocational	-0.0342376	0.0268094	0.202
edu_univFirst	-0.0373407	0.0267562	0.163
edu_univPostGrad	-0.0303934	0.0274186	0.268
edu_professionalOthers	-0.0447495	0.0314045	0.154
eth_chinese	0.0231826	0.0184622	0.209
eth_indian	-0.0037548	0.0235926	0.874
employed	0.024571	0.0138978	0.077
wordcount	-0.0006619	0.0001522	0.000**
_cons	0.3497414	0.0381185	0.000**

All covariates of interest are not statistically significant (statistical significance: p-values ≤ 0.05).

Sentiment Value (Table 13)

Variable	Coef.	Std. Err.	P>|t|
age	0.0033213	0.0015259	0.03*
male	0.0747843	0.0316585	0.018*
edu_secondary	0.2731088	0.13389	0.042*
edu_diploma	0.3858615	0.1264157	0.002**
edu_postSecVocational	0.3401151	0.129073	0.008**
edu_univFirst	0.2897225	0.1232578	0.019*
edu_univPostGrad	0.418048	0.1287303	0.001**
edu_professionalOthers	0.4090746	0.1573764	0.009**
eth_chinese	-0.2408591	0.4832441	0.618
eth_indian	-0.2181649	0.4887365	0.655
eth_malay	-0.0589372	0.4841095	0.903
employed	-0.0711404	0.0579856	0.22
wordcount	-0.0007625	0.0002561	0.003**
_cons	-0.1018227	0.5042113	0.84

From Table 13, we observe that older posters tend to be more positive than younger posters on the issue of fertility. We also see that male posters tend to be more positive than female posters. Finally, we observe that posters with a lower secondary education tend to be more negative compared to posters with higher levels of education. They are followed by posters with a secondary school education, undergraduate degree, post-secondary (non-tertiary) general and vocational qualification, polytechnic diploma, professional qualification or other diploma, and postgraduate degree, in increasing order of positivity.
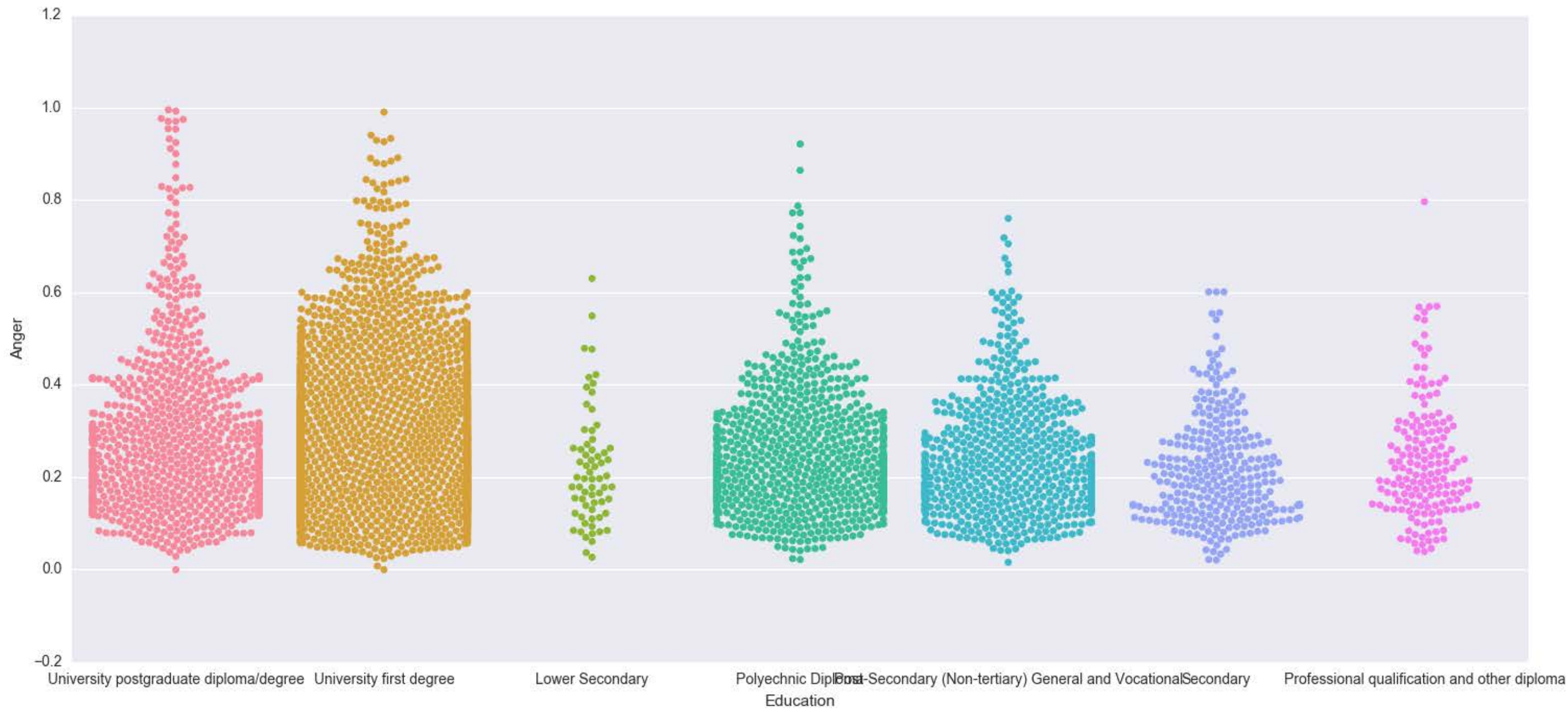
Anger (Table 14)

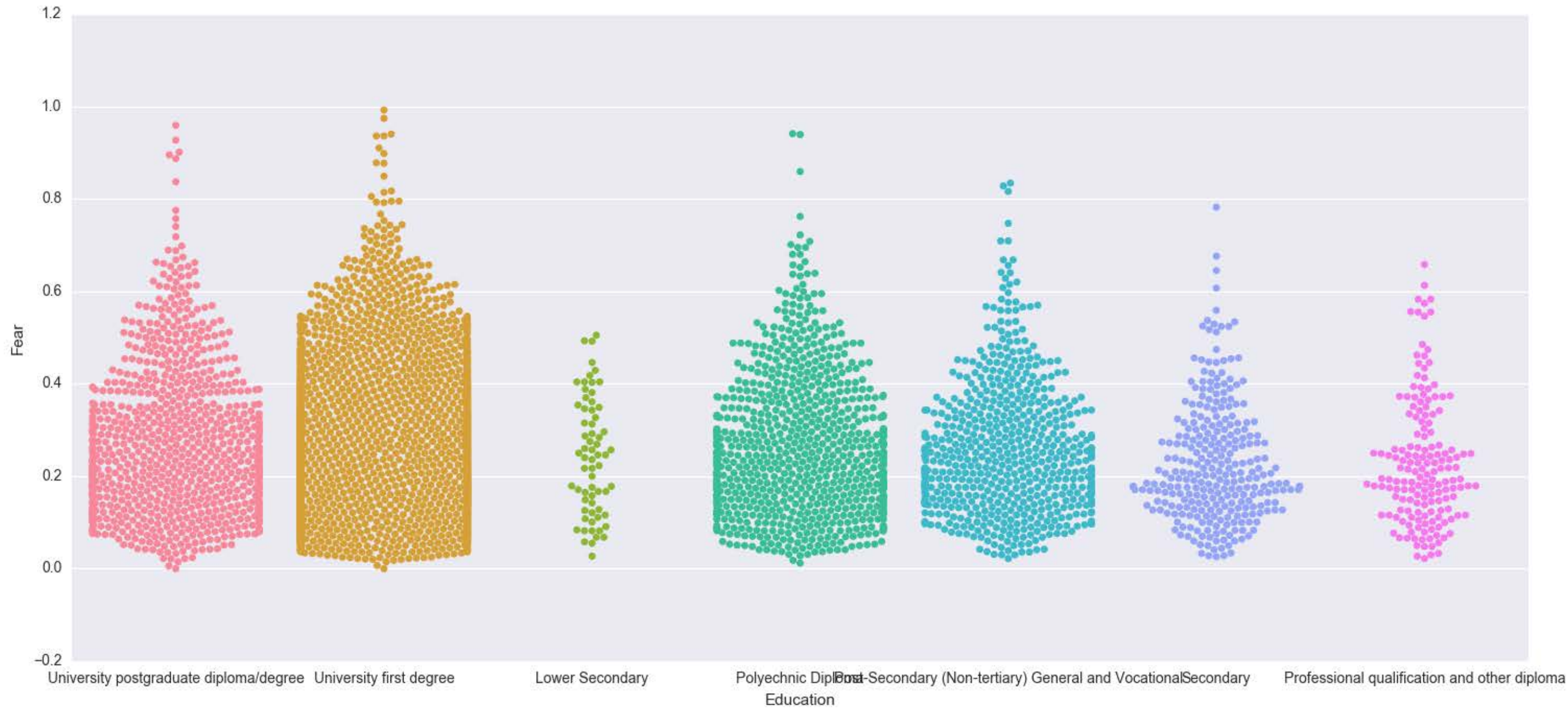| Variable	Coef.	Std. Err.	P>|t|
age	0.0008583	0.0003845	0.026*
male	-0.0144785	0.0079779	0.07
edu_secondary	-0.0436763	0.03374	0.196
edu_diploma	-0.0048033	0.0318565	0.88
edu_postSecVocational	-0.0334083	0.0325262	0.305
edu_univFirst	0.0233253	0.0310607	0.453
edu_univPostGrad	0.0031956	0.0324398	0.922
edu_professionalOthers	0.0397985	0.0396586	0.316
eth_chinese	-0.0431305	0.1217766	0.723
eth_indian	-0.0600601	0.1231607	0.626
eth_malay	-0.0750706	0.1219947	0.538
employed	-0.0043441	0.0146123	0.766
wordcount	0.0007106	0.0000645	0.000**
_cons	0.2394961	0.1270603	0.06

From Table 14, we observe that older posters tend to express anger more as compared to younger posters.

Fear (Table 15)

Variable	Coef.	Std. Err.	P>|t|
age	0.0001389	0.0004588	0.762
male	0.0024553	0.0095196	0.797
edu_secondary	0.0247425	0.0402601	0.539
edu_diploma	0.0225107	0.0380126	0.554
edu_postSecVocational	0.0393826	0.0388117	0.31
edu_univFirst	0.0270612	0.0370631	0.465
edu_univPostGrad	0.0102834	0.0387086	0.791
edu_professionalOthers	-0.0537211	0.0473224	0.256
eth_chinese	-0.0052426	0.1453093	0.971
eth_indian	-0.019522	0.1469608	0.894
eth_malay	-0.0087677	0.1455695	0.952
employed	-0.0219726	0.017436	0.208
wordcount	0.000165	0.000077	0.032*
_cons	0.2133264	0.151614	0.16

All covariates of interest are not statistically significant (statistical significance: p-values ≤ 0.05).

<div align="center">Disgust (Table 16)</div>

Variable	Coef.	Std. Err.	P>|t|
age	-0.0016704	0.0006068	0.006**
male	-0.0243701	0.0125901	0.053
edu_secondary	-0.0247562	0.0532458	0.642
edu_diploma	-0.0666032	0.0502734	0.185
edu_postSecVocational	-0.0028422	0.0513301	0.956
edu_univFirst	0.0025223	0.0490175	0.959
edu_univPostGrad	-0.0621987	0.0511939	0.225
edu_professionalOthers	-0.0469165	0.0625859	0.454
eth_chinese	-0.4136239	0.192178	0.032*
eth_indian	-0.4252801	0.1943622	0.029*
eth_malay	-0.4406535	0.1925222	0.022*
employed	0.0436105	0.0230599	0.059
wordcount	0.0005799	0.0001018	0.000**
_cons	0.8175091	0.2005163	0.000**

From Table 16, we see that younger people tend to express disgust more in comparison to older people. We also observe that Malay posters tend to express the least disgust as compared to "Other" posters, followed by Indian and Chinese posters.

<div align="center">**Joy (Table 17)**</div>

Variable	Coef.	Std. Err.	P>|t|
age	0.0012767	0.0006223	0.04*
male	0.0196972	0.0129104	0.127
edu_secondary	0.1075824	0.0546007	0.049*
edu_diploma	0.1446162	0.0515527	0.005**
edu_postSecVocational	0.1197588	0.0526363	0.023*
edu_univFirst	0.0784082	0.0502649	0.119
edu_univPostGrad	0.1342398	0.0524966	0.011*
edu_professionalOthers	0.1256934	0.0641786	0.05*
eth_chinese	0.2000932	0.1970683	0.31
eth_indian	0.2129353	0.1993082	0.286
eth_malay	0.2344811	0.1974213	0.235
employed	-0.0352712	0.0236467	0.136
wordcount	-0.0007402	0.0001044	0.000**
_cons	-0.0685089	0.2056188	0.739

From Table 17, we see that older people tend to express joy more in comparison to younger people. We also observe that polytechnic diploma holders tend to express the most joy as compared to posters with a lower secondary education, followed by posters with a postgraduate degree, professional qualification or other diploma, post-secondary (non-tertiary) general and vocational qualification, and secondary education, respectively.

Sadness (Table 18)

Variable	Coef.	Std. Err.	P>|t|
age	-0.0017	0.0004592	0.000**
male	-0.0069376	0.0095269	0.467
edu_secondary	-0.0543896	0.0402912	0.177
edu_diploma	-0.0924921	0.038042	0.015*
edu_postSecVocational	-0.1079745	0.0388416	0.006**
edu_univFirst	-0.0731234	0.0370917	0.049*
edu_univPostGrad	-0.0771424	0.0387385	0.047*
edu_professionalOthers	-0.0257168	0.0473589	0.587
eth_chinese	0.0919802	0.1454215	0.527
eth_indian	0.1015954	0.1470743	0.49
eth_malay	0.0643983	0.1456819	0.659
employed	0.0331922	0.0174495	0.057
wordcount	-0.0003831	0.0000771	0.000**
_cons	0.3163234	0.1517311	0.037*

From Table 18, we see that younger people tend to express sadness more in comparison to older people. We also observe that post-secondary (non-tertiary) general and vocational qualification holders tend to express the least sadness as compared to posters with a lower secondary education, followed by posters with a polytechnic diploma, postgraduate degree, and an undergraduate degree, respectively.

Investigation Into the Effect of
Income on Sentiment and Emotions

Introduction

In this report, we look at three collections of forum posts from the Online Deliberation project and investigate the effect of the posters' income on post sentiment and emotions like anger, fear, and disgust. Each collection revolves around a different topic; the topics are: "Foreign Workforce in Singapore", "Singapore's Fertility Issue", and "Immigration: New Citizens in Singapore".

Coding

Sentiment

We measure sentiment using the sentiment and emotion values calculated by IBM Alchemy. Sentiment values range from -1.0 to 1.0, with -1.0 being a negative sentiment and 1.0 being a positive sentiment. Each observation contains five emotion variables (anger disgust, fear, joy, sadness), and their intensities range from 0.0 to 1.0, with 0.0 indicating absence and 1.0 indicating a strong presence of the emotion. From preliminary visual analysis, we have identified anger and fear as emotions that potentially contain patterns of interest.

Income

We categorise our income data into 3 groups: Below \$4000, \$4000-\$7999, \$8000 and above. Originally, `income` was a categorical variable consisting of 16 categories: Below \$1000, \$1000-\$1999, \$2000-\$2999, \$3000-\$3999, \$4000-\$4999, \$5000-\$5999, \$6000-\$6999, \$7000-\$7999, \$8000-\$8999, \$9000-\$9999, \$10000-\$10999, \$11000-\$11999, \$12000-\$12999, \$13000-\$13999, \$14000-\$14999, \$15000 and above.
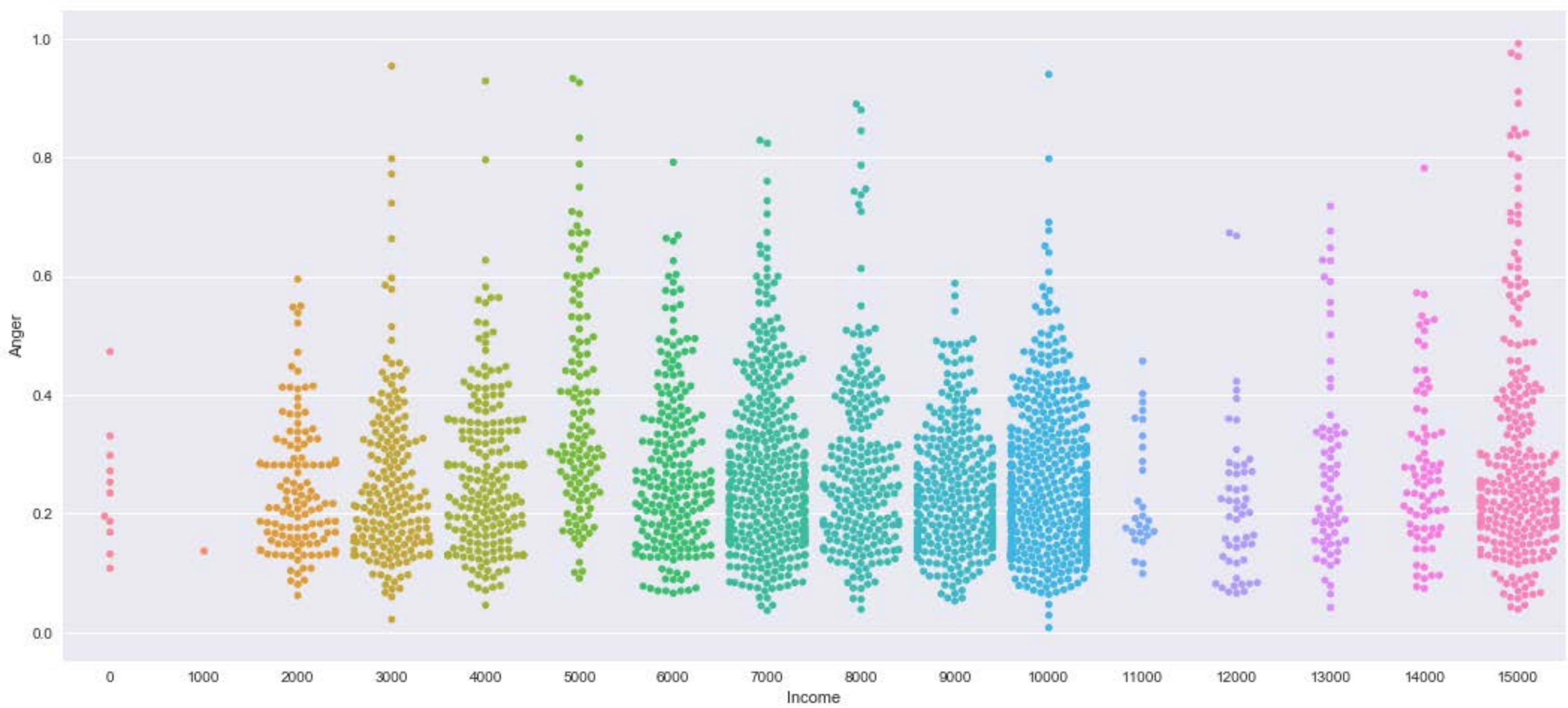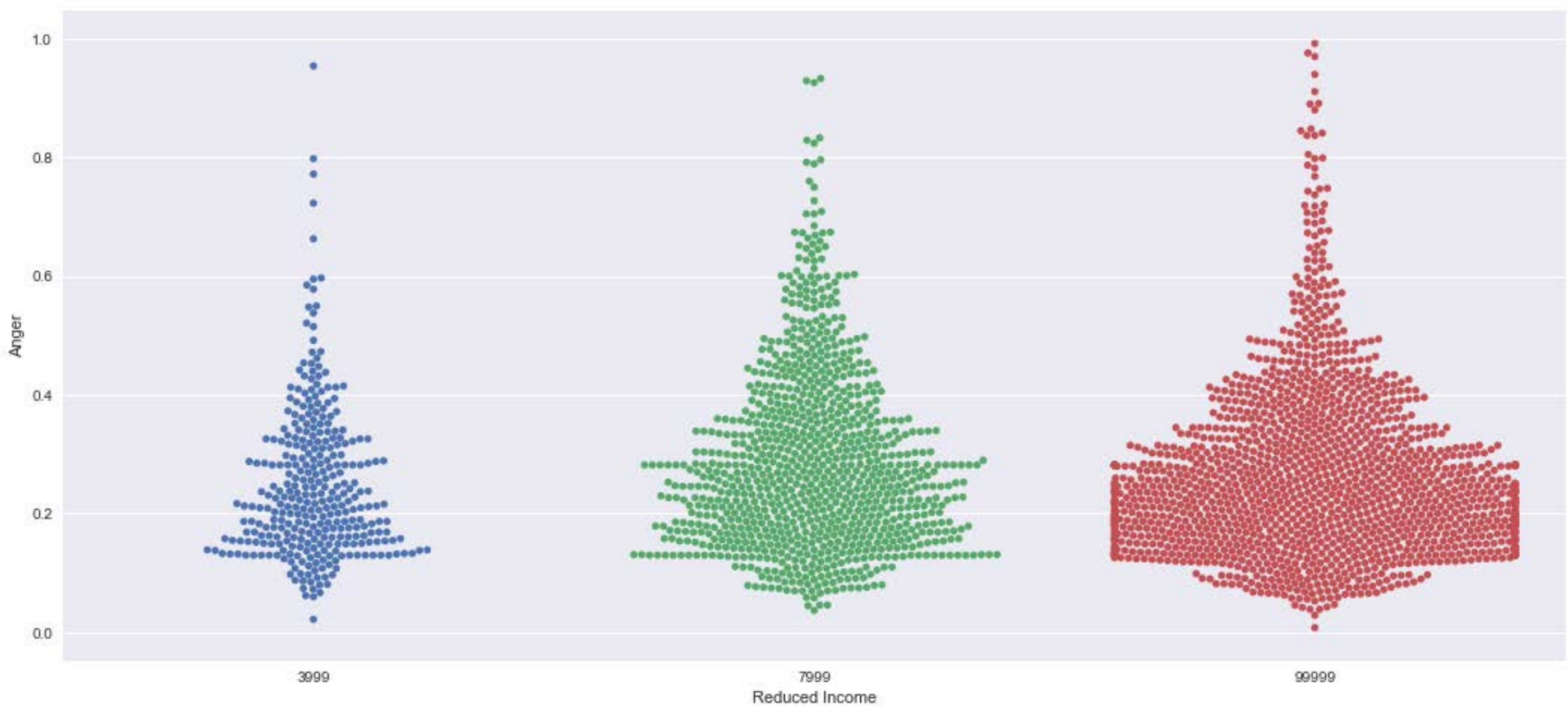
Results

In this report, we take p-value < 0.05 to be the threshold for statistical significance. Variables with p-values < 0.05 are denoted by *, and variables with p-values < 0.01 are denoted by **. Coefficients of dependent variables with p-values > 0.05 are not reported.

Anger (Table 1)

Variable	Coef.	Std. Err.	P>|t|
income	-1.88e-07	5.86e-08	0.001**
age	0.0007362	0.0002965	0.013*
male	-0.0066935	0.0061389	0.276
edu_secondary	0.0140216	0.0299748	0.64
edu_diploma	0.030624	0.0292516	0.295
edu_postSecVocationa	0.0296403	0.0284426	0.297
edu_univFirst	0.0498368	0.0288104	0.084
edu_univPostGrad	0.0607573	0.0297466	0.041*
edu_professionalOthers	0.0432147	0.0315833	0.171
eth_chinese	0.0207676	0.1148391	0.857
eth_indian	0.0345512	0.1153705	0.765
eth_malay	-0.005049	0.1154016	0.965
employed	-0.0128262	0.0101081	0.205
wordcount	0.001972	0.0000797	0**
y- intercept	0.137753	0.1189598	0.247

From Table 1, we observe that posters with a higher income tend to be slightly less angry than posters with lower income, though the difference is miniscule.

Immigration: New Citizens in Singapore

Sentiment Value (Table 2)

Variable	Coef.	Std. Err.	P>|t|
income	7.56e-07	3.01e-07	0.012*
age	-0.0006542	0.0016621	0.694
male	-0.007551	0.028943	0.794
edu_secondary	1.88e-01	1.05e-01	0.074
edu_diploma	0.2285265	0.100498	0.023*
edu_postSecVocationa	0.3061669	0.0934175	0.001**
edu_univFirst	0.0836816	0.0960925	0.384
edu_univPostGrad	0.1580339	0.1010346	0.118
edu_professionalOthers	0.3113689	0.1135229	0.006**
eth_chinese	0.0681595	0.0500633	0.174
eth_malay	0.3418129	0.0821048	0**
employed	0.0251753	0.0484222	0.603
wordcount	-0.0002059	0.0005352	0.701
y- intercept	-0.2032995	0.1508834	0.178

From Table 2, we observe that posters with a higher income tend to have a slightly more positive sentiment compared to posters with lower income, although the difference is miniscule.

Singapore's Fertility Issue
Coefficients of all dependent variables had p-values > 0.05.