ATHENS UNIVERSITY OF ECONOMICS AND BUSINESS

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ANASTASIA ROUMELIOTI

GOOGLE TRENDS AND STATUS PREFERENCES

NIKI KANTALI

BEHAVIORAL ECONOMICS

EVANGELOS V. DIOIKITOPOULOS

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ABSTRACT

This academic project examines the relationship between status, competition preference, and Google Trends data across European countries. Utilizing datasets from the European Social Survey, Google Trends, and the World Values Survey, the study employs regression analysis, correlation tests, and Principal Component Analysis to create an index based on Google Trends data. The research identifies a positive correlation between brand popularity and status importance. Further, it finds that individuals perceiving higher competition or lower happiness levels emphasize status more. Notably, demographic factors like age, income, and social interactions influence status prioritization. The study reveals significant interconnections between the Google Trends index, status importance, and competitive tendencies in European societies.

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1. INTRODUCTION

The emergence of the digital age has revolutionized the way people access information, connect with others, and seek status within society. As the internet has become an integral part of daily life, individuals increasingly rely on online platforms for various purposes, including seeking and displaying their social status. In this academic project, we aim to explore the relationship between Google Trends data and Status Preferences, shedding light on how online search behavior reflects individuals' aspirations for social recognition and prestige.

Status preferences have long been a subject of interest in social science research. Understanding how individuals seek and perceive status can provide valuable insights into consumer behavior, cultural dynamics, and societal trends. With the vast amount of information available on the internet, individuals now have unprecedented opportunities to engage in status-seeking activities, including online searches related to luxury brands, lifestyle trends, and social comparisons. Google Trends, a powerful tool that provides insights into search behavior, offers a unique opportunity to study the relationship between online search patterns and status preferences. By analyzing the relative search interest for specific keywords and topics, we can gain valuable insights into the collective status-related concerns of internet users. This project aims to leverage Google Trends data to investigate how search behavior relates to individuals' status preferences across various domains.

To achieve our research objectives, we employ a quantitative approach, utilizing statistical methods to analyze the relationship between Google Trends data and status preferences. We start by selecting relevant keywords and topics associated with status-seeking behavior, such as luxury brands, designer products, fashion trends, and social comparisons. These keywords serve as proxies for individuals' interests and desires related to status. Next, we collect historical Google Trends data for the chosen keywords and topics, capturing the search interest over time. By examining the temporal patterns in search behavior, we can identify trends and fluctuations in individuals' status-related interests, potentially reflecting societal shifts or cultural influences. We then conduct statistical analyses to explore the associations between search interest levels and various indicators of status preferences, such as income levels, education, and demographic factors. Additionally, we delve into cross-country comparisons to investigate potential variations in status preferences and online search behavior across different cultural contexts. By examining Google Trends data from multiple countries, we can explore how societal factors, cultural values, and economic conditions shape individuals' status-seeking tendencies and online search patterns.

Through our analysis, we aim to uncover valuable insights into the relationship between Google Trends data and status preferences. The findings from this research can contribute to a deeper understanding of consumer behavior, societal trends, and the role of digital platforms in facilitating and reflecting status-seeking behavior. The

subsequent sections will present the methodology employed, the analysis conducted, and the interpretation of the results, leading to a comprehensive understanding of the relationship between Google Trends and status preferences.

2. LITERATURE REVIEW

The literature review encompasses several notable studies that explore the intricate relationship between status preferences, Google Trends, and behavioral factors. I incorporated specific variables and datasets to investigate these relationships. Drawing from Andrew E. Clark and Claudia Senik's study on income comparisons in Europe, I utilized status as the dependent variable and examined its relationship with various behavioral variables from the dataset used in their research. This allowed for an exploration of how different behavioral factors influence individuals' perceptions of status.

In addition, I incorporated Lukasz Walasek and Gordon D. A. Brown's study on income inequality in the United States, which inspired me to examine the impact of status goods, such as luxury items, on individuals' perceptions of status. By incorporating this aspect into my analysis, I aimed to gain a deeper understanding of how these goods shape the perception and pursuit of status.

To investigate the relationship between competitiveness, status, and cultural influences, I utilized the World Value Survey (WVS) dataset, which contains information on individuals' willingness to compete. This dataset allowed me to explore whether certain countries exhibit higher levels of competitiveness and if there is a relationship between competitiveness and the pursuit of status.

Furthermore, you drew inspiration from Lukasz Walasek, Sudeep Bhatia, and Gordon D. A. Brown's study on the relationship between income inequality, social rank, and online chatter about high- and low-status brands on Twitter. By incorporating similar keyword-based research techniques into my analysis, I aimed to understand how countries' online searches for luxury brands may relate to their perceptions of status. This approach allowed for an examination of the intersection between online behavior and the pursuit of high-status goods.

Incorporating specific variables and datasets into my analysis, inspired by the studies mentioned, aims to deepen our understanding of the complex interplay between Google Trends, status preferences, and behavioral factors. Through examining the relationship between status and behavioral variables, investigating the influence of status goods on the perception of status, exploring competitiveness across countries, and analyzing the connection between online searches and status-related behavior, my research seeks to illuminate the multifaceted nature of status preferences and behaviors in society.

3. DATA DESCRIPTION

The primary dataset utilized for this study was sourced from the European Social Survey (ESS), comprising individual-level data. A key variable selected from this dataset is "Status". This variable forms our dependent variable. Several other variables were chosen to serve as independent variables, including:

- "Tvwatching": Represents the total time spent watching TV on an average weekday.
- "Education": Signifies the highest level of education achieved by the respondent.
- "Happy": Quantifies the respondent's happiness level.
- "Sociallymeet": Measures the frequency of social interactions with friends, relatives, or colleagues.
- "Supervising": Indicates the frequency of supervising interactions with friends, relatives, or colleagues.
- "Voluntary": Records the frequency of involvement in voluntary or charitable work in the past 12 months.
- "Age": Provides the respondent's age.
- "Income": States the respondent's income.

Additionally, a secondary data source was employed - the World Value Survey (WVS). From the WVS, the variable "Compete" was chosen, which evaluates respondents' perceptions of competition's value or detriment.

Lastly, using Google Trends, we harvested data on luxury brands ("Gucci", "Versace", "Prada", "Vogue", "Apple", "Dior" and "Cartier"). These data points facilitated the construction of an index, which was subsequently incorporated as an additional independent variable. This approach provided a more comprehensive and nuanced understanding of our research context, enriching our analyses and findings.

4. METHODOLOGY

The aim of this academic project is to analyze the relationship between Google Trends data and status preferences. The project involves several steps, including data preparation, regression analysis, normality and correlation analysis, visualization, the European Social Survey (ESS) data analysis, Google Trends data analysis, World Values Survey (WVS) data analysis, and merging of data for final analysis. The research is conducted using the R programming language.

4.1 Developing the Google Trends Index

The inception of this project involved generating an index. This process was initiated by extracting data from Google Trends, specifically, searches related to key luxury brands such as "Gucci", "Versace", "Prada", "Vogue", "Apple", "Dior", and "Cartier" across various countries. (*Table 1 see Appendices*) Given the vast amount of data we obtained, as we can see from Table 1, we organized them by country, computing an average number of searches per keyword within each nation. Our aim was to summarize the popularity of these brands, as reflected in the search frequency, on a country-by-country basis. To create our composite index, we applied a statistical technique known as Principal Component Analysis (PCA). PCA is a dimensionality reduction method that identifies the main patterns in data and expresses the data in such a way as to highlight their similarities and differences. In the PCA output, the first component, which accounted for the most significant proportion of the dataset's variance, was selected as our comprehensive measure to construct the Index. This resultant index encapsulates the overarching trend and variability in the Google Trends data, by amalgamating the scores of the first component for each country. Overall, this index, offers a summative representation of common online search patterns for the aforementioned luxury brands across a diverse range of countries. It thus provides a unified metric, facilitating an analysis of the overall trends and variances in the online search behaviors pertaining to these luxury brands

4.2 Aggregated the data by country

To analyze the data, the first step is to group the data from ESS by country and calculate the weighted mean value for each variable. The initial step is to group the data by country and calculate the weighted mean for each variable, providing average values for each country. Regression tests are then performed to explore the relationship between the status variable and now other variables including the variable “compete” from the WVS. This analysis sheds light on the influence of factors such as TV watching, education level, income, age, happiness, social interactions, supervision responsibilities, voluntary work, and competition on status preferences. Additionally, a comprehensive regression model is constructed to assess the collective impact of all variables on status

preferences. Concluding our analysis, we wanted to test the data to ensure our model's residuals conformed to key assumptions. Utilizing the Jarque-Berra and Shapiro-Wilk tests, we scrutinized the normality of our distribution, thereby strengthening the statistical integrity and reliability of our findings.

4.3 Conducted analysis on the ESS dataset

Our analysis within the framework of the European Social Survey (ESS) incorporates an intricate matrix of variables including 'Status', 'Tvwatching', 'Education', 'Happy', 'Sociallymeet', 'Supervising', 'Voluntary', 'Country', 'Age', and 'Income'. Each variable encapsulates distinct aspects of individual status preferences and corresponding influencers. The central aim of our study was to elucidate the effect of these individual-level variables on our primary dependent variable, namely "Status". This investigation endeavors to dissect the intricate dynamics influencing status, thereby contributing to a deeper and more nuanced understanding of the factors shaping individual status perceptions.

4.4 Clustering the standardized errors

In our investigation, it was crucial to preserve the granularity of our individual-level data. However, given the country-level nature of both our index and the "compete" variable, we needed to adjust in our analytical framework to appropriately include these variables. To address this, we implemented a strategy known as clustering in standard errors after we compiled a data frame with all relevant variables.

Clustering in standard errors is a robust technique for estimating standard errors that accounts for potential intragroup correlations and heteroscedasticity. The method acknowledges the possibility that observations within the same group may not be completely independent - a condition that, if unaddressed, may result in the underestimation of standard errors. By effecting clustering at the group level, this method more precisely estimates the data's variability. Consequently, this facilitates more dependable hypothesis testing and the formulation of confidence intervals, thereby enhancing the reliability and validity of our analytical results.

5. DISCUSSION OF FINDINGS

5.1 Data Visualization

To provide a visualization of the data, we employed a weighted average approach to determine the status levels across European countries, as depicted in *Map 1 (see Appendices*). The map reveals a spatial distribution of status pursuit, with East European countries and Spain exhibiting a higher inclination towards pursuing status, as indicated by the prevalence of yellow hues. In contrast, countries with a lower emphasis on status pursuit are represented by shades of blue. Building upon this analysis, *Map 2* illustrates the perceptions of Europeans regarding the impact of competition, contrasting the opinions of different countries. In alignment with the patterns observed in Map 1, East European countries tend to perceive competition as more harmful, evidenced by regions shaded in red tones. France stands out with a darker shade of red, indicating a particularly strong belief in the negative consequences of competition. Spain, alongside the East European countries, also demonstrates a tendency to view competition as harmful. Conversely, countries appearing in lighter shades of red and white exhibit a more favorable outlook towards competition.

In the correlation plot generated using the ESS dataset, we observed several interesting findings. *Figure 1* revealed a medium positive significant correlation between the variables 'Happy' and 'Income'. This suggests that individuals with higher levels of happiness tend to have higher income levels. However, the remaining variables in the ESS dataset did not exhibit any significant correlations with each other. Expanding upon these findings, *Figure 2* incorporated the Google Trends Index along with the variables from the ESS dataset. Similar to *Figure 1*, we observed a positive relationship between 'Happy' and 'Income' and we also discovered a negative medium significant correlation between the Google Trends Index and 'Income'. This finding suggests that as the popularity of brands, as represented by the Google Trends Index, increases, individuals' income levels tend to decrease. *In Figure 3*, we extended our analysis to include the 'Compete' variable from the WTC dataset alongside the ESS dataset and the Google Trends Index. Notably, we identified a negative medium significant correlation between 'Income' and 'Compete'. This implies that individuals who exhibit a greater inclination towards competition tend to have lower income levels.

Moving on to the validation of model assumptions, we implemented a Jarque-Berra and Shapiro-Wilk normality test on the residuals. The results, illustrated in *Table 3* and *Figure 5,* confirm the normality of our residuals across all models.

5.2 Regression Analysis

5.2.1 Group by Country

In the preceding sections, we elucidated on the data grouping methodology, designed to reveal how independent variables influence 'Status' at a country level. As evidenced in *Appendices Table 2*, we see in column 1, the marginal effect of Compete is positive and significant. Economically, for one unit increase in perceived level of competition, there is a corresponding average increase of 0.081 in the importance of 'Status'. This implies that escalating perceptions of competition (ranging from 0 to 5) correspond to a heightened importance of 'Status' by 0.081 units. When examining our index in column 2, representing the popularity of brands, we notice a positive trend; a one-unit increase results in a 0.06 increase in 'Status' importance. In contrast, in column 3, 4 the 'Happy' variable indicates an inverse relationship with 'Status', suggesting that a decrease in happiness tends to amplify the importance of 'Status'. Moreover, it was observed in column 5, 6 that individuals frequently engaging in volunteering activities generally placed higher importance on 'Status'.

5.2.2 Baseline Model

We then transitioned our analysis to a second set of models, primarily focusing on how the ESS data influenced 'Status'. As depicted in *Table 4*, in models 1 and 2 display statistical significance across all variables. Education and TvWatching in all models are positively correlated with the status seeking while age, income and “sociallymeet” negatively. In Model 3, the 'Supervising' variable was introduced, which, while not statistically significant, exhibited a positive correlation with 'Status'. Model 4, incorporating all variables of interest, indicates all but the 'Supervising' variable as statistically significant. Notably, 'Age', 'Income', 'Sociallymeet' and “Happy”, share an inverse relationship with 'Status', suggesting that older individuals, those with higher income, those with frequent social interactions and less happy, tend to seek status less.

5.2.3 Clustering the Standardized Errors

In the final stages of our study, we sought to maintain the integrity of our individual-level data. To do this, we utilized a clustering method to standardize errors in a manner that protects the individual-level context within the 'Status' variable, while integrating the Google Trends Index and the 'Compete' variable. This approach was demonstrated in Table 5.

The first model includes variables such as "education", "age", and "income". We found all of these factors to be statistically significant. Notably, "age" and "income" demonstrated a negative correlation with 'Status', indicating that an increase in either variable tends to correspond with a decline in 'Status'. This observation remained consistent across all models.

In the second model, we incorporated "tvwatching", "sociallymeet", and our Google Trends Index. Interestingly, the 'TVwatching' variable indicated a positive correlation with 'Status'. However, no such correlation was observed in 'Sociallymeet' and our Google Trends Index, suggesting these variables have less impact on 'Status'.

Model three introduced the variables "supervising" and "willingness to compete". Both variables displayed a positive correlation with status-seeking behavior. This suggests that individuals who supervise others or demonstrate a competitive streak may be more inclined to seek higher status.

The fourth model integrated the variable "happy". Here, we observed a negative correlation with 'Status', implying that a higher level of happiness corresponds with a decreased tendency to seek status. This finding may reflect a shift in priorities for individuals who are more content.

Finally, in the fifth and comprehensive model, we included all variables. Here, 'Age', 'Sociallymeet', and 'Happy' emerged as statistically significant. It underscores that factors such as an individual's age, social interactions, and level of happiness have the most potent impact on their status-seeking behavior.

5.3 Status and Google Trends Index across Countries

In *Figure 4*, we present a comparative analysis of aggregated status levels and the Google Trends index across European countries. The plot utilizes two y-axes to depict the respective measures. The left axis represents the status levels, reflecting the degree of emphasis on status pursuit, while the right axis represents the Google Trends index, derived from keyword research on topics related to luxury and expense. Our examination of the data revealed discernible patterns among the countries. Switzerland (CH) and the United Kingdom (GB) share a similar trend, characterized by relatively low pursuit of status and a correspondingly low level of research activity in relation to the status levels. Conversely, Estonia (EE) exhibits a distinct pattern, characterized by a high pursuit of status and substantial research activity, as indicated by a comparatively high Google Trends index. This suggests a strong emphasis on status pursuit in Estonia, reflected in both the aggregated status levels and the extensive research on luxury-related topics. Notably, Latvia (LV), Finland (FI), and Slovakia (SK) exhibit an intriguing inverse relationship between the Google Trends index and the status levels. As the status levels increase, there is a decline in interest and research activity pertaining to luxury-related topics. This suggests that in these countries, a higher pursuit of status is associated with a reduced interest in luxury, as evidenced by the lower Google Trends index for such research queries. These findings shed light on the complex dynamics between status pursuit, research trends, and cultural preferences across European countries.

6. CONCLUSIONS

In conclusion, our research utilized a comprehensive methodology encompassing data preparation, regression analysis, normality and correlation tests, visualization, and data merging. The findings revealed a significant relationship between the pursuit of status and attitudes towards competition across European countries. East European countries, along with Spain, exhibited a higher emphasis on status pursuit and tended to perceive competition as more harmful. Conversely, countries with a lower emphasis on status placed a more positive outlook on competition.

Through regression analysis, we identified several significant associations with the importance of status. Perceived competition, the popularity of brands, happiness, and engagement in volunteering activities all played a role in shaping the significance attributed to status. Furthermore, factors such as age, income, and social interactions influenced the importance of status, with older individuals, those with higher income, and those with frequent social interactions tending to prioritize status less. In summary, our investigation identified several key variables that contribute to status-seeking behavior. These results provide valuable insights into individual preferences and choices, further enhancing our understanding of socio-economic behavior.

Visualizations and analysis of aggregated status levels and the Google Trends index revealed distinct patterns among European countries. Switzerland and the United Kingdom exhibited lower levels of status pursuit and research activity, while Estonia displayed a strong emphasis on status pursuit and extensive research on luxury-related topics. Latvia, Finland, and Slovakia demonstrated an inverse relationship between the Google Trends index and status levels, indicating a reduced interest in luxury as status pursuit increased.

7. BIBLIOGRAPHY

- Clark AE, Senik C. Who Compares to Whom? The Anatomy of Income Comparisons in Europe. *SSRN Electronic Journal*. Published online 2009. doi: https://doi.org/10.2139/ssrn.1489237

- Walasek L, Brown G. Income Inequality and Status Seeking. *Psychological science*. Published online 2015. doi: https://doi.org/10.1177/0956797614567511

- Hauge KE, Kotsadam A, Riege A. Culture and Gender Differences in Willingness to Compete. *The Economic Journal*. Published online April 25, 2023. doi: https://doi.org/10.1093/ej/uead033

- Walasek L, Bhatia S, Brown GDA. Positional Goods and the Social Rank Hypothesis: Income Inequality Affects Online Chatter about High- and Low-Status Brands on Twitter. *Journal of Consumer Psychology*. 2017;28(1):138-148. doi: https://doi.org/10.1002/jcpy.1012

- Quispe-Torreblanca EG, Brown GDA, Boyce CJ, Wood AM, De Neve JE. Inequality and Social Rank: Income Increases Buy More Life Satisfaction in More Equal Countries. *Personality and Social Psychology Bulletin*. 2020;47(4):519-539. doi: https://doi.org/10.1177/0146167220923853

8. APPENDICES

8.1 Figures

Figure 1: Correlation among Variables in the ESS Dataset

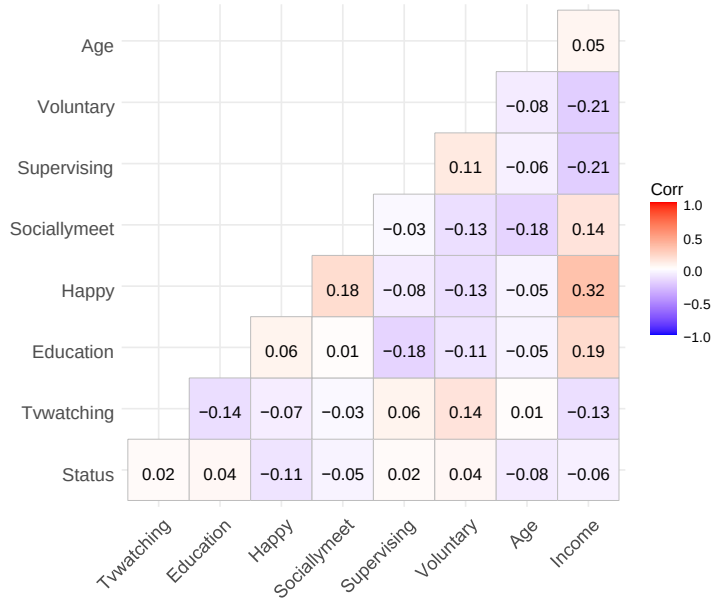


Figure 2: Correlation between Variables in the ESS Dataset with Google Trends Index

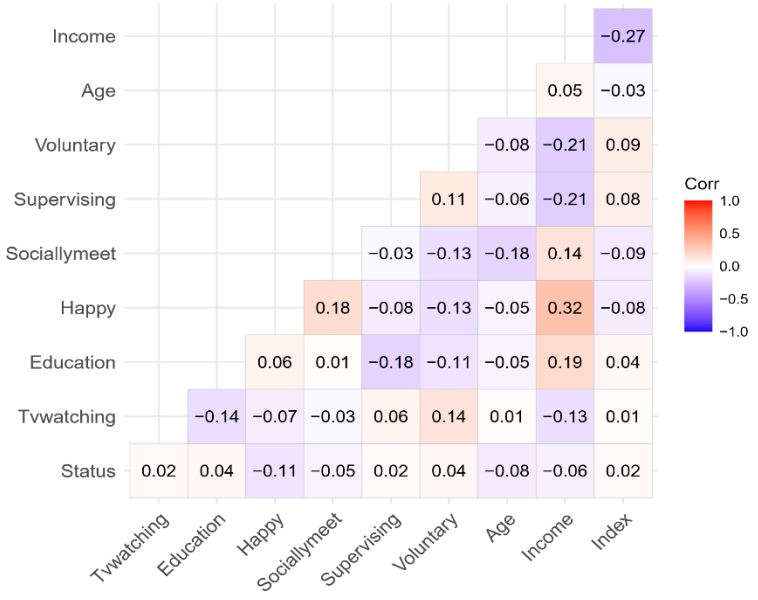


Figure 3: Correlation between Variables in the ESS and WTC Datasets with Google Trends Index and Compete Variable

Figure 4: Status and Google Trends Index Across Countries

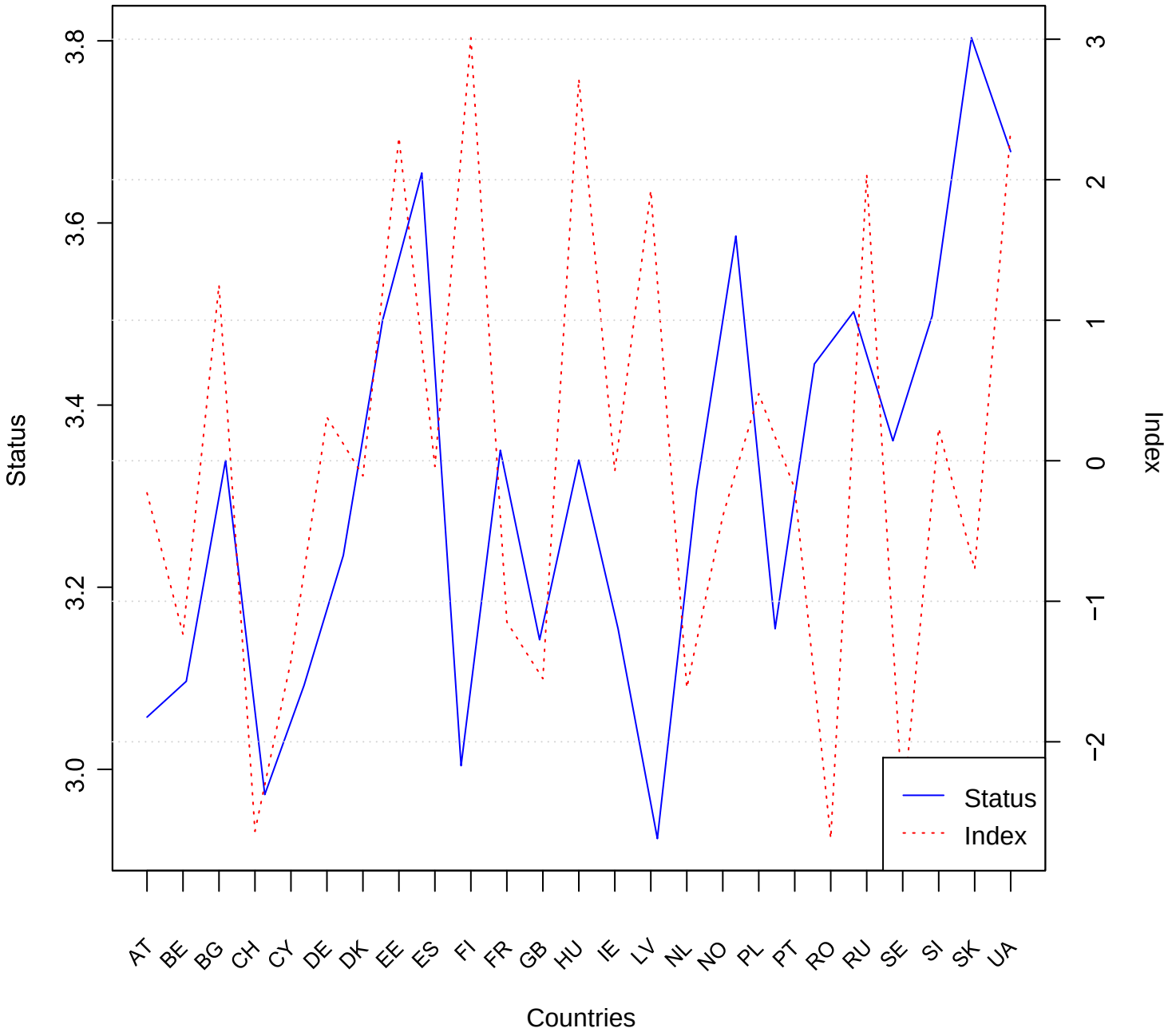
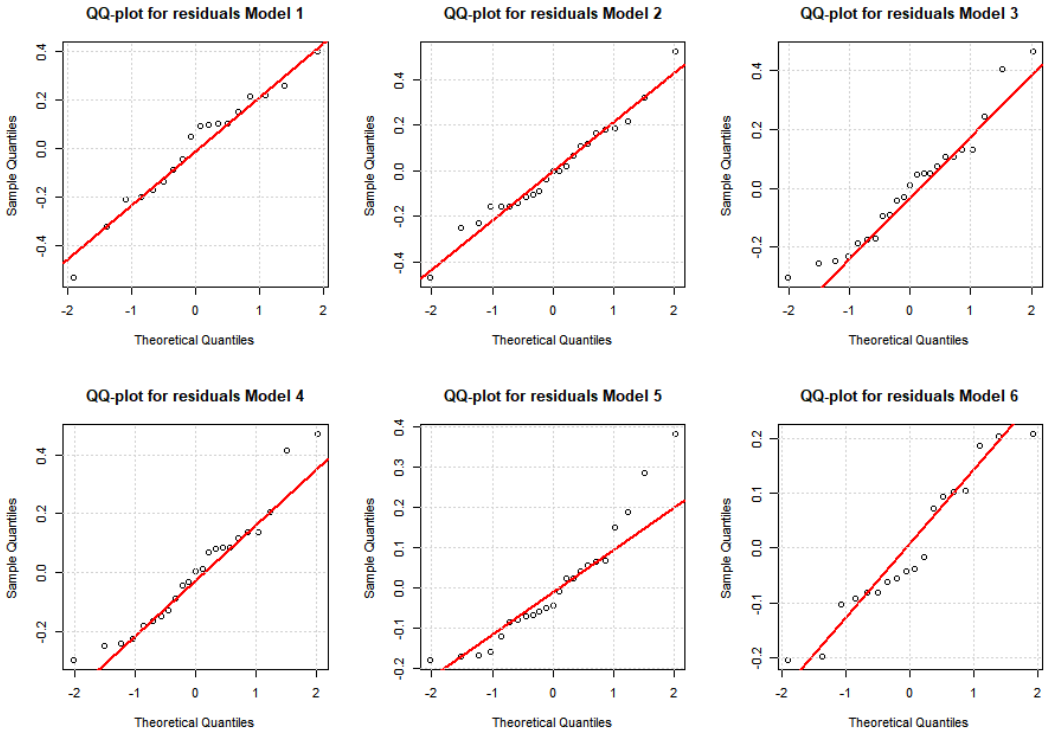
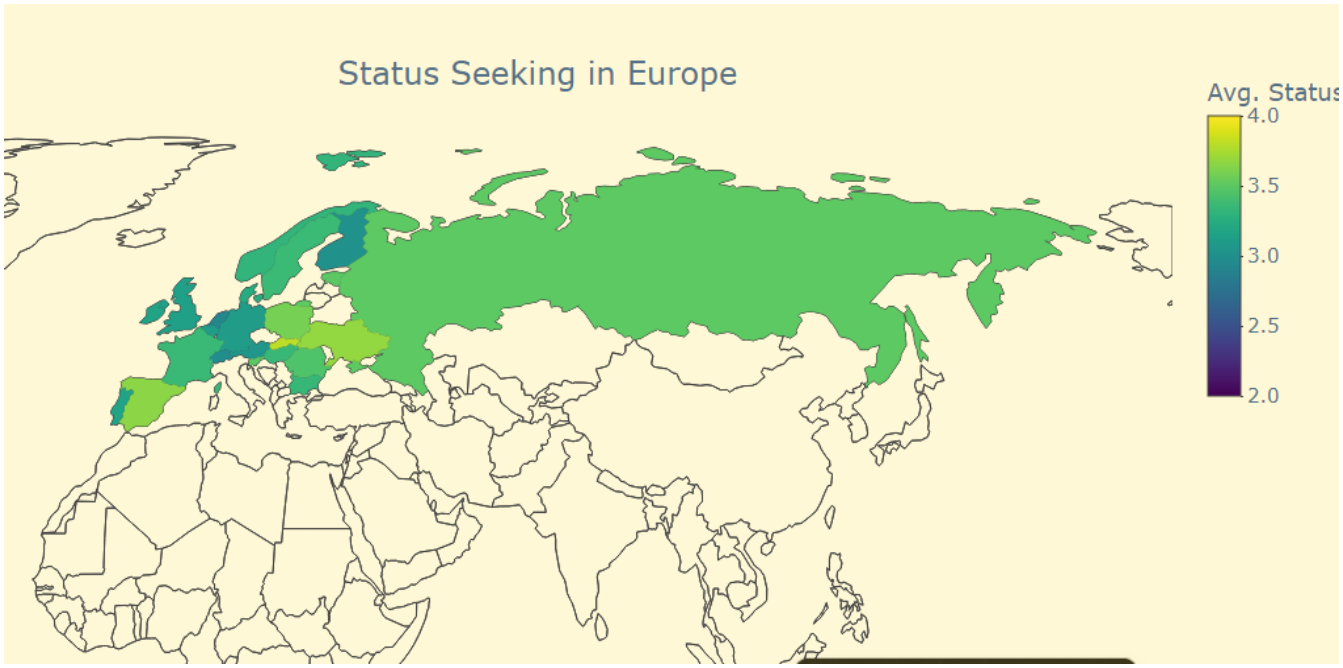


Figure 5: Residual Assumptions (QQ-plots)

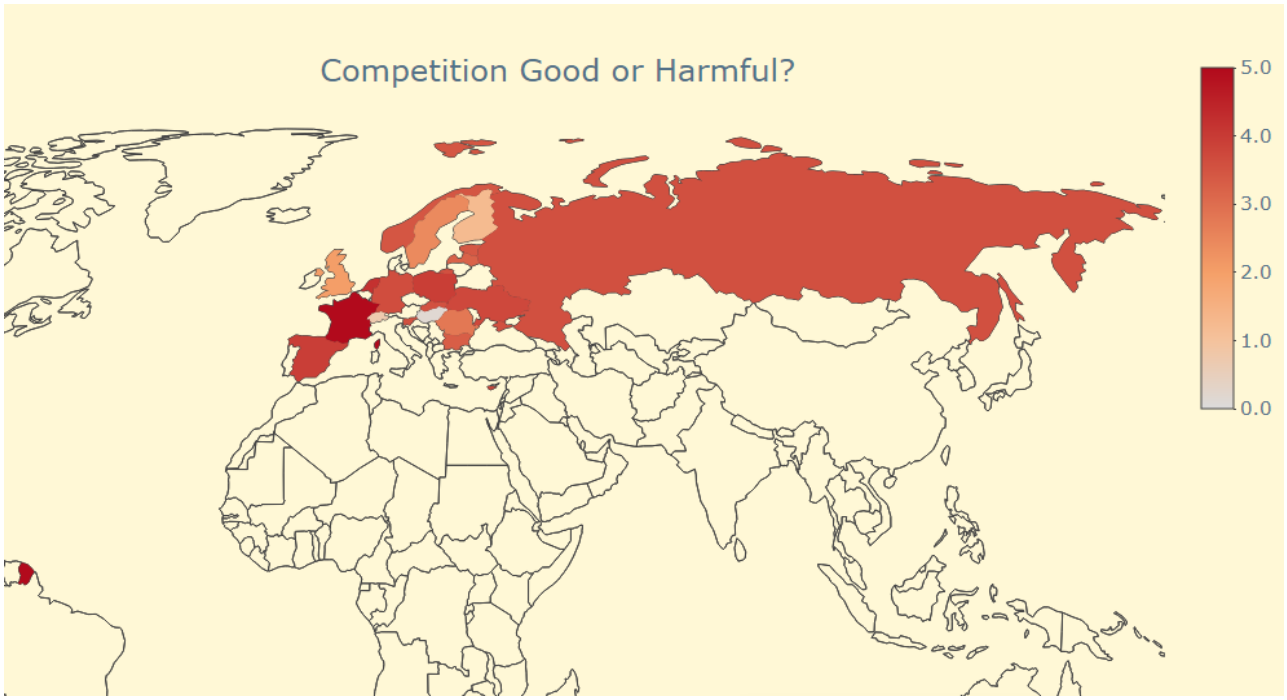


8.2 Maps

Map 1: Status Across European Countries



Map 2: Competition Across European Countries



8.3 Tables

Table 1: Google Trends Dataset

Geo	Apple	Cartier	Dior	Gucci	Prada	Versace	Vogue
AT	38.19231	21.96154	28.67308	47.78846	31.86538	26.7692	24
BE	38.34615	55.38462	42.63462	49.38462	23.67308	25.9423	29.07692
BG	13.36538	12.88462	30.92308	31.34615	11.40385	31.9038	19.63462
CH	50.80769	63.03846	42.98077	65.75	35.15385	31.0962	32.13462
CY	37.30769	23.09615	44.21154	55.07692	28.86538	38.6731	28.15385
DE	52.36538	36.07692	37.36538	44.75	21.59615	6.96154	16.53846
DK	18.94231	27.98077	42.34615	82.13462	22.30769	8.61538	13.5
EE	33.28846	13.59615	29.96154	30.75	6.711538	6.71154	10.84615
ES	30.76923	32.61538	35.90385	31.21154	39.65385	9.55769	33.38462
FI	24	10.98077	19.86538	27.71154	6.807692	4.75	10.75
FR	16.80769	79.32692	57.61538	35.01923	27.30769	17.2308	18.75
GB	34.46154	42.65385	33.69231	55.90385	44.19231	29.2308	27.32692
HU	23.73077	11.23077	13.19231	22.80769	16.26923	15.9038	6.615385
IE	61	16.90385	15.76923	32.75	34.71154	20.1346	48.94231
LV	26.59615	14.69231	23.26923	27.30769	19.59615	15.8462	10.51923
NL	29.28846	36.69231	52.19231	70.46154	43.42308	16.5962	15.94231
NO	57.63462	11.82692	38.44231	74.59615	35.34615	8.59615	8.365385
PL	8.230769	7.192308	45.61538	49.03846	31.92308	17.8462	11.69231
PT	35.59615	16.90385	29.78846	42.38462	54.25	15.25	17.46154
RO	20.65385	81.11538	56.51923	52.01923	55.25	22.5577	14.96154
RU	29.23077	17.61538	27.07692	20.98077	14.96154	5.07692	26.21154
SE	56.92308	32.15385	43.03846	80.07692	40.15385	32.75	23.13462
SI	28.67308	17.61538	35.55769	32.82692	30.25	22.7308	27.25
SK	32.55769	14.96154	51.05769	45.25	30.36538	25.7885	27.71154
UA	22.03846	14.96154	25.59615	20.17308	15.38462	6.07692	20.53846

Table 2: Grouped Data by Country

Group by Country Model

	Dependent variable: Status					
	W. Av Status					
	(1)	(2)	(3)	(4)	(5)	(6)
Willingness.to.compete	0.081*					0.072
	(0.045)					(0.044)
Index		0.060**				-0.013
		(0.025)				(0.033)
avg_Tvwatching			-0.142	-0.139	-0.222*	-0.230
			(0.132)	(0.135)	(0.113)	(0.138)
avg_Education			0.084	0.061	0.101	0.008
			(0.115)	(0.126)	(0.107)	(0.189)
avg_Happy			-0.187**	-0.168*	-0.065	-0.044
			(0.068)	(0.080)	(0.084)	(0.136)
avg_Sociallymeet				-0.053	0.051	0.049
				(0.113)	(0.091)	(0.141)
avg_Supervising					-1.245	-0.302
					(0.825)	(1.131)
avg_Voluntary					0.509***	0.456**
					(0.133)	(0.175)
Constant	3.113***	3.317***	5.217***	5.403***	3.887	2.607
	(0.150)	(0.046)	(1.198)	(1.285)	(2.366)	(3.353)
Observations	18	23	23	23	23	18
R2	0.166	0.221	0.311	0.319	0.646	0.745
Adjusted R2	0.114	0.184	0.202	0.168	0.514	0.519
Residual Std. Error	0.238 (df = 16)	0.220 (df = 21)	0.217 (df = 19)	0.222 (df = 18)	0.170 (df = 16)	0.176 (df = 9)
F Statistic	3.181* (df = 1; 16)	5.947** (df = 1; 21)	2.854* (df = 3; 19)	2.109 (df = 4; 18)	4.870*** (df = 6; 16)	3.292** (df = 8; 9)

Notes: *, ** and *** denote significance at the 10%, 5% a levels respectively
*p<0.1; **p<0.05; ***p<0.01

Table 3: Test of the Residuals Assumptions

	Jarque-Berra Test	Shapiro-Wilk
Model 1	X-squared = 0.70143, df = 2, p-value = 0.7042	W = 0.97006, p-value = 0.7988
Model 2	X-squared = 0.4069, df = 2, p-value = 0.8159	W = 0.97789, p-value = 0.8673
Model 3	X-squared = 1.2103, df = 2, p-value = 0.546	W = 0.95039, p-value = 0.2981
Model 4	X-squared = 1.483, df = 2, p-value = 0.4764	W = 0.94611, p-value = 0.2426
Model 5	X-squared = 4.2528, df = 2, p-value = 0.1193	W = 0.91367, p-value = 0.04884
Model 6	X-squared = 0.86555, df = 2, p-value = 0.6487	W = 0.93112, p-value = 0.2032

Table 4: Baseline Model with Individualized data

Baseline Model

	Dependent variable: Status			
	Status			
	(1)	(2)	(3)	(4)
Education	0.079***	0.079***	0.081***	0.082***
	(0.012)	(0.012)	(0.012)	(0.012)
Age	-0.012***	-0.014***	-0.014***	-0.014***
	(0.001)	(0.001)	(0.001)	(0.001)
Income	-0.050***	-0.042***	-0.040***	-0.017***
	(0.006)	(0.006)	(0.006)	(0.006)
Tvwatching		0.023***	0.023***	0.019**
		(0.008)	(0.008)	(0.008)
Sociallymeet		-0.074***	-0.074***	-0.055***
		(0.010)	(0.010)	(0.010)
Supervising			0.026	0.015
			(0.031)	(0.031)
Voluntary				0.017*
				(0.009)
Happy				-0.105***
				(0.009)
Constant	3.768***	4.051***	3.985***	4.596***
	(0.079)	(0.109)	(0.130)	(0.154)
Observations	16,286	16,230	16,137	16,032
R2	0.014	0.017	0.017	0.027
Adjusted R2	0.014	0.017	0.017	0.026
Residual Std. Error	1.818 (df = 16282)	1.814 (df = 16224)	1.814 (df = 16130)	1.805 (df = 16023)
F Statistic	75.668*** (df = 3; 16282)	57.454*** (df = 5; 16224)	47.437*** (df = 6; 16130)	54.591*** (df = 8; 16023)

Notes: *, ** and *** denote significance at the 10%, 5% a levels respectively
*p<0.1; **p<0.05; ***p<0.01

Table 5: Clustering the Standardized Errors

Clustering Model

	Dependent variable: Status				
	Status				
	(1)	(2)	(3)	(4)	(5)
Education	0.079***	0.080***	0.078***	0.075**	0.076**
	(0.020)	(0.023)	(0.030)	(0.031)	(0.032)
Age	-0.012***	-0.014***	-0.013***	-0.014***	-0.013***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Income	-0.050***	-0.042***	-0.041***	-0.022	-0.020
	(0.011)	(0.014)	(0.016)	(0.015)	(0.015)
Tvwatching		0.023**	0.006	0.004	0.003
		(0.011)	(0.012)	(0.011)	(0.011)
Sociallymeet		-0.074***	-0.083***	-0.066***	-0.064***
		(0.011)	(0.013)	(0.013)	(0.014)
Supervising			0.050	0.038	0.038
			(0.046)	(0.046)	(0.045)
Voluntary					0.013
					(0.014)
Happy				-0.098***	-0.098***
				(0.016)	(0.016)
Index		-0.002	-0.002	0.001	-0.0001
		(0.046)	(0.043)	(0.042)	(0.042)
Compete			0.051	0.041	0.042
			(0.038)	(0.038)	(0.037)
Constant	3.768***	4.053***	3.909***	4.632***	4.542***
	(0.178)	(0.212)	(0.275)	(0.301)	(0.316)
Observations	16,286	16,230	12,344	12,316	12,264
R2	0.014	0.017	0.020	0.027	0.027
Adjusted R2	0.014	0.017	0.019	0.026	0.026
Residual Std. Error	1.818 (df = 16282)	1.814 (df = 16223)	1.842 (df = 12335)	1.835 (df = 12306)	1.834 (df = 12253)

Notes: *, ** and *** denote significance at the 10%, 5% a levels respectively
*p<0.1; **p<0.05; ***p<0.01