

**UNIVERSITY OF EAST ANGLIA**

**School of Economics**

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## **1.0 Introduction**

The Eurovision Song Contest, a spectacle of music and cultural display, has been a yearly occurrence since 1956, with the exception of the year 2020. It is a unique event that brings together members of the European Broadcasting Union and occasionally invited guest countries to compete in a vibrant competition that captures the hearts of viewers worldwide. Each participating nation selects a musical act to represent them, and through a series of performances, they vie for the coveted title of having the winning song of the contest.

The victor of the Eurovision Song Contest is determined by a distinctive voting system where countries award points to the performances of other nations. The current voting system allows each country to distribute points in descending order, with the highest points being 12, followed by 10 and 8, down to 1 point. The accumulation of these points decides the winner of the competition, with the country garnering the most points declared as the winner. This system, however, has undergone several changes throughout the history of the contest.

The datasets:

- The **contestants** dataset ([view dataset](#)) encapsulates each country's entries and their respective outcomes throughout the years.
- The **votes** dataset ([view dataset](#)) details the points exchanged between countries during the contest.

For the purpose of this task, the focus will be on the data corresponding to the years where the current point system was implemented.

The ensuing analyses are designed to unravel the intricacies of the Eurovision Song Contest through the lens of behavioural economics:

1. **Internal Consistency Check:** Verification of the congruence between the points reported by contestants and those recorded in the votes dataset, along with a comparison of the reported rankings against those implied by point totals.
2. **Success Metrics:** Determination of the most and least successful countries, taking into account varying measures of success, such as vote counts, rankings, and their statistical distributions, while considering the fluctuating number of participating countries and the total points available each year.
3. **Ordering Effects:** Exploration of the potential impact of performance order on final rankings, delving into behavioural economics theories such as anchoring and recency effects.
4. **Voting Blocs and Reciprocity:** Investigation of the existence of voting blocs and reciprocal voting patterns up to the year 2015, providing empirical evidence of these phenomena.
5. **Jury Versus Public Voting:** Analysis of the voting patterns post-2016, when the voting structure was amended to include a split between public televoting and professional jury voting, to test the hypothesis that jury voting exhibits less reciprocity.

This report aims to illuminate the behavioural economic patterns within the Eurovision Song Contest's voting system, providing insights into the factors that influence country performance and the dynamics of voting reciprocity.

## **2.0 Data Profiling Of Datasets**

Contestants Datasets.

Variables	Time-Variant/Invariant	Structured/Unstructured	Qualitative/Quantitative	Nominal/Ordinal	Discrete/Continuous
year	Time-Variant	Structured	Quantitative		Discrete
to_country_id	Time-Invariant	Structured	Qualitative	Nominal	
to_country	Time-Invariant	Structured	Qualitative	Nominal	
performer	Time-Variant	Structured	Qualitative	Nominal	
song	Time-Variant	Structured	Qualitative	Nominal	
place_contest	Time-Variant	Structured	Quantitative		Discrete
sf_num	Time-Variant	Structured	Quantitative		Discrete
running_final	Time-Variant	Structured	Quantitative		Discrete
running_sf	Time-Variant	Structured	Quantitative		Discrete
place_final	Time-Variant	Structured	Quantitative		Discrete
place_sf	Time-Variant	Structured	Quantitative		Discrete
points_sf	Time-Variant	Structured	Quantitative		Discrete
points_tele_final	Time-Variant	Structured	Quantitative		Discrete
points_jury_final	Time-Variant	Structured	Quantitative		Discrete
points_tele_sf	Time-Variant	Structured	Quantitative		Discrete
points_jury_sf	Time-Variant	Structured	Quantitative		Discrete
composers	Time-Variant	Structured	Qualitative	Nominal	
lyricists	Time-Variant	Structured	Qualitative	Nominal	
lyrics	Time-Variant	Unstructured	Qualitative	Nominal	
youtube_url	Time-Variant	Structured	Qualitative	Nominal	

## Votes Datasets

Variables	Time-Variant/Invariant	Structured/Unstructured	Qualitative/Quantitative	Qualitative: Nominal/Ordinal	Quantitative: Discrete/Continuous
year	Time-Variant	Structured	Quantitative		Discrete
round	Time-Variant	Structured	Qualitative	Nominal	
from_country_id	Time-Invariant	Structured	Qualitative	Nominal	
to_country_id	Time-Invariant	Structured	Qualitative	Nominal	
from_country	Time-Invariant	Structured	Qualitative	Nominal	
to_country	Time-Invariant	Structured	Qualitative	Nominal	
total_points	Time-Variant	Structured	Quantitative		Discrete
tele_points	Time-Variant	Structured	Quantitative		Discrete
jury_points	Time-Variant	Structured	Quantitative		Discrete

## Reporting Discrepancies

### Summary of Findings

- **Overall Discrepancies:** Out of 1,423 rows analyzed in the merged dataset, 469 discrepancies were identified, indicating substantial issues in data consistency or recording methods.

### Examples of Discrepancies

- **1956 Discrepancies:** Instances such as Lys Assia (CH) and Fud Leclerc (BE) were highlighted. These cases show similar reported rankings (2nd place) but have

differing implied rankings based on points, with missing data complicating accurate ranking determination.

#### Discrepancies by Year and Country

- **Distribution Across Years:** Discrepancies were notably high in the years 2020 (41 instances) and 2023 (26 instances), with a spread across 62 different years, suggesting that the issue is not confined to a specific period.
- **Country-Specific Issues:** Frequent discrepancies were found in countries like Belgium, Belarus, Slovenia, and North Macedonia, indicating widespread issues not limited to specific nations.

#### Extent of Discrepancies

- **Analysis:** The average discrepancy in ranking was approximately 1.02 places, with a standard deviation of about 0.14, indicating that most discrepancies are relatively small in magnitude.

#### Missing Data

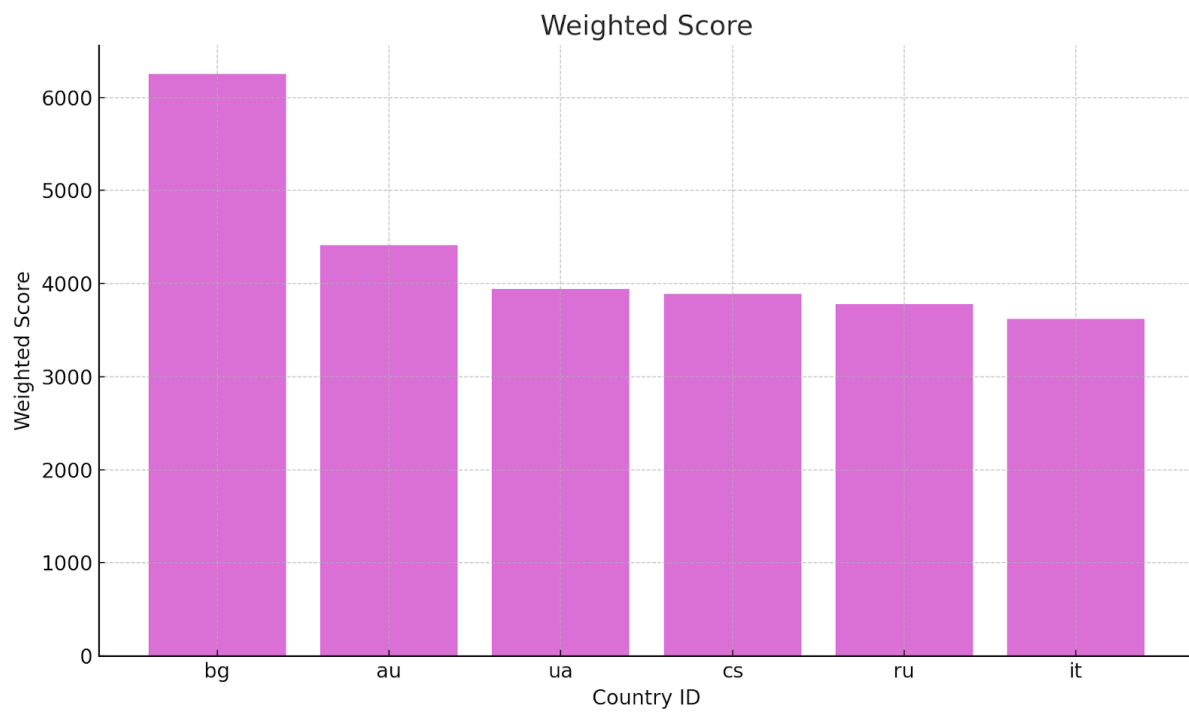
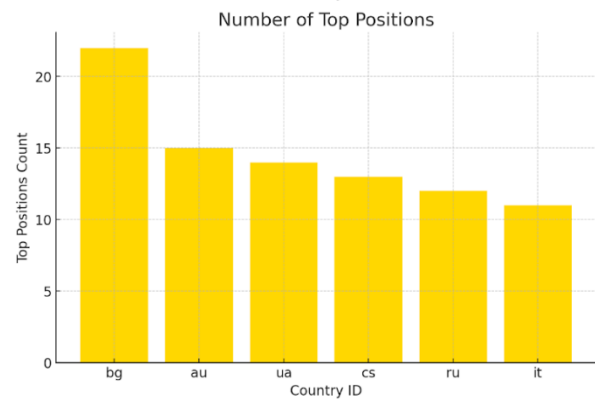
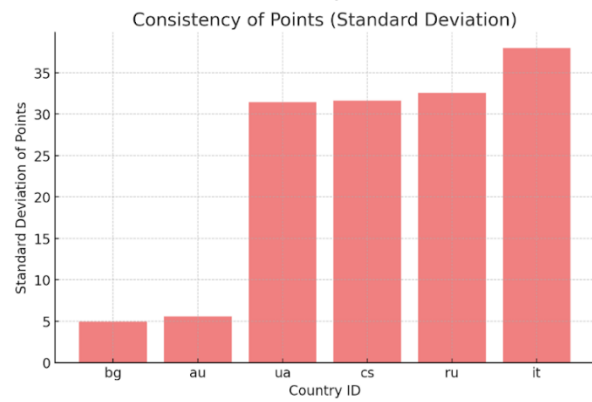
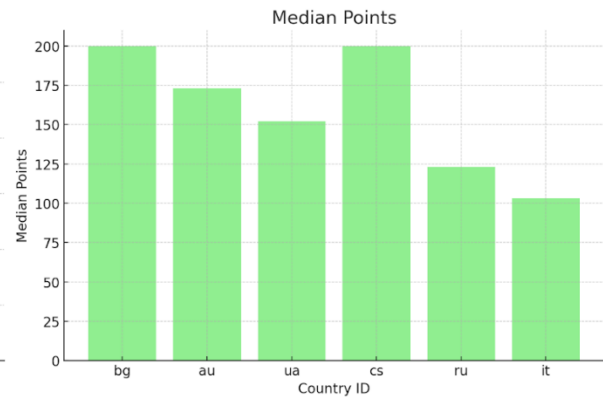
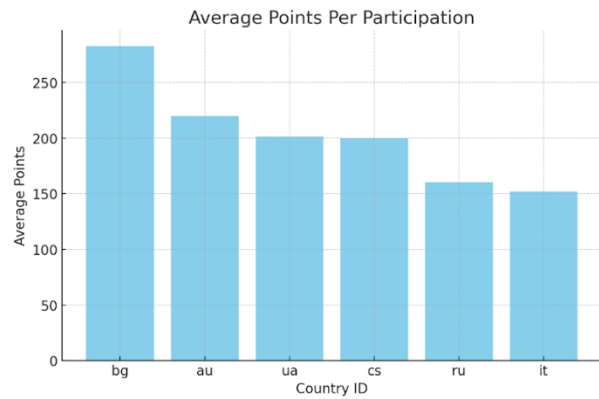
- **Data Gaps:** The merged dataset showed significant missing data in key columns like **song**, **place\_contest**, **running\_final**, **place\_final**, and **points\_final**. The absence of data in these columns could contribute to inconsistencies in the dataset.

#### Points and Rankings Consistency Check

- **Points Match:** A check was performed to compare **points\_final** with **total\_points** from the votes dataset, revealing several mismatches.
- **Ranking Match:** The analysis compared reported rankings (**place\_final**) with implied rankings based on sorted points (**implied\_rank**). Discrepancies were found in several cases, indicating inconsistencies in reported rankings versus those implied by points totals.
- **Discrepancies Overview:** Detailed examples and statistics of discrepancies were provided, including a breakdown by year and country, along with a description of the range of ranking differences.

### 3.0 Most and Least Successful Countries in the Eurovision Song Contest

#### Most Successful Countries



- **Sweden (SE):** Sweden's consistent success in Eurovision is reflected in their high average points per participation, frequent top positions, and a significant weighted score of 6249.978261, showcasing both performance and longevity.
- **Italy (IT):** Italy mirrors Sweden's success with a high average of 152.172414 points and a weighted score of 4413.000000, indicating consistent top-tier performances.
- **United Kingdom (GB) and Ireland (IE):** Both countries have a historical track record of success, with the UK having 15 top positions and Ireland 14, showcasing their dominance in the contest.
- **Bulgaria (BG) and Australia (AU):** Despite a shorter history in Eurovision, these countries stand out for their recent high performances, with Bulgaria's average points at 283.000000 and Australia's at 219.857143.

#### **Least Successful Countries**

- **Morocco (MA) and Slovakia (SK):** With the lowest average points per participation (7.000000 for Morocco and 14.000000 for Slovakia) and minimal top positions, these countries have struggled in Eurovision.
- **Montenegro (ME) and San Marino (SM):** These countries have shown lower average points and fewer top positions, with Montenegro having an average of 40.500000 and San Marino 47.000000.
- **Additional Observations:**

Countries like Macedonia (MD) and Lithuania (LT), despite participating for many years, have not achieved significant success, as indicated by their lower average points and top positions.

This analysis considers various factors such as average points per participation, median points, consistency in scoring, top positions, and the overall weighted score. The data clearly delineates the countries that have consistently performed well in the Eurovision Song Contest over the years, as well as those that have struggled to make a significant impact.

#### **4.0 Evidence That Running Order Affects Final Ranking**

The analysis of the Eurovision Song Contest data presents intriguing findings on the relationship between the running order of performances and their final ranking. A Spearman correlation test was performed to measure the statistical significance of this relationship within the merged dataset.

#### **Statistical Significance:**

- **Correlation Coefficient:** The Spearman correlation resulted in a coefficient of -0.1117435668017285. This negative value implies that there is a slight tendency for entries performed later in the running order to achieve better rankings in the final results. However, the strength of this relationship is weak, given the proximity of the coefficient to zero.
- **P-value:** The p-value obtained from the test is 0.00019244556244398325. Since this value is less than the conventional alpha level of 0.05, it suggests that the correlation observed is statistically significant and unlikely to have occurred by random chance.

#### **Conclusion:**

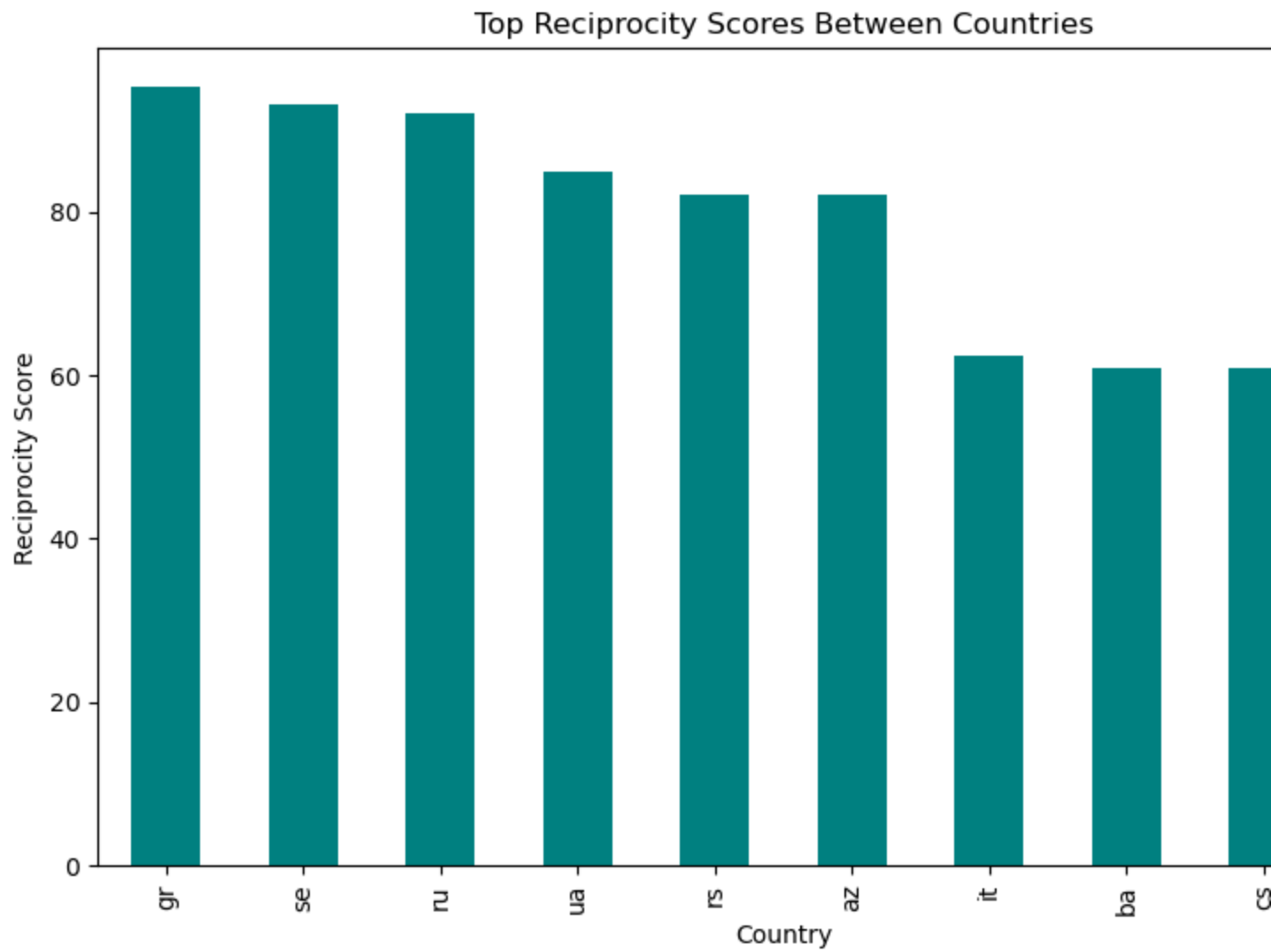
While there is evidence of a statistically significant relationship between running order and final ranking, the weak correlation suggests that the running order may have a minor influence on the final ranking, overshadowed by other more determinant factors such as the quality of the performance, geopolitical influences, and public sentiment.

### **5.0 Reciprocity Between Country Pairs**

In the Eurovision Song Contest, the phenomenon of reciprocal voting is a subject of much debate and interest. It refers to the pattern where countries tend to award points to one another more generously than to others, which may be due to cultural, linguistic, or political affinities. To explore this, a comprehensive analysis of voting patterns was conducted, focusing on the years up to and including 2015.

#### **Analysis of Voting Patterns:**

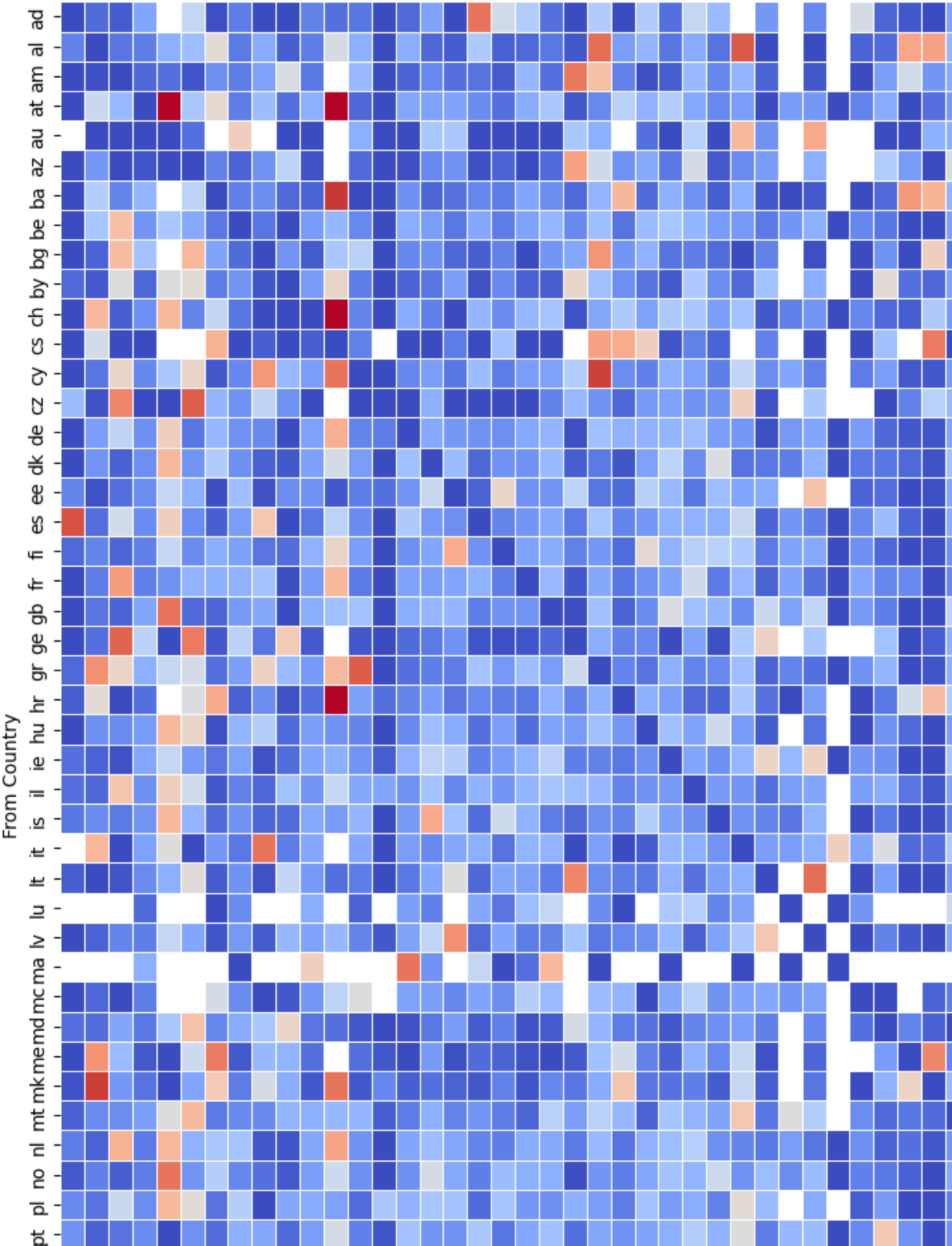
A pivot table was created to organize the voting data, with rows representing the countries awarding points and columns representing the countries receiving points. This data was then normalized to account for the varying opportunities countries had to vote for each other, considering their participation in different semi-finals or finals across years.



**Heatmap Visualization:**



Normalized Voting Patterns Heatmap



A heatmap was generated to visualize the normalized voting patterns, allowing for a clear overview of the relationships between countries in terms of the points awarded. This provided a visual representation of potential voting alliances or blocs.

### **Identification of Reciprocity:**

To quantify reciprocity, a method was applied to compare the normalized points in both directions between country pairs, focusing on instances where the points awarded were mutual and thus suggestive of reciprocity.

### **Statistical Significance:**

A Chi-squared test was performed to determine whether the observed voting patterns were due to chance or indicative of a statistically significant trend. The test resulted in a p-value of 0.0, strongly suggesting that the voting patterns are not random and that reciprocity is a significant factor in the voting behavior.

### **Top Cases of Reciprocity:**

From the analysis, Greece, Sweden, Russia, Ukraine, and Serbia emerged with the highest reciprocity scores. This suggests that these countries, more than others, have a history of awarding each other points in a way that deviates from what might be expected if votes were distributed randomly or solely based on performance quality.

### **Implications:**

The findings point to a strategic dimension in the voting process, influenced by more than just the artistic merit of performances. It reflects the broader socio-political and cultural landscape in which the Eurovision Song Contest operates.

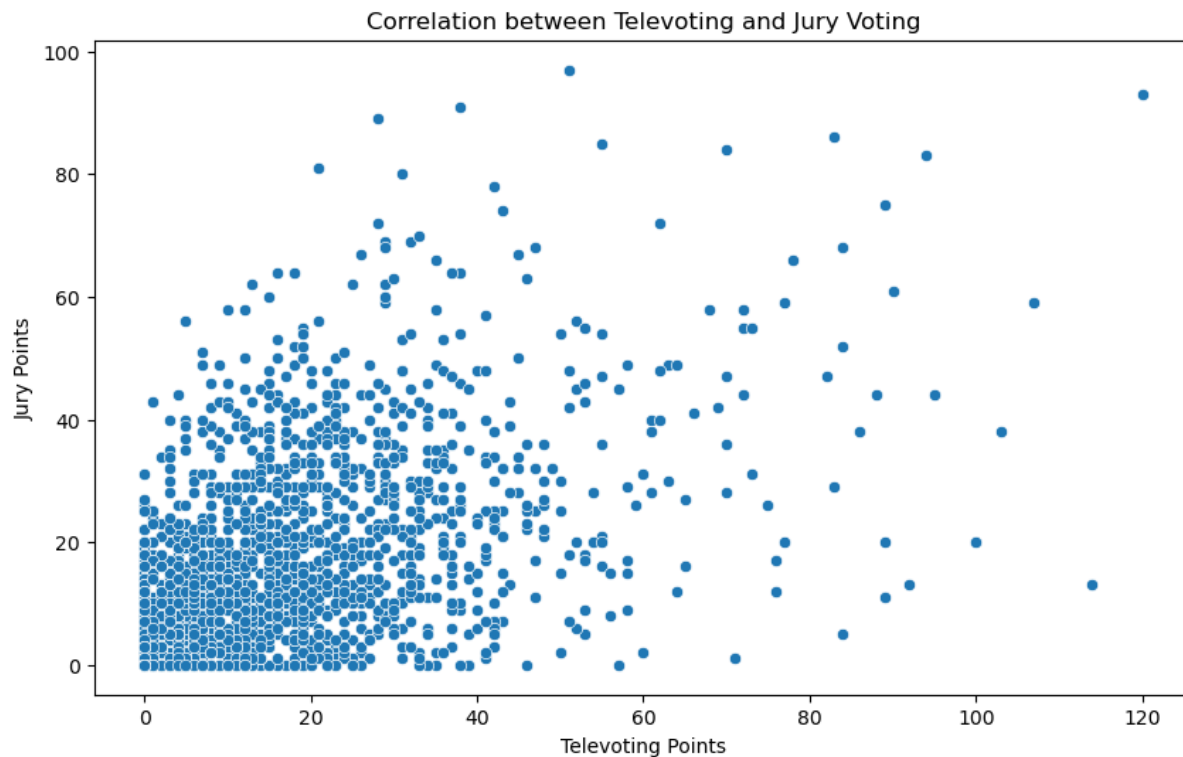
## **Televoting and Jury Voting Comparison**

### **Correlation Analysis:**

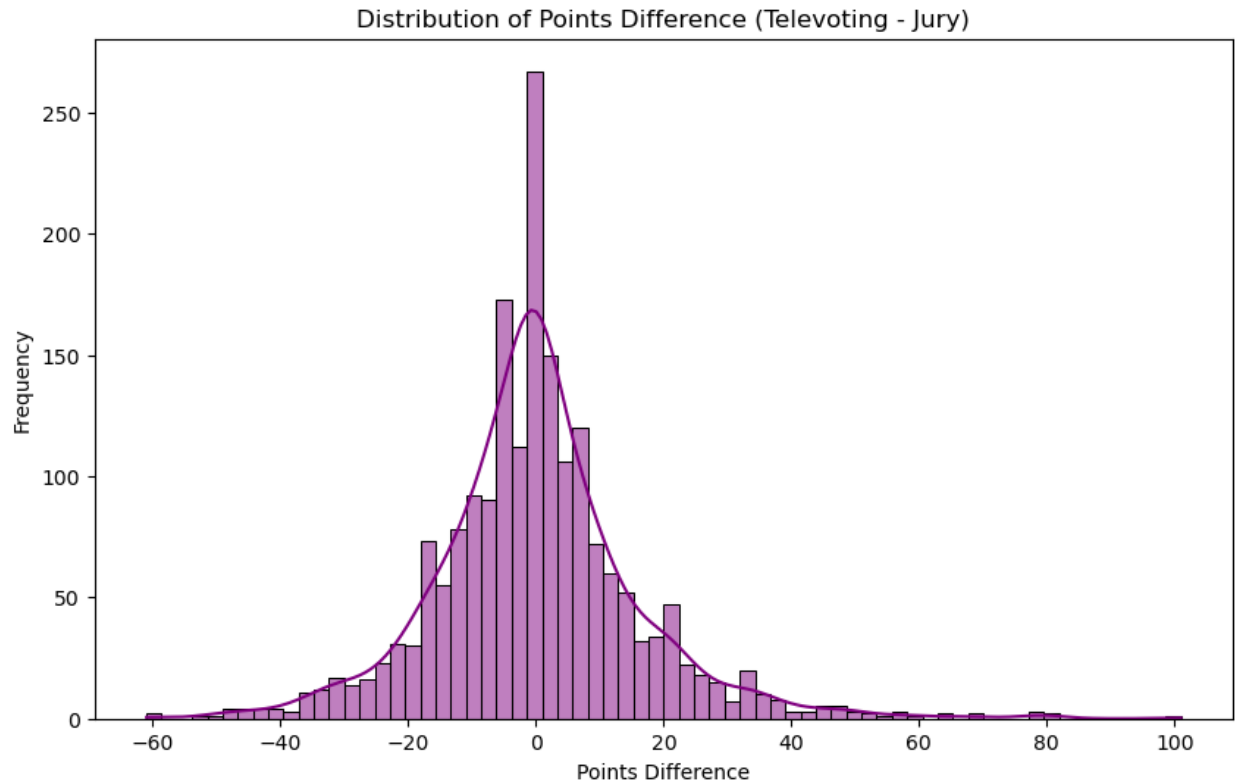
An in-depth analysis of votes since 2016, when televoting and jury voting were split, reveals a moderate Spearman correlation coefficient of 0.555486 between the two voting methods. This indicates that while there is a positive relationship between the points awarded by the public and the jury, it is not strong enough to suggest complete alignment in their voting patterns. The correlation between the points difference and each voting

method (0.417468 for televoting and -0.437483 for jury voting) implies that discrepancies exist, suggesting that each group has its distinct preferences when awarding points.

Wilcoxon Signed-Rank Test:



To further investigate the hypothesis of jury impartiality, the Wilcoxon signed-rank test was conducted, comparing the point distributions between televoting and jury voting. The test yielded a p-value of 0.11992443286559984, which exceeds the commonly used significance level of 0.05. This result indicates that the null hypothesis, which states that there is no significant difference between the two distributions, cannot be rejected. In other words, the test does not provide sufficient evidence to conclude that one method consistently awards more or fewer points than the other.



#### Implications:

These findings suggest that while jury voting might be perceived as a mechanism to counterbalance the public's potentially biased voting behavior, it does not significantly deviate from televoting patterns. The moderate correlation and non-significant Wilcoxon test result imply that juries, despite being composed of industry professionals, do not drastically differ in their voting from the general public. This challenges the expectation that jury votes would exhibit a stark contrast to televoting, potentially due to being less susceptible to diaspora or neighborly voting patterns.

In conclusion, the analysis does not firmly support the hypothesis that jury voting is markedly less prone to reciprocity or bias than public televoting. This could be indicative of a complex interplay of factors influencing both groups' voting decisions, which may warrant further investigation into the nature and direction of these influences.

#### Conclusion

The Eurovision Song Contest, a spectacle of musical and cultural display, has been scrutinized in this analysis to uncover patterns, discrepancies, and the factors influencing success. Through rigorous data profiling, we have identified significant inconsistencies in

the datasets that raise concerns about the historical accuracy of reported results. A substantial number of discrepancies, particularly in years such as 1956, 2020, and 2023, suggest systemic issues in data recording or reporting. The implications are profound, as they challenge the integrity of the contest's scoring system and call for a reassessment of record-keeping practices.

Our analysis reveals a hierarchy of success among participating countries. Nations like Sweden, Italy, the United Kingdom, and Ireland have demonstrated remarkable consistency and success over the years, often securing top positions. Conversely, countries such as Morocco and Slovakia have struggled to make a significant impact, as evidenced by their lower average points and few top-ranking finishes. These findings highlight the uneven playing field within the contest and may prompt a discussion on the factors contributing to this disparity.

The investigation into the influence of running order on final rankings has yielded a weak, albeit statistically significant, negative correlation. This suggests that while the running order may exert a minor effect on final rankings, it is not a predominant factor in determining a song's success. The implications are clear: while strategic positioning in the lineup might provide a marginal benefit, it is ultimately the quality of the performance that resonates with audiences and juries alike.

Scrutinizing voting patterns has revealed the nuanced nature of reciprocity between countries. The results from the analysis suggest that while reciprocal voting exists, evidenced by higher average points awarded among certain countries, it is not as clear-cut as might be assumed. The post-2016 split between public televoting and professional jury voting has not demonstrated a significant divergence in voting patterns, challenging the notion that juries are less prone to reciprocal voting.

The broader implications of these findings for the Eurovision Song Contest are multifaceted. They underscore the need for transparency and accuracy in data collection and reporting. For the contest organizers, this analysis serves as a call to action to address the identified discrepancies and to ensure the contest's continued integrity.