An Analysis of Voting Systems and Participant Selection in Produce 101 and Boys Planet

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***Abstract*—This paper offers an in-depth analysis of the voting systems used in two popular Korean reality survival shows, Produce 101 and Boys Planet. It covers the evolution of voting systems from the domestically oriented Produce 101 to the more inclusive Boys Planet, which enabled global fan participation. The paper examines how the voting system influences the final rankings and results of these shows, using set theory, relations, functions, combinatorics, and algorithmic complexity in discrete mathematics. The comparison between the two systems highlights the impact of regional voting weight, transparency, and global fan engagement. Using real-world vote data from the final episode's one-pick voting phase, this paper simulates and explains how even a moderate difference in global support can surpass domestic dominance due to regional weightings. The voter-contestant pairs, modeled as Cartesian products $V \times C$, apply a 50:50 weighted aggregation to demonstrate how Zhang Hao's 11.32% global vote share surpassed Sung Hanbin's 10.23% Korean votes, yielding final scores of 9.47 vs. 8.84.**

This paper also provides further computational reasoning for Zhang Hao's victory on Boys Planet by investigating the impacts of the global voting system, contestant media exposure, and strategic fan coordination. It shows how much international support can overcome constant local popularity. The findings emphasize the importance of fairness and transparency in voting systems, particularly as global fandoms continue to shape the K-pop industry.

Keywords*—K-pop, Boys Planet, Produce 101, survival shows, voting system, set theory, relations, functions, combinatorics, algorithmic complexity, discrete mathematics, Mnet, Zhang Hao, Sung Hanbin

I. INTRODUCTION

Boys Planet is a reality survival show produced by Mnet, airing from February 2 to April 20, 2023, every Thursday at 20:50 (KST). The show aimed to form a nine-member group known as Zerobaseone (ZB1) from a selection of trainees who competed in various challenges. Through the Mnet Plus mobile app, viewers cast votes for their preferred trainees, and the top nine candidates with the most votes are guaranteed places in the debut group.[1]

In the final episode, Zhang Hao, a contestant from China, achieved first place in the debut lineup, surpassing Sung Hanbin, who had consistently ranked first throughout the competition. Zhang Hao's victory was especially remarkable because it was the first time in the history of such programs that a trainee from outside of Korea reached the highest rank, illustrating the rising global influence of K-pop.[8]

Differences in the voting system between Boys Planet and its predecessor, Produce 101, tend to be the reason for this unexpected result. Boys Planet introduced a global voting mechanism that allowed fans from all over the world to participate, whereas Produce 101 restricted voting to Korean audiences.[2] International fans were able to participate as a result of this expansion, which broadened the contestants' support base. Boys Planet further enhanced accountability by involving Samil PwC, an independent third-party audit, which increased the credibility and fairness of the voting process.[3] Restoring the public's trust and enhancing the integrity of the voting system were the objectives of this action as a response to the Produce 101 vote manipulation scandals.

The one-pick voting method used in the final round of Boys Planet is the primary focus of this study. It is essential to note that Mnet did not publish comprehensive, official vote breakdowns. The information and vote count in this paper were gathered from fan-led analyses and publicly accessible announcements. The analysis should be considered an exploratory and computational process rather than an exact scientific examination, even though it is based on actual data.

Thus, this paper aims to explore whether the differences in voting system design, particularly the inclusion of global votes, can explain the unexpected outcomes in Boys Planet. Using discrete mathematical principles such as set theory, relations, functions, combinatorics, and algorithmic complexity, this paper will analyze how voter behavior, vote aggregation, and the voting structure influenced the final rankings. The paper will investigate the influence of global participation on the outcomes by emphasizing the overall structure of the voting system, the ranking process, and a detailed case analysis of Zhang Hao's unexpected first-place finish.

II. THEORETICAL FRAMEWORK

A. Korean Reality Survival Shows

As a platform for trainees to compete for a position in a new K-pop group, Korean reality survival shows have grown to be an essential part of the K-pop industry. These shows have gained widespread popularity as they offer fans the opportunity to vote for their favorite trainees and influence the debut lineup. Among the most well-known of these programs are the multi-season Produce 101 and, more recently, Boys Planet. These shows usually consist of a series of challenges and performances in which contestants showcase their singing, dancing, and rapping skills. The show's format enables viewer interaction, as audience votes play a crucial role in determining which contestants remain in the competition. As the competition progresses, trainees are eliminated, with the final group formed from the most popular contestants. The format encourages intense competition, and the final debut groups often go on to achieve great success in the K-pop industry. These shows offer fans an exciting way to engage with K-pop while addressing a range of issues, particularly voting fairness and transparency, in response to the controversies that have surfaced in some seasons.[5]

B. Boys Planet

Figure 1. Boys Planet Logo
Source: https://mydramalist.com/719603-boys-planet

Boys Planet is a K-pop reality survival show that premiered in 2023, representing a shift in how survival shows incorporate global fans into the voting process.[4] With Boys Planet, fans from all over the world were able to participate through votes, giving viewers from other countries an active part in the result, unlike Produce 101, which only allowed Korean viewers to vote. The show features trainees from various countries who compete for a spot in the final debut group, Zerobaseone (ZB1). Similar to Produce 101, contestants perform challenges and are evaluated based on their skills, with eliminations taking place throughout the show. The final top nine contestants, based on both Korean and global votes, form the new group. Recognizing the importance of global K-pop fandom and the increasing influence of international fans, Boys Planet marks a significant shift from the previous format. This shift marks the globalization of K-pop and presents a more inclusive voting system that allows trainees from other countries to gain support from their respective country fan bases. The show's format and the global voting system emphasize the movement towards a more international and diverse representation of K-pop idols.[1]

C. Produce 101

Figure 2. Produce 101 All Seasons
Source: https://kbopped.com/wp-content/uploads/2020/07/produce-series.jpg?w=656&h=300&crop=1

The Produce 101 franchise is one of the most well-known survival shows in the K-pop industry. Produce 101, which debuted in 2016, features 101 trainees from different entertainment agencies competing for a position in the debut group, I.O.I. The format of the show involved weekly challenges and public voting, where viewers voted for their favorite trainees using mobile apps. This voting system, which was exclusive to Korean viewers, determined which contestants would continue in the competition, ultimately leading to the formation of a group from the highest-ranked contestants. The success of Produce 101 led to multiple follow-up seasons, including Produce 101 Season 2 (which formed Wanna One), Produce 48 (forming IZ*ONE), and Produce X 101 (which formed X1). Each season followed a similar structure, and public votes heavily influenced the results, with the final group being determined by viewer votes. However, despite its success, Produce 101 was involved in a vote-manipulation scandal, in which voting data was allegedly manipulated by Ahn Joon Young, the producer of Produce 101, to benefit particular parties. This scandal raised significant concerns regarding the integrity and fairness of the voting process, leading to significant backlash and legal action against the producers. As a result, the series was discontinued, their newly formed boy group (X1) disbanded within four months after debut, and their predecessor (IZ*ONE) was caught in a four-month hiatus, marking a controversial end to what was once a beloved show.[2]

D. Voting System

Boys Planet and Produce 101 have slightly different voting systems, each reflecting the changing dynamics of K-pop's globalization. Since only Korean viewers could vote in Produce 101, domestic preferences had a significant impact on the outcome. This system benefits contestants who are more popular

in Korea, often overshadowing any support that foreign trainees might be able to garner. Boys Planet, on the other hand, implemented a 50:50 voting system in which votes from both Korean and international voters were equally weighted.[7] The growing influence of international fans, who proceed to make up a significant proportion of the K-pop fan base, led to this change. Boys Planet's more inclusive voting system, which provided international trainees with the same level of support as Korean trainees, resulted in a more diverse final group lineup. The inclusion of global voting on Boys Planet suggests a shift toward a more equal and balanced voting system, particularly since K-pop has become a global phenomenon. The comparison of the systems illustrates how K-pop reality shows have evolved, with Produce 101 focusing on domestic voting in Korea and Boys Planet embracing the internationalization of K-pop. A new era in K-pop survival show history began with the introduction of global voting in Boys Planet, which introduced a more global and representative method of fan participation in the voting process.[9]

E. Set Theory

Set theory is a foundational area in discrete mathematics concerned with the study of sets, which are well-defined collections of distinct objects.[10] In the context of the Boys Planet voting system, we define the following sets:

$$V = \{v_1, v_2, \dots, v_n\}$$

V is the set of all voters. Each v_i represents individual voter, where n is the total number of unique voters.

$$C = \{c_1, c_2, \dots, c_m\}$$

C is the set of all contestants in the competition. Here, m denotes the number of contestants competing for a place in the final lineup.

In this study, each vote cast by a voter is represented as a pair in the Cartesian product $V \times C$, where each pair (v_i, c_j) indicates that voter v_i has voted for contestant c_j.

Membership in a set, denoted by $\in$, explains each member listed in it.

$x \in A$: x is an element of set A

$x \notin A$: x is not an element of set A

The cardinality of a set A, denoted as $|A|$, represents the number of unique elements in that set. In the voting context, $|V|$ represents the total number of unique voters. Meanwhile, $|C|$ represents the total number of contestants.

Set operations consists of union, intersection, and difference.

$$V_1 \cup V_2$$

Union combines the elements of sets $V1$ and $V2$ without duplication. This could represent the combined set of voters from two regions, such as Korea and Global.

$$V_K \cap V_G$$

Intersection finds the common contestants who received votes from both the Korean and Global regions, highlighting contestants with broad appeal.

$$V_K - V_G$$

Difference represents voters who exclusively cast votes from the Korean region and whose votes contributed only to the Korean regional tally, emphasizing the distinct regional voter bases.[11]

F. Relations and Functions

In mathematics, a function is a relation between two sets that associates each element from the first set with exactly one element in the second set.[12]

For the final one-pick voting round, each voter casts a vote for their single preferred contestant. We can represent this mapping using a function:

$$f: V \to C$$

where $f(v_i) = c_j$ indicates that voter v_i cast their vote for contestant c_j.[13]

The relationship between the votes and the final ranking of contestants can be modeled as a function that maps contestants to their rank based on the number of votes they receive:

$$g: C \to N$$

where $g(c_j)$ represents the rank of contestant c_j, and N is the set of natural numbers (representing the rank order based on votes).

A binary relation allows for more general relationships between two sets. In this case, we can define:

$$R = \{(v_i, c_j) \mid v_i \in V, c_j \in C\}$$

where R represents all pairs of voters and the contestants they voted for. The inverse relation R^{-1} would be:

$$R^{-1} = \{(c_j, v_i) \mid c_j \in C, v_i \in V\}$$

which maps each contestant to the voters who voted for them.[13]

Operations in relations and functions consists of union and intersection. The union of two relations $R_1 \cup R_2$ would represent a scenario where the voting behavior of two regions is combined. The intersection of two relations $R_1 \cap R_2$ could represent voters who cast votes in both the Korean and Global regions.

G. Combinatorics

Combinatorics is a branch of discrete mathematics that deals with counting, arranging, and selecting elements from a set. In the context of voting systems, combinatorics is essential to understand the possible configurations or selections voters can make under a given voting rule.

There are two main principles in combinatorics, that is permutation and combination.

Permutation refers to the number of ways to arrange r elements out of n when order matters. This is relevant in multi-pick voting systems where voters rank their preferences.

$$P(n,r) = \frac{n!}{(n-r)!}$$

where n is the total number of candidates and r is the number selected.

Combination refers to the number of ways to choose r elements out of n when order does not matter, as in the one-pick system used in the final episode of Boys Planet.

$$C(n,r) = \frac{n!}{r!\,(n-r)!}$$

In the final voting round of Boys Planet, each voter was allowed to select only one trainee (one-pick), making it a simple case of single-choice combinations. For n voters and m contestants, the one-pick system has $C(m,1) = m$ possible choices per voter. However, when evaluating the impact of regional vote weighting, combinatorics becomes useful in modeling how the number of voters from different regions and the strategic distribution of those votes could affect the final outcome. This includes estimating the number of voting configurations that would lead to different ranking scenarios.[14]

H. Algorithmic Complexity

Algorithmic complexity concerns the computational resources needed to solve a problem, often measured by time or space relative to input size.[15] In the context of the vote aggregation model for Boys Planet, calculating each contestant's final score based on weighted regional votes can be done in linear time, $O(n)$, where n is the number of contestants. This step simply involves multiplying the vote ratios by the assigned weights for each region, which results in a direct computation for each contestant.[16]

However, once the scores are calculated, we need to rank the contestants based on their scores. Sorting the contestants by their scores is required, and this operation generally has a time complexity of $O(n\ log\ n)$, assuming the use of efficient sorting algorithms like Timsort. However, in this paper, we implemented Bubble Sort, which has a time complexity of $O(n^2)$. Thus, the overall complexity of the sorting step increases.[16]

I. Weighted Aggregation Model

The Boys Planet voting system uses a weighted aggregation model, where the votes from different regions (Korea and Global) are weighted equally.[6] This approach is meant to ensure that both Korean and international audiences have an equal influence on the final outcome, despite the global audience being larger in number.

According to official Mnet information and fan analysis, the weight for Korean votes wKR and Global votes $wGlobal$ is set as:

$$wKR = 0.5$$

$$wGlobal = 0.5$$

These weights ensure that both regions contribute equally to the final score.

For each contestant c_j, the normalized votes in each region are calculated as:

$$v_r(c_j) = \frac{votes\ for\ contestants\ c_j\ in\ region\ r}{total\ votes\ in\ region\ r}$$

where $r \in \{KR, Global\}$ represents the two regions.

The final score $S(c_j)$ for each contestant is then computed as the weighted sum of their normalized votes across both regions:

$$S(c_j) = (wKR \times vKR(c_j)) + (wGlobal \times vGlobal(c_j))$$

This final score determines the contestant's rank.

III. IMPLEMENTATION: EXPLAINING ZHANG HAO'S VICTORY

This section will break down some possibilities behind Zhang Hao's victory using discrete mathematics models and calculations.

A. Regional Support and Weighted Voting Simulation

In order to analyze how Zhang Hao's victory can be explained through the Boys Planet voting system, we begin by simulating how the weighted regional votes contribute to the final scores. The voting system used in Boys Planet gives equal weight to both Korean and Global votes, each weighted at 50%. We can express this as follows:

- Korean Votes: These represent the votes cast by Korean viewers and are normalized by dividing the number of votes a contestant received in Korea by the total number of votes cast in Korea.
- Global Votes: These represent the votes cast by international viewers, normalized similarly.

1. Step 1: Data Preparation

   Let us consider the normalized votes for two top contestants (Zhang Hao and Sung Hanbin) based on fan analysis and official vote counts:

   - Zhang Hao: 167,210 Korean votes and 929,685 Global votes.
   - Sung Hanbin: 224,477 Korean votes and 612,823 Global votes.

   The total number of votes from each region is as follows:

   - Total Korean votes: 2,194,931
   - Total Global votes: 8,212,806

2. Step 2: Normalizing the Votes

   First, we calculate the normalized vote shares for both contestants in each region:

Zhang Hao's Korean Vote Percentage:

$$\frac{167{,}210}{2{,}194{,}931} = \approx 0.0762\ (7.62\%)$$

Zhang Hao's Global Vote Percentage:

$$\frac{929{,}685}{8{,}212{,}806} = \approx 0.1132\ (11.32\%)$$

Sung Hanbin's Korean Vote Percentage:

$$\frac{224{,}477}{2{,}194{,}931} = \approx 0.1023\ (10.23\%)$$

Sung Hanbin's Global Vote Percentage:

$$\frac{612{,}823}{8{,}212{,}806} = \approx 0.0746\ (7.46\%)$$

3. Step 3: Calculating the Weighted Scores

Now, applying the 50:50 weight for both Korean and Global votes:

Zhang Hao's Score:

$$0.5 \times 0.0762 + 0.5 \times 0.1132 = 0.0947$$

Sung Hanbin's Score:

$$0.5 \times 0.1023 + 0.5 \times 0.0746 = 0.0884$$

Table 1. Calculated Weighted Scores for Each Contestant

Contestant	Zhang Hao	Sung Hanbin
Korean Votes (%)	7.62	10.23
Global Votes (%)	11.32	7.46
Weighted Score	9.47	8.84

Thus, Zhang Hao's weighted score is 0.0947, while Sung Hanbin's is 0.0884. Despite Sung Hanbin's higher Korean vote share, Zhang Hao's larger proportion of Global votes resulted in a higher final score, which explains his victory.

B. Real-Data Model: Using Actual Votes

Now, we apply the actual vote data from the final announcement. The total number of votes for each contestant is provided, and we can apply the same method as above to calculate the final weighted scores. With total Korean votes = 2,194,931 and global votes = 8,212,806.

최종순위	이름	총점	G:K 추산	K득표	G득표	K순위	G순위
1	장하오	1998154	5.56	167210	929685	4	1
2	성한빈	1888414	2.73	224477	612823	1	6
3	석매튜	1702174	6.47	130061	841495	9	2
4	리키	1572089	4.45	148837	662324	5	5
5	박건욱	1386039	4.21	135059	568597	8	7
6	김태래	1349595	1.82	185511	337631	2	13
7	김규빈	1346105	1.95	180989	352928	3	11
8	김지웅	1338984	3.34	145938	487434	6	8
9	한유진	1196622	3.04	135980	413379	7	9
10	제이	1080505	22.3	32867.1	732936	17	3
11	박한빈	1076065	2.82	126225	355953	10	10
12	케이타	1029999	22.12	31546.7	697812	18	4
13	이희택	935254	3.31	102353	338790	12	12
14	금준현	848986	1.97	113767	224121	11	15
15	이정현	718706	1.66	101584	168629	13	16
16	유승언	613963	1.45	90123	130678	14	17
17	나캠든	601198	1.43	88574.3	126661	15	18
18	윤종우	557811	4.29	53829.8	230930	16	14
		21240663		2194931	8212806		

Figure 3. Calculated Weighted Votes for the Final Lineup
Source: https://www.reddit.com/r/BoysPlanet/comments/12v0y3f/calculated_korean_and_international_votes_for_the/

Zhang Hao: 167,210 Korean votes and 929,685 Global votes.

- Total votes = 1,999,154
- Korean vote percentage = $\frac{167{,}210}{2{,}194{,}931} = 7.62\%$
- Global vote percentage = $\frac{929{,}685}{8{,}212{,}806} = 11.32\%$
- Score = $0.5 \times 7.62 + 0.5 \times 11.32 = 9.47$

Sung Hanbin: 224,477 Korean votes and 612,823 Global votes.

- Total votes = 1,884,414
- Korean vote percentage = $\frac{224{,}477}{2{,}194{,}931} = 10.23\%$
- Global vote percentage = $\frac{612{,}823}{8{,}212{,}806} = 7.46\%$
- Score = $0.5 \times 10.23 + 0.5 \times 7.46 = 8.84$

Despite being behind in Korea, Zhang Hao overtakes Hanbin due to his dominant global performance. Since the global voting pool is larger than the Korean one, even slight differences in global votes can significantly influence the outcomes. This explains why contestants like Zhang Hao, who received a larger proportion of their votes from global fans, were able to surpass other contestants, even if they had fewer votes in Korea.

C. Algorithmic Complexity in Vote Aggregation

The vote aggregation process in Boys Planet requires computing the final score for each trainee based on regionally weighted votes. This can be modeled using a simple algorithm, and its computational complexity can be analyzed using standard Big-O notation.

The Python Program for this model is as follows:

```
contestants = ['Zhang Hao', 'Sung Hanbin']
weights = {'KR': 0.5, 'Global': 0.5}

votes = {
'KR': {'Zhang Hao': 167210, 'Sung Hanbin': 224477},
'Global': {'Zhang Hao': 929685, 'Sung Hanbin': 612823}
}

total_kr = 2194931
total_global = 8212806

scores = {}
for c in contestants:
  k_ratio = votes['KR'][c] / total_kr
  g_ratio = votes['Global'][c] / total_global
  score = weights['KR'] * k_ratio + weights['Global'] *
  g_ratio
  scores[c] = round(score * 100, 4)

scores_list = list(scores.items())
for i in range(len(scores_list)):
  for j in range(0, len(scores_list) - i - 1):
    if scores_list[j][1] < scores_list[j + 1][1]:
      scores_list[j], scores_list[j + 1] = scores_list[j + 1],
      scores_list[j]

print(scores_list)
```

The output of this program would be:

[('Zhang Hao', 9.469), ('Sung Hanbin', 8.8444)]

Now, we would like to calculate the time complexity of the program.

Let n denote the number of trainees. The function calculate_weighted_score runs in constant time would be $O(1)$. The rank_trainees function includes two main steps:

- Computes scores for each trainee: $O(n)$
- Sorting the trainees by score: Since we are using Bubble Sort here, which has a time complexity of $O(n^2)$ in the worst case, the sorting step will take $O(n^2)$.

Therefore, the total time complexity of the vote aggregation and ranking process is:

$$T(n) = O(n^2)$$

For a larger voting scale, let $T(n,m)$ denote the time complexity of the algorithm, where n is the number of votes and m is the number of contestants. The algorithm performs vote counting in linear time $O(n)$ and sorting in $O(m^2)$ due to Bubble Sort. Therefore, the total time complexity is:

$$T(n,m) = O(n + m^2)$$

This indicates that, even though Bubble Sort is not as efficient as more advanced sorting algorithms like Quick Sort or Merge Sort, the algorithm remains simple for smaller datasets. However, its performance becomes suboptimal as the number of contestants (m) grows, and more efficient sorting algorithms would be necessary for large-scale voting scenarios.

D. Media Exposure and Screentime

A significant factor that influenced Zhang Hao's ranking is the impact of media exposure. Mnet frequently showcased Zhang Hao alongside frontrunners like Sung Hanbin, giving him more screen time and visibility. This increased exposure likely led to a stronger emotional connection with international viewers, boosting his support.

In mathematical terms, we can model this as a stronger relational graph, where the exposure E of a contestant c_j increases the likelihood that voter v_i will cast their vote for c_j. This relational exposure can be represented as:

$$E = \{(vi, cj)\}$$

where viewer v_i influenced by visual exposure to contestant c_j.

This suggests that the visibility Zhang Hao received likely increased his appeal and vote share, especially in international regions.

E. Strategic Voting and Fan Coordination

International fans, particularly from Japan, China, Indonesia, and other regions, often coordinate their votes to boost specific contestants. This is an example of strategic voting, where fans focus their efforts on a particular contestant, ensuring that their votes are concentrated to help that contestant reach the top spots.

In terms of mathematical modeling, strategic voting can be viewed as organizing votes into subsets and calculating how these concentrated votes can impact overall rankings. Fans' coordinated efforts may have led to a higher concentration of votes for Zhang Hao in regions like China, which further explains his final victory.

F. Voter Consistency and Casual Support

Zhang Hao's rise in the rankings can also be attributed to his ability to attract casual support, especially from international viewers who may not have voted consistently throughout the competition. Voters who join later in the competition or who were not initially fans can have a significant impact if their support is large enough, especially in the final rounds.

This phenomenon can be modeled as a volatility in voter preferences. In discrete mathematical terms, this can be represented by shifting relational patterns over time, where R_t represents the set of voters at time t, and we look at the overlap between R_t and R_{t+1} (voter behavior across episodes).

G. National Representation and Identity

Zhang Hao, as the highest-ranking Chinese contestant in the top nine, also benefited from identity-based support. While he

was not the only Chinese trainee to debut, his consistent performance and prominence throughout the show made him a symbolic figure for national representation. Fans from China, and likely from other countries with significant Chinese communities, were particularly motivated to support him as a matter of cultural and national pride. This sense of representation in a global context likely contributed to a strong and organized voting base, which played a crucial role in elevating his final score, especially considering his Korean votes were less dominant than those of other contestants.

In set theory terms, we can represent this support as a subset $V_{CN} \subset V_{Global}$, where Chinese voters represent a distinct and impactful portion of the international voting pool. The high mobilization of this subset may have produced a disproportionately large contribution to Zhang Hao's final weighted score.

IV. Conclusion

This study shows that the unexpected victory of Zhang Hao in Boys Planet can be explained through a detailed application of discrete mathematics, specifically using concepts from set theory, relations, and functions. By implementing the 50:50 regional vote weighting system, where both Korean and Global votes are given equal importance, we can see how global support can outweigh local dominance despite a smaller domestic support base. Even though Sung Hanbin performed better in Korea, the analysis showed that Zhang Hao's larger percentage of worldwide votes had a major influence on his final ranking. This shows a crucial aspect of the voting process: regional weightings can significantly impact results, especially when one region has a significantly larger number of supporters.

The detailed breakdown of voting behavior also highlights the importance of media exposure, as contestants who receive more visibility on the show tend to form stronger emotional connections with the audience, thereby influencing their voting patterns. Additionally, strategic voting by fan groups, especially from international communities, played a role in concentrating support for Zhang Hao, further tipping the scales in his favor.

Ultimately, this analysis emphasizes how complicated voting processes are, as demonstrated by reality programs such as Boys Planet, where variables other than vote totals and mathematical models can affect results. The results of this study could be used to recommend changes to voting systems in the future and are essential for comprehending how globalization affects reality show competitions and media.

Video Link at Youtube

Here is the YouTube video explanation about this paper:

https://youtu.be/e-9JSQK9BcY

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STATEMENT

I hereby declare that this paper is my own writing, not an adaptation or translation of someone else's paper, and not plagiarized.

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