Is there a strategy to win every time at the board game 7Wonders?

Author: Lucile Lapray, Nycia Pradel-Fernandes
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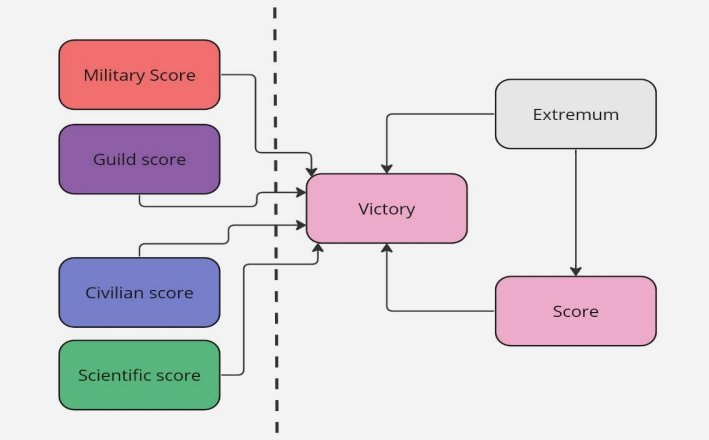
1. Introduction

Since humankind decided to have competition in all sorts of domains, he created the need to play against each other. Nowadays, one of its most popular forms is the board game. Primed of several tens of awards, 7Wonders is none other than the most popular among the modern board games. Based on multiscale strategy, it has the privilege to offer a great variety of winning possibilities. But is there a scheme to those possibilities ?

Does pushing certain strategies to the extreme increase the likelihood of winning?



We anticipate that if this is the case, we should observe:

- ***Prediction 1****: extreme scores tend to lead to victory.*
- ***Prediction 2****: Among the strategies, one is better than the rest when pushed to the extreme.*

2. Datas

Combination of three sources into merged dataset: one online dataset from https://alt-gr.tech/pages/seven-wonders, two created with hand-reported data from two scorecards from 7Wonders boxes (Lapray and Pradel families).

3. Methods

To test predictions 1 we performed a multivariate ordinal regression and a simple linear regression comparing (1) the Victory rate depending on scores and extremum strategies, and

then we operated an ANOVA to perceive the differences between each of the strategies, combined with analysis of victory depending on those extreme strategies.

4. Results

Extreme strategies have higher victory rate and scores in the overall than those who doesn't present focus on each of the category (see Figure 6). This difference is significant ($t = 6.533$, $p < 0.001$). Moreover, strategies with higher gap strength are more susceptible to granted the victory ($\lceil_1 = 5.1$, $\lceil_2 = 5.3$, $\lceil_3 = 5.5$, see Figures 2). And this difference is significant ($z = 18.3$, $p > 0.002$).

Figure 6

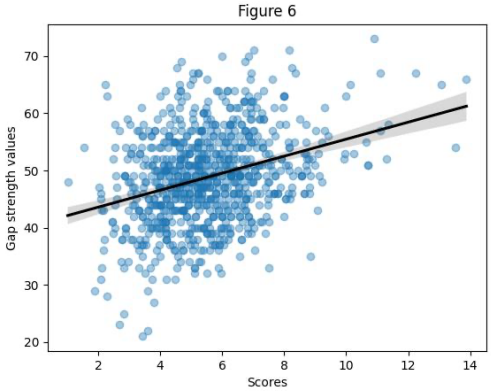


Figure 2

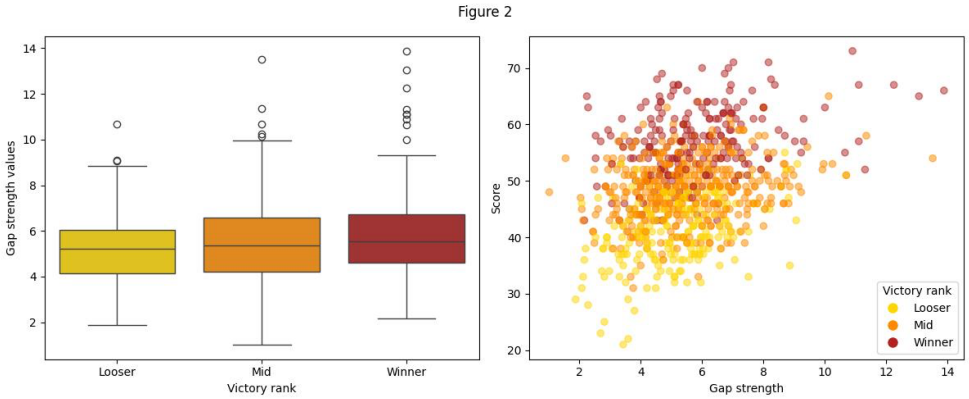


Figure 8

Strategy	N	Mean
Civilian	116	1.0259
Guilds	64	1.3594
Military	203	1.4483
Scientific	52	1.2885

Each extreme strategy also have is own influence over the score and the winning rate, and Military and Guilds show better results than others (see figure 8). Once more, the difference between is significant ($t = 10.21$, $p > 0.001$).

5. Conclusion

Our results indicate that **strong perseverance in the same strategy often pay back**. It thus seems that the more you use Military strategy (one that you can easily combine with others) the more it bring victory.

It should be noted that this study only have to purpose a « light » approach of the game. It's possible to win without listening our analysis, even if the chances are low. Playing 7 Wonders should always be a pleasure, and the multiple dimensions of the game offer a really great difference between each party.

In the end, if you truly want to overcome every one of your opponents, the better you can do is cheating (the authors insist to prevent that cheating is a **really bad way** to play games)!