



Scraping for Games

What makes a board game popular?



Project idea

- What makes a board game “popular”?
- Can we predict how hobbyists will rate a game?
- BoardGameGeek





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The 7th Continent

Four Against
Darkness

Gloomhaven

Thanos Rising:
Avengers Infinity
War

Homesteaders

Terraforming Mars

Rising Sun

Scythe

Feudum

Azul

Spirit Island

Darklight:
Memento Mori

Gaia Project

Arkham Horror:
The Card Game

Hellboy: The Board
Game

The Mind

The City of Kings

Hengist

Court of the Dead:
Mourners Call

Kingdom Death:
Monster

Cauldron

Gloomhaven:
Forgotten Circles

Zombicide: Invader

Great Western Trail

Babington

1, 2, 3, 4, 5 Next » [983]

Board Game
Rank ▲

Title

Geek Rating

Avg Rating

Num Voters

Shop

1



Gloomhaven (2017)

8.615

9.00

14391

List: \$140.00
New Amazon: **\$194.88**
[Shop]

2



Pandemic Legacy: Season 1 (2015)

8.502

8.66

25447

List: \$69.99
New Amazon: **\$48.76**
[Shop]

3



Through the Ages: A New Story of Civilization (2015)

8.310

8.63

11873

List: \$69.95
Lowest Amazon: **\$39.99**
New Amazon: **\$50.97**
iOS App: **\$9.99**
[Shop]

4



Twilight Struggle (2005)

8.201

8.35

30886

List: \$64.99
Lowest Amazon: **\$29.00**
New Amazon: **\$45.98**
iOS App: **\$9.99**
[Shop]

5



Terraforming Mars (2016)

8.193

8.38

24522

List: \$69.95
Lowest Amazon: **\$42.99**
New Amazon: **\$45.49**
[Shop]

6



Star Wars: Rebellion (2016)

8.168

8.49

12927

List: \$99.95
Lowest Amazon: **\$75.00**
New Amazon: **\$79.96**
[Shop]

7



Scythe (2016)

8.105

8.30

28074

List: \$80.00
Lowest Amazon: **\$57.32**
New Amazon: **\$57.32**
[Shop]

URLs



THE HOTNESS

GAMES

- Four Against Darkness**
2016 · Rank: 3933
- The 7th Continent**
2017 · Rank: 13
- Gloomhaven**
2017 · Rank: 1
- Homesteaders**
2009 · Rank: 491
- Hellboy: The Board Game**
- Thanos Rising: Avengers...**
2018 · Rank: 5916
- Terraforming Mars**
2016 · Rank: 5
- Rising Sun**
2018 · Rank: 64
- Scythe**
2016 · Rank: 7
- Azul**
2017 · Rank: 47
- Feudum**
2018 · Rank: 2063
- Arkham Horror: The Card Game**
2016 · Rank: 19



RANK: OVERALL 6 THEMATIC 3 STRATEGY 6

8.5

Star Wars: Rebellion (2016)13K Ratings & 2.1K Comments · [GeekBuddy Analysis](#)**2-4 Players**

Community: 2, 4 — Best: 2

180-240 Min

Playing Time

Age: 14+

Community: 12+

Weight: 3.63 / 5

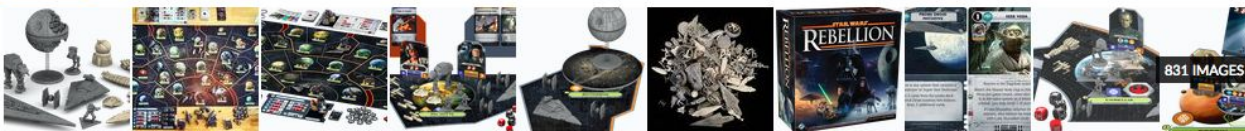
'Complexity' Rating ⓘ

Designer: [Corey Konjarska](#)Artist: [N/A](#)Publisher: [Fantasy Flight Games](#) + 6 more[See Full Credits](#)

My rating ★★★★★★

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1.4K

[Subscribe](#)[Overview](#) [Ratings](#) [Forums](#) [Images](#) [Videos](#) [Files](#) [Stats](#) [Expansions](#) [Versions](#) [My Games](#) [Market](#) [More](#)**Description**

From the publisher:

Star Wars: Rebellion is a board game of epic conflict between the Galactic Empire and Rebel Alliance for two to four players!

Experience the Galactic Civil War like never before. In *Rebellion*, you control the entire Galactic Empire or the fledgling Rebel Alliance. You must command starships, account for troop movements, and rally systems to your cause. Given the differences between the Empire and Rebel Alliance, each side has different win

CLASSIFICATION ⓘ

Type
[Strategy](#), [Thematic](#)

Category

[Fighting](#)[Miniatures](#)

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Model

- Ordinary Least Squares Linear Regression
- $R^2 = .24$
- A low score for a ranking problem

Outcome

- Games with more player are more likely to be popular
- An increase in the year the game was published was a negative impact on it's rating ($B_1 = -.277$)
- Kurtosis: 2.01



How can the model be improved?

Increase sample size



Azul
2017 · Rank:
47

Feudum
2018 · Rank:
2063

Arkham
Horror: The
Card Game
2016 · Rank:
19

Gaia Project
2017 · Rank:
14

Spirit Island
2017 · Rank:
52

The Mind
2018 · Rank:
1564

Description

[Edit](#)

From the publisher:

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Experience the Galactic Civil War like never before. In *Rebellion*, you control the entire Galactic Empire or the fledgling Rebel Alliance. You must command starships, account for troop movements, and rally systems to your cause. Given the differences between the Empire and Rebel Alliance, each side has different win conditions, and you'll need to adjust your play style depending on who you represent:

- As the Imperial player, you can command legions of Stormtroopers, swarms of TIEs, Star Destroyers, and even the Death Star. You rule the galaxy by fear, relying on the power of your massive military to enforce your will. To win the game, you need to snuff out the budding Rebel Alliance by finding its base and obliterating it. Along the way, you can subjugate worlds or even destroy them.
- As the Rebel player, you can command dozens of troopers, T-47 airspeeders, Corellian corvettes, and fighter squadrons. However, these forces are no match for the Imperial military. In terms of raw strength, you'll find yourself clearly overmatched from the very outset, so you'll need to rally the

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AWARDS & HONORS

[2017 Goblin Magnifico Nominee](#)

[2016 UK Games Expo Best Boardgame with Miniatures Winner](#)

[2016 Tric Trac Nominee](#)

[2016 International Gamers Award - General Strategy: Two-players Nominee](#)

[2016 Golden Geek Board Game of the Year Nominee](#)

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OFFICIAL LINKS

[Star Wars: Rebellion product page](#)
 (www.fantasyflightgames.com)

ADDITIONAL SUGGESTIONS

[Language Dependence](#)

Extensive use of text - massive conversion needed to be playable

COMMUNITY STATS

Own: 20K

Wishlist: 7.1K

For Trade: 139

[See All Stats](#)

BGG Item ID: 187645

Want In Trade: 1,327

Has Parts: 3

Wants Parts: 4

CLASSIFICATION

Type

Strategy, Thematic

Category

Fighting

Miniatures

Movies / TV / Radio theme

Science Fiction

Wargame

Mechanisms

Area Control / Area Influence

Area Movement

Dice Rolling

Hand Management

Partnerships

Variable Player Powers

Family

Components:

Miniatures

Star Wars

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Thank you!

Geek Rating Explained

- To prevent games with relatively few votes climbing to the top of the BGG Ranks, artificial "dummy" votes are added to the User Ratings. These votes are currently thought to be 100 votes equal to the midrange of the voting scale: 5.5, but the actual algorithm is kept secret to avoid manipulation. The effect of adding these dummy votes is to pull BGG Ratings toward the mid range. Games with a large number of votes will see their BGG Rating alter very little from their Average Rating, but games with relatively few user ratings will see their BGG Rating move considerably toward 5.5.

- $$\bar{x} = \frac{Cm + \sum_{i=1}^n x_i}{C + n}$$

Dropped variables

- Min number of players
- Average rating (not used for default rating, plus correlates with GeekRating)
- Original game price



Scraping when JS is present

[illegible]

```
<script>
    var GEEK = {};
    GEEK.adBlock = [];
    GEEK.adConfig = {"hideleaderboard":false,"hideskyscraper":false,"noadsense":false,"showbggstorewidget":false};
    GEEK.googleTargets = {"gameid":["187645"],"companyid":["17","23043","15889","6194","2973","4617","264"],"temp_co":["hot"],"familyid":
["44998","46035","40225","40875","40226","40555","40872","40224","37770","42309","38046","46990","25158","5602","5497","5496"],"propertyid":
["2080","2046","2072","1046","2040","1047","1064","2019","1016","2015","1019"],"personid":["6651"],"temp_ppl":["hot"]};
    GEEK.userid = 0;
    GEEK.domainname = 'boardgamegeek.com';
    GEEK.domain = 'boardgame';
    GEEK.geekitemPreload = {"item":{"itemdata":{"datatype":"geekitem fielddata","fieldname":"name","title":"Primary
```

Pairplot

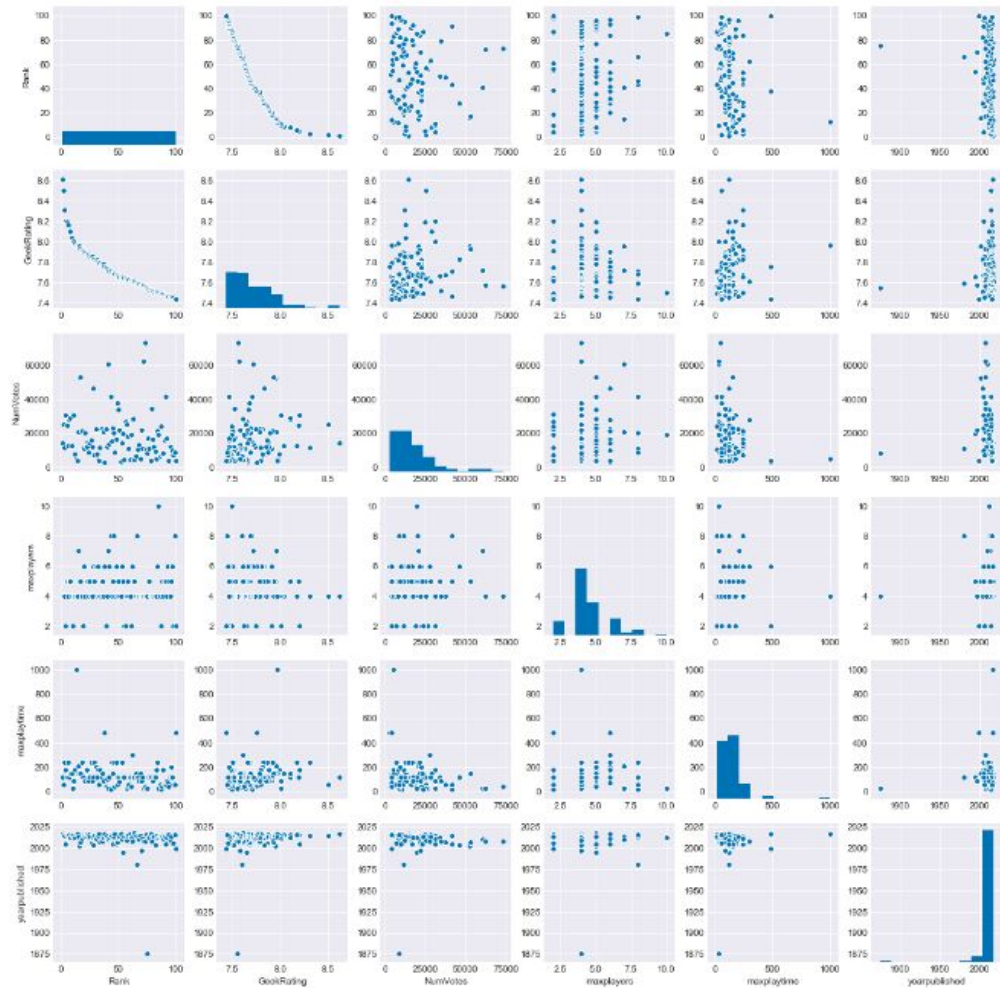




Image sources

[Google Drive](#)