

Identifying Features of Successful Sci-Fi Films

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Why Science Fiction?

Film producers are exploring genres that could reflect the post-pandemic sentiment

“[Science Fiction] can play an important role in shaping our responses to the COVID-19 pandemic. It can offer us significant insights into how individuals treated the trauma of pandemics in the past, and how to survive in a situation beyond our control” - Journal of Critical Studies in Language and Literature (2021)

“...fans of horror films exhibited greater resilience during the pandemic and that fans of ‘prepper’ genres (**alien-invasion, apocalyptic, and zombie films**) exhibited both greater resilience and preparedness” - Scrivner et al (2021)

Hypothesis

More tropes = more success ?




Process

Scraped from IMDb and Box Office Mojo

Cleaned & engineered data in Jupyter

Modeled & identified most impactful features



1. Star Wars: Episode VII - The Force Awakens (2015)


PG-13 | 138 min | Action, Adventure, Sci-Fi

★ 7.9 ☆ Rate this 80 Metascore

As a new threat to the galaxy rises, Rey, a desert scavenger, and Finn, an ex-stormtrooper, must join Han Solo and Chewbacca to search for the one hope of restoring peace.

Director: J.J. Abrams | Stars: Daisy Ridley, John Boyega, Oscar Isaac, Domhnall Gleeson

Votes: 870,545 | Gross: \$936.66M



2. Avengers: Endgame (2019)


PG-13 | 181 min | Action, Adventure, Drama

★ 8.4 ☆ Rate this 76 Metascore

After the devastating events of Avengers: Infinity War (2018), the universe is in ruins. With the help of remaining allies, the Avengers assemble once more in order to reverse Thanos' actions and restore balance to the universe.

Directors: Anthony Russo, Joe Russo | Stars: Robert Downey Jr., Chris Evans, Mark Ruffalo, Chris Hemsworth

Votes: 869,428 | Gross: \$858.37M



3. Avatar (2009)


PG-13 | 162 min | Action, Adventure, Fantasy

★ 7.8 ☆ Rate this 83 Metascore

A paraplegic Marine dispatched to the moon Pandora on a unique mission becomes torn between following his orders and protecting the world he feels is his home.

Director: James Cameron | Stars: Sam Worthington, Zoe Saldana, Sigourney Weaver, Michelle Rodriguez

Votes: 1,133,453 | Gross: \$760.51M



4. Black Panther (2018)

PG-13 | 134 min | Action, Adventure, Sci-Fi

★ 7.3 ☆ Rate this 68 Metascore

T'Challa, heir to the hidden but advanced kingdom of Wakanda, must step forward to lead his people into a new future and must confront a challenger from his country's past.

Director: Ryan Coogler | Stars: Chadwick Boseman, Michael B. Jordan, Lupita Nyong'o, Danai Gurira

Votes: 647,115 | Gross: \$700.06M

Box Office Mojo
by IMDbPro


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Star Wars: Episode VII - The Force Awakens (2015)

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IMDbPro
Cast information
Crew information
Company information
News
Box office
Brand rankings
Franchise rankings
Genre keyword rankings

Title Summary All Releases

All Releases
DOMESTIC (45.3%)
\$936,662,225
INTERNATIONAL (54.7%)
\$1,131,793,452
WORLDWIDE
\$2,068,455,677

Domestic Distributor	Walt Disney Studios Motion Pictures See full company information
Domestic Opening	\$247,966,675
Budget	\$245,000,000
Earliest Release Date	December 16, 2015 (EMEA, APAC)
MPAA	PG-13
Running Time	2 hr 18 min
Genres	Action Adventure Sci-Fi
IMDbPro	See more details at IMDbPro

Performance Cast and Crew All-Time Rankings Related Stories Similar Movies

By Release

Release Group	Rollout	Markets	Domestic	International	Worldwide
Original Release	December 16-January 9, 2016	62 markets	\$936,662,225	\$1,131,561,399	\$2,068,223,624
2020 Re-release	July 9-August 13, 2020	EMEA, APAC	–	\$230,525	\$230,525
2021 Re-release		EMEA, APAC	–	\$1,528	\$1,528

Storyline

[Edit](#)

30 years after the defeat of Darth Vader and the Empire, Rey, a scavenger from the planet Jakku, finds a BB-8 droid that knows the whereabouts of the long lost Luke Skywalker. Rey, as well as a rogue stormtrooper and two smugglers, are thrown into the middle of a battle between the Resistance and the daunting legions of the First Order. *Written by Noah White*

[Plot Summary](#) | [Plot Synopsis](#)

Plot Keywords: [reboot](#) | [sanitation employee](#) | [remake](#) | [wisecrack humor](#) | [sewer cleaner](#)
[See All \(517\)](#) »



Star Wars: Episode VII - The Force Awakens (2015)

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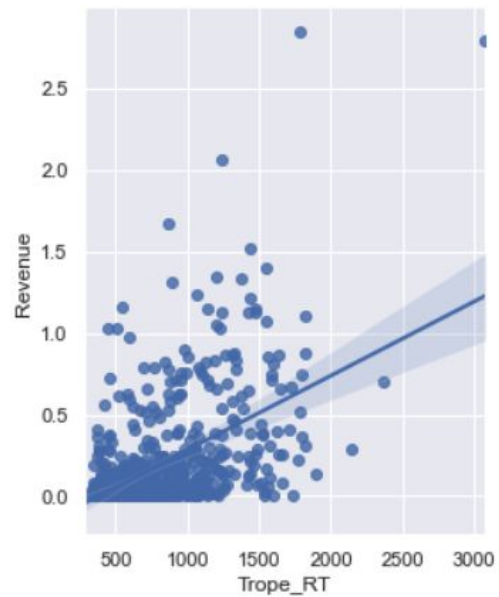
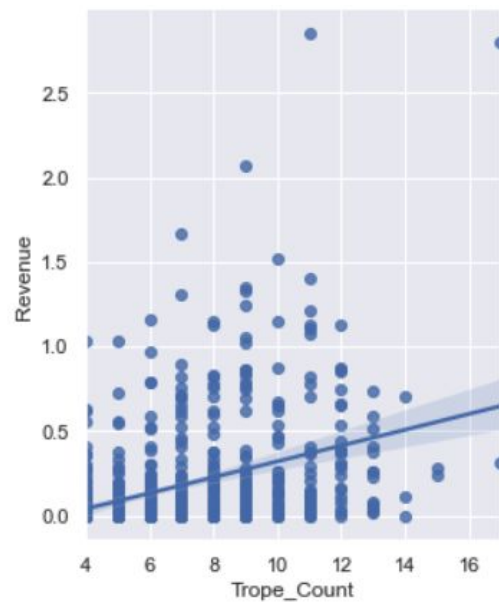
Plot Keywords

Showing all 517 plot keywords

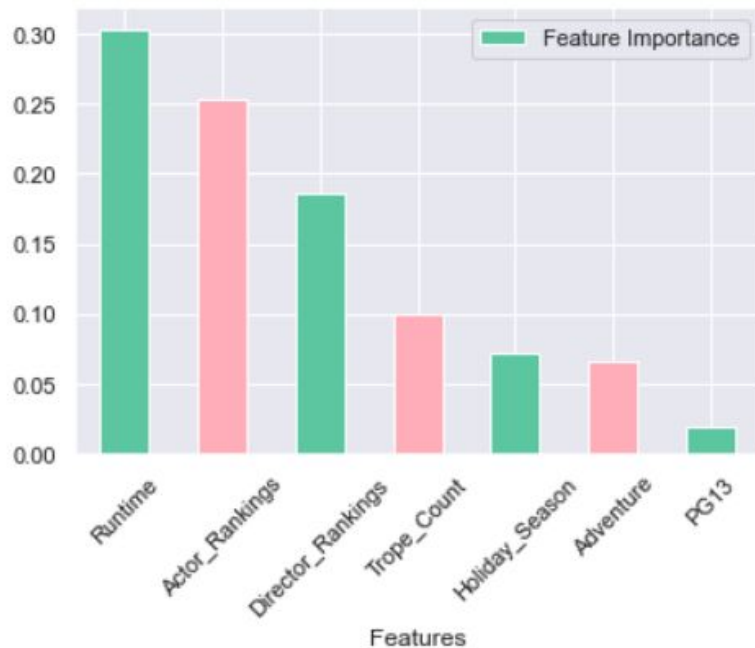
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actor reprises previous role 73 of 74 found this relevant	character says i have a bad feeling about this 72 of 74 found this relevant
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torture 18 of 18 found this relevant	destruction 13 of 13 found this relevant
angry man 8 of 8 found this relevant	betrayal 10 of 11 found this relevant
murder 6 of 6 found this relevant	turncoat 3 of 3 found this relevant
magical power 9 of 14 found this relevant	unattractive woman 4 of 5 found this relevant
scrap dealer 7 of 13 found this relevant	bipedal alien 4 of 8 found this relevant
deception 4 of 8 found this relevant	massacre 5 of 11 found this relevant
junkyard 2 of 3 found this relevant	quicksand 2 of 3 found this relevant
thin girl 1 of 1 found this relevant	girl 1 of 1 found this relevant

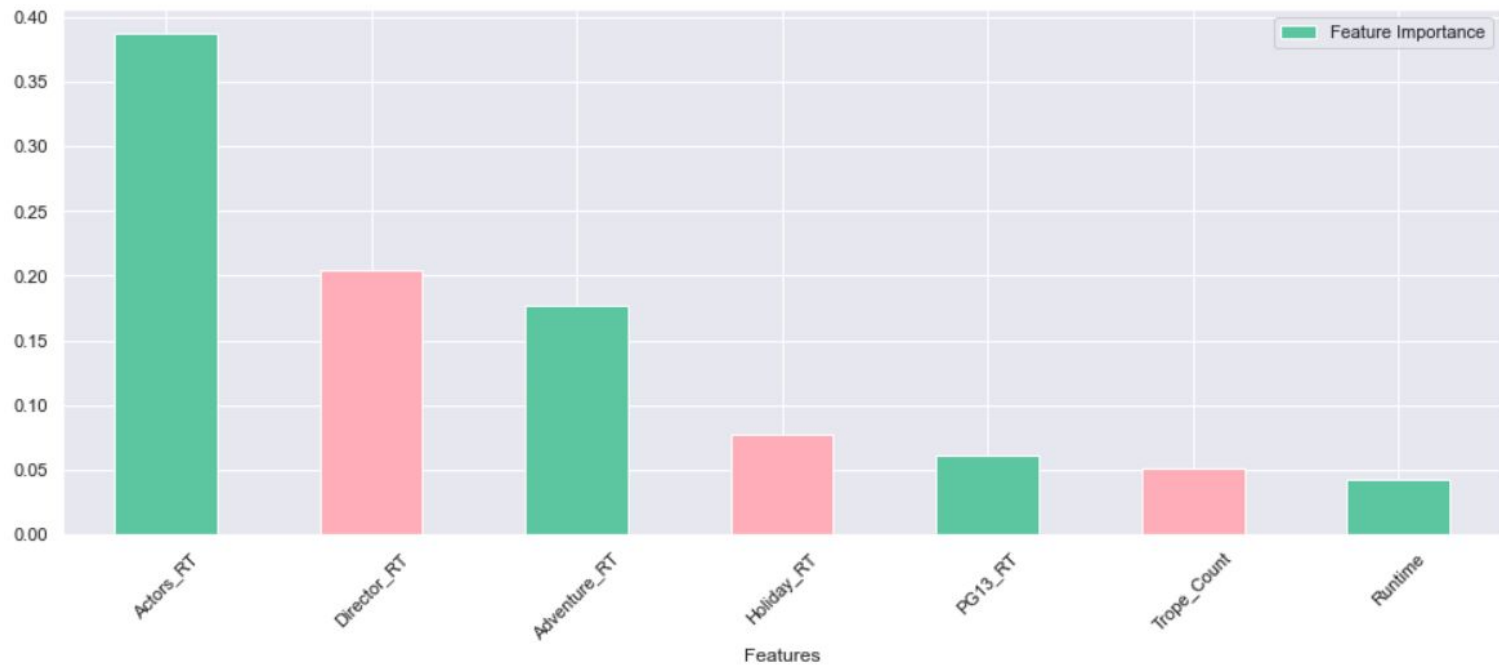
Tropes vs Revenue



Feature Importance using Random Forest:



Feature importance after adding interaction terms:



Conclusion

Ultimately, the factors that have the highest impact on the revenue of the film are the actors & directors

Further analysis:

- Budget?