



Microsoft Movie Studio

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Summary

Analyzed: runtime, budget, genre, TMDb average vote score, profit, and ROI.

- Best ROI:
 - Short time (< 90 minutes)
 - Low budget (<16 millions)
 - Genre: Horror or Thriller
- Best Profit and Review
 - Long time (> 132 Minutes)
 - High budget (>58 millions)
 - Genre: Action, Adventure, Sci-Fi or Thriller



Outline

- Business Problem
- Data
- Methods
- Results
- Conclusions



Business Problem

Microsoft wants to create a new movie studio.

- What type of movies are currently doing the best?
- Microsoft's brand is valuable.
- Generate actionable insights!



Data

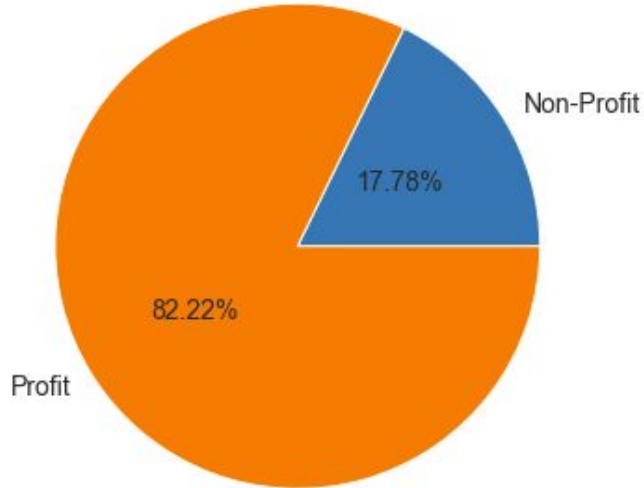
- Data Source:
 - Box Office Mojo
 - IMDB
 - TheMovieDB.org
- Dependent Variables to optimize:
 - $\text{ROI} = \text{profit} / \text{budget}$
 - Average vote
 - We'll also talk about absolute profit
- Independent Variables which influence ROI and average vote:
 - Runtime
 - Budget
 - Genre
 - Studio

Methods

- Joined data from many sources
- Analyzed 1000+ movies
- Plotted and computed regression lines comparing 1 independent and dependent variable at a time
- Iteratively improved expected ROI by fixing best options for dependent variables
- Stopped when sample size became too small to remain meaningful

Results: Percent of Movie Profitable

Percent of Movie Which Are Profitable



Question: Is movie making money?

Answer: Yes, 82.22% movie profit, only 17.78% movie not profit.



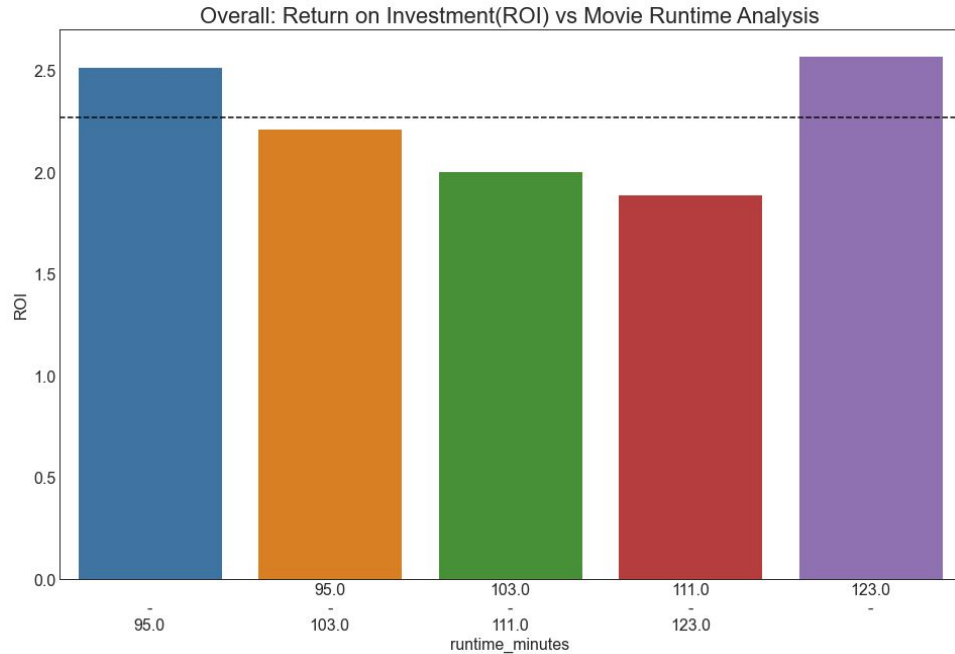
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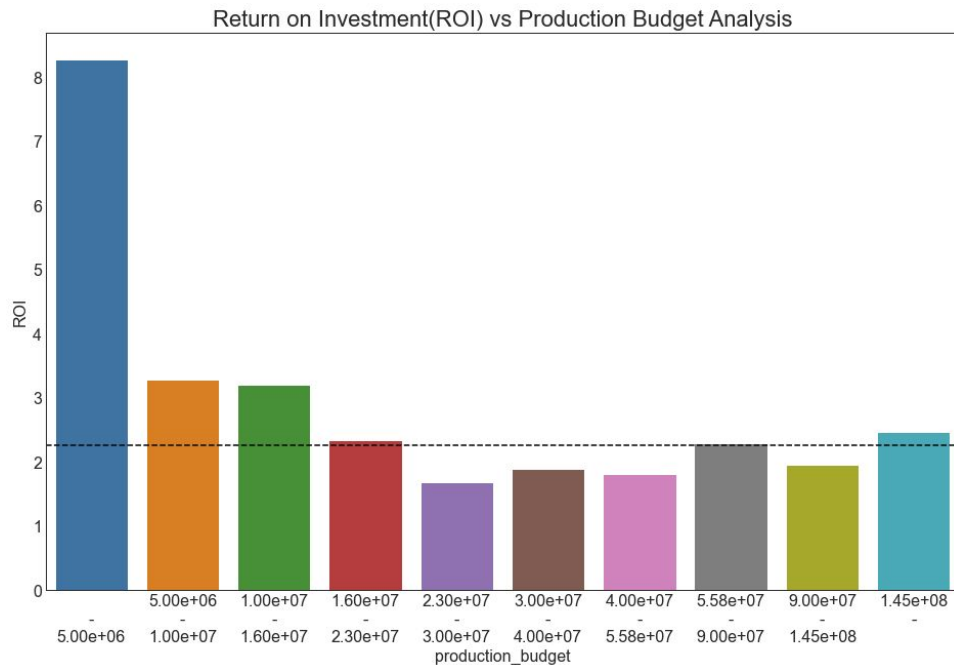
Results: Runtime

Insights:

- Short Movie (< 95 min) = 😊
- Long Movie (> 123 min) = 😊
- 95-123 min = 😞



Results: Budget

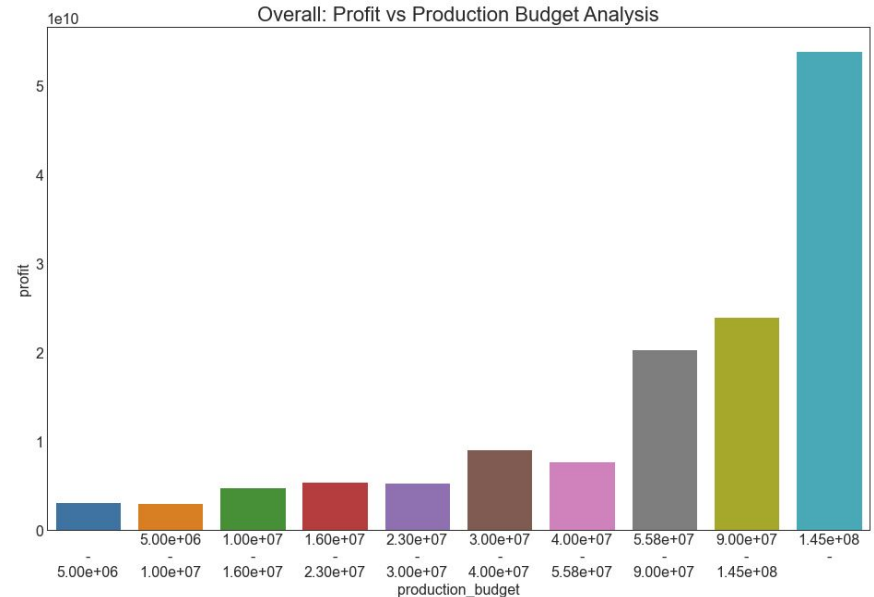
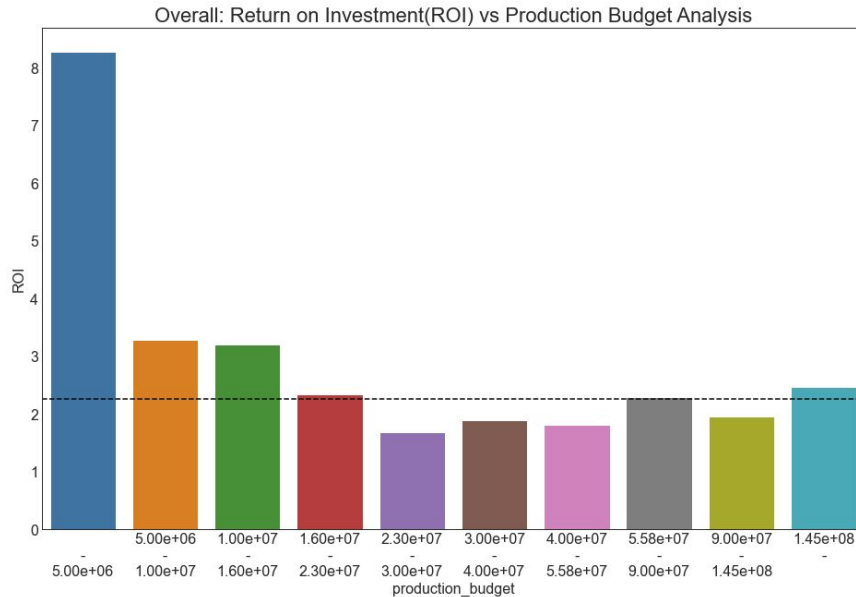


Insights:

- Low Budget (< \$5 million) = 😄
- Low Budget (\$5-\$16 million) = 😊
- \$16-\$56 million = 😞
- High Budget (>\$56 million) = 😐

Results: Budget

- High budget (>56 Million) = High profit
- Low budget (<16 Million)= High ROI



Results: Choices

Low or High Budget?

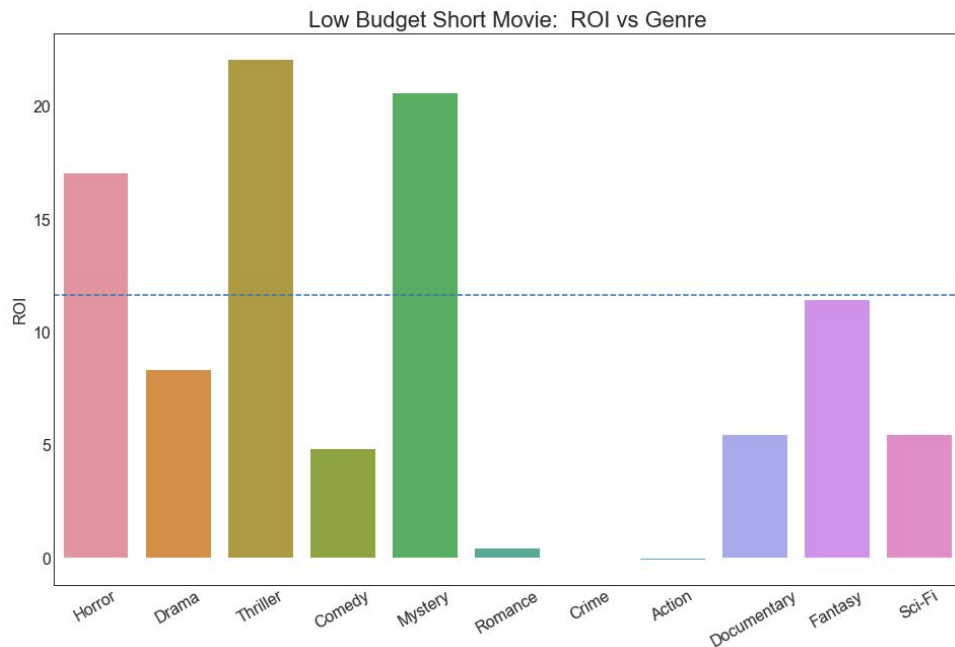
Short or Long?



ROI and Vote Average by category

	All Budgets	Low Budget	High Budget
All Length	2.27 ROI 6.39 AV	7.62 ROI 6.30 AV	2.27 ROI 6.40 AV
Short Movie	2.51 ROI 5.90 AV	11.63 ROI 5.90 AV	2.67 ROI 6.35 AV
Long Movie	2.68 ROI 7.00 AV	6.19 ROI 7.10 AV	2.81 ROI 7.10 AV

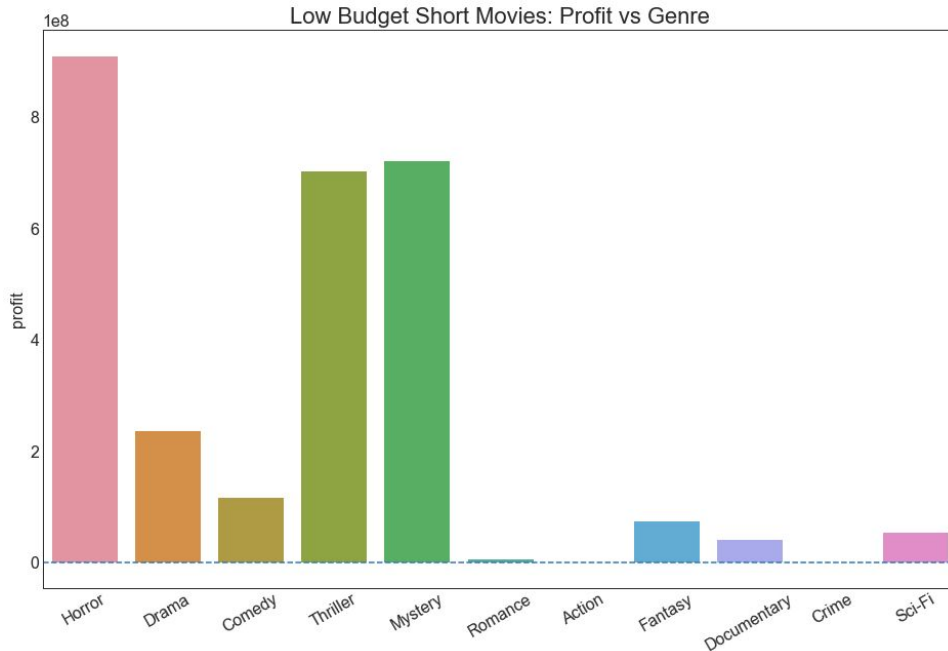
Recommendation: Low Budget Short Movie



Insights:

- Thriller, Mystery, Horror = 😊
- Final expected ROI (Thriller) > 20 !

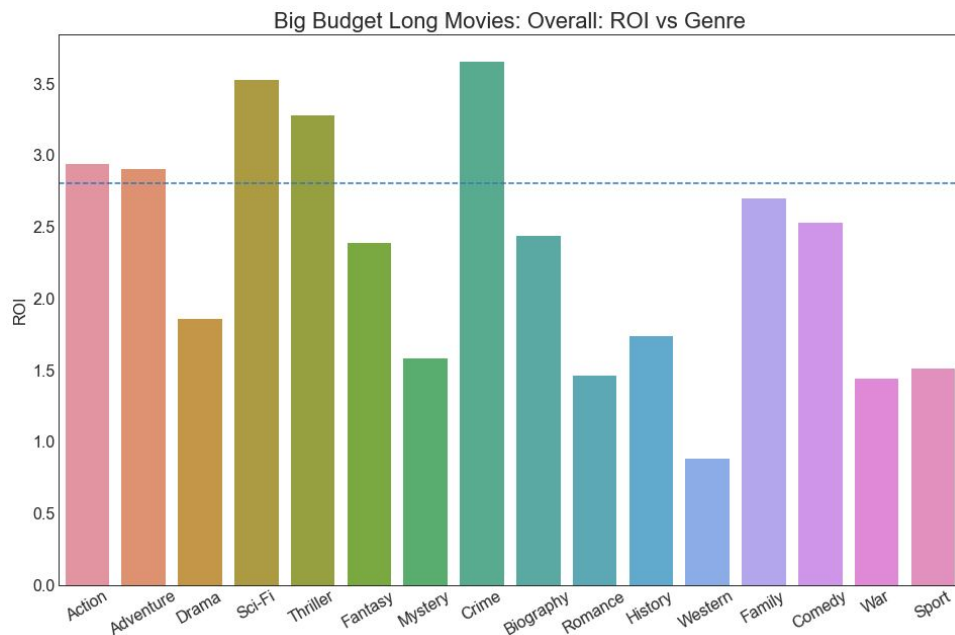
Recommendation: Low Budget Short Movie



Insights:

- Horror, Thriller, Mystery = 😊
- Great ROI with small amount budget!

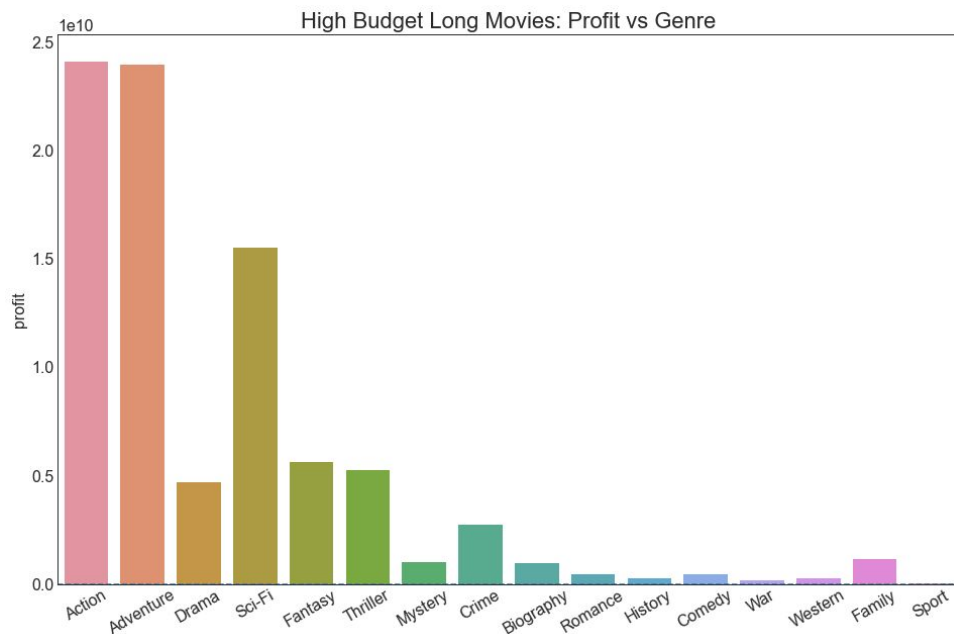
Recommendation: High Budget Long Movie



Insights:

- Crime, Sci-Fi, Thriller = 😊
- Action, Adventure = 😐
- Final expected ROI (Sci-Fi) = 3.5!

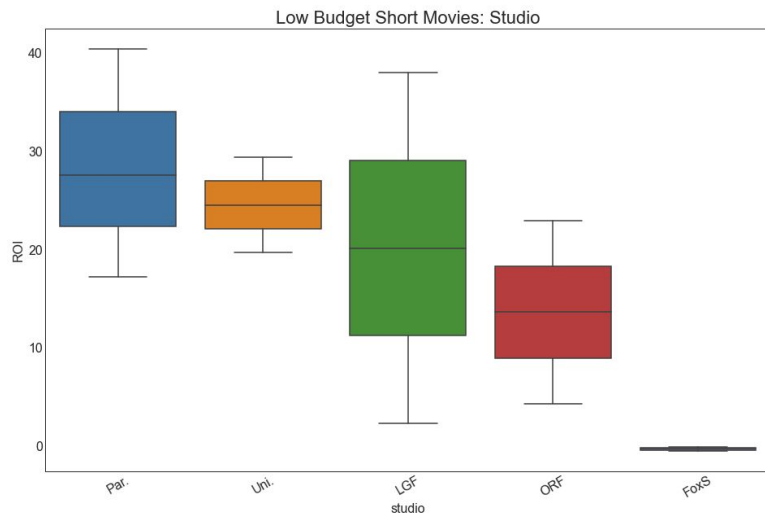
Recommendation: High Budget Long Movie



Insights:

- Action, Adventure = 😄
- Sci-Fi, Thriller = 😊
- Crime = 😐
- ROI is very good in a category that generates a lot of absolute profit.

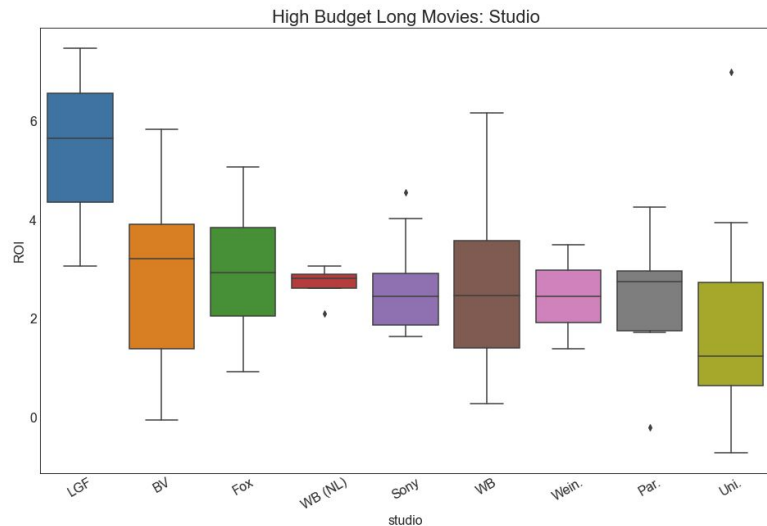
Studio To Study: Low Budget Short Movie



Two Studio, Par and Uni Make best Low budget short Horror Movies(by ROI).

	original_title	studio	runtime_minutes	ROI	profit	averagerating	genres
599	Paranormal Activity 3	Par.	83.0	40.407969	202039844	5.8	Horror,Mystery,Thriller
928	The Last Exorcism	LGF	87.0	37.981056	68365900	5.6	Drama,Horror,Thriller
978	The Purge	Uni.	85.0	29.422194	88266581	5.7	Horror,Thriller
481	Lights Out	WB (NL)	81.0	28.761302	143806510	6.3	Drama,Horror,Mystery
600	Paranormal Activity 4	Par.	88.0	27.563598	137817992	4.6	Horror,Mystery,Thriller
19	A Haunted House	ORF	86.0	22.969023	57422558	5.1	Comedy,Fantasy
587	Ouija	Uni.	89.0	19.660126	98300632	4.5	Horror,Mystery,Thriller
602	Paranormal Activity: The Marked Ones	Par.	84.0	17.180971	85904854	5.0	Horror,Mystery,Thriller
443	Kevin Hart: Let Me Explain	LG/S	75.0	11.930902	29827255	6.8	Comedy,Documentary
933	The Lazarus Effect	Rela.	83.0	6.671862	33359310	5.2	Horror,Mystery,Sci-Fi

Studio To Study: High Budget Long Movie



No standout studios (LGF has only Hunger Games). High Budget seems dominated by expensive IP. Further analysis required, but Superhero movies seem like safe bets.

	original_title	studio	runtime_minutes	ROI	profit	averagerating	genres
909	The Hunger Games	LGF	142.0	7.474042	597923379	7.2	Action,Adventure,Sci-Fi
308	Furious Seven	Uni.	137.0	6.993278	1328722794	7.2	Action,Crime,Thriller
81	Aquaman	WB	143.0	6.168092	986894640	7.1	Action,Adventure,Fantasy
91	Avengers: Infinity War	BV	149.0	5.827114	1748134200	8.5	Action,Adventure,Sci-Fi
121	Black Panther	BV	134.0	5.741291	1148258224	7.3	Action,Adventure,Sci-Fi
910	The Hunger Games: Catching Fire	LGF	146.0	5.652831	734868047	7.5	Action,Adventure,Sci-Fi
944	The Martian	Fox	144.0	5.067328	547271443	8.0	Adventure,Drama,Sci-Fi
327	Gone Girl	Fox	149.0	5.042085	307567189	8.1	Drama,Mystery,Thriller
1058	Transformers: Dark of the Moon	P/DW	154.0	4.763028	928790543	6.2	Action,Adventure,Sci-Fi
727	Skyfall	Sony	143.0	4.552635	910526981	7.8	Action,Adventure,Thriller

Conclusions

- “Middle of the Road” movies are the worst across all metrics:
 - Make a low-budget (for best ROI) or high budget (for best profit, best ratings, good ROI) movie, not a middle budget movie
 - Make a movie that is either long or short, not medium length
- Pick Genre that suits budget and length:
 - Horror, Thriller for Low Budget Short Movies
 - Action, Adventure, Sci-Fi, Thriller for High Budget Long Movies
- Intellectual Property seems important for successful High Budget Long Movies
 - Buy movie rights for comic book superheroes or popular books.
- Further Research
 - We can help analyze directors, writers, actors within a certain genre, budget, runtime once you make a decision!



Thank You!

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