CASE STUDY: BOX OFFICE

MICROSOFT FILMS

Making an impact in the film industry

SUCCESS: FOR FILMS

1. MONEY

- Generating profit
- Large ROIs/Large Gross

2. RATINGS

- Good ratings will lead to better money
- Gain non-monetary incentives (awards,clout)

3.RESOURCES

- Time,Money,Venues, Equipment
- Marketing
- Production, SFX and AV, other supporting deparaments

4. IMMERSION

- Grab the viewer's imagination
- Make them want more

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DATA PROCESS:

1

Data Cleaning

2

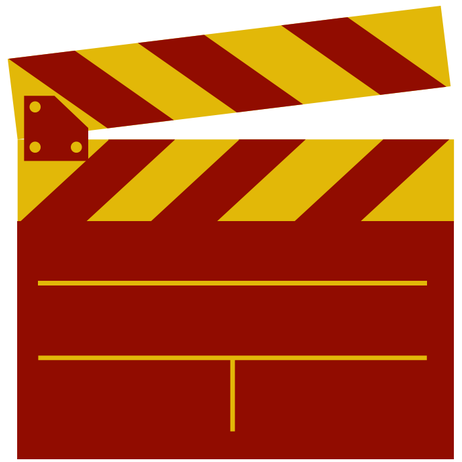
Data Manipulation

3

Data Analysis

4

Data Presentation



PROFIT

Money is necessary for a business to run.

Money: Units of Measurement

TOTAL PROFIT (NET GAIN)

Gross - Spend = Total Profit

ROI (MULTIPLICATIVE RETURN)

The multiplier of return

Gross/Spend = ROI

Total Profit

	movie	TotalProfit
1	Avatar	3111852904
2	Star Wars Ep. VII: The Force Awakens	2683973445
3	Titanic	2667572339
4	Avengers: Infinity War	2426949682
5	Jurassic World	2086125489
...	...	...
96	The Da Vinci Code	860356597
97	Gravity	857791378
98	Fantastic Beasts and Where to Find Them	856440428
99	Star Wars Ep. II: Attack of the Clones	852372355
100	Up	849467541

Table 1. Top 100 Total Profit Movies in order

HIGH PROFIT COULD BE HIGH BUDGET

Some movies might have spent a lot of money to produce a movie which also sold a lot because of its quality

	TotalProfit
count	1.000000e+02
mean	1.222976e+09
std	3.989696e+08
min	8.494675e+08
25%	9.687091e+08
50%	1.110183e+09
75%	1.311665e+09
max	3.111853e+09

Table 2: A description of the top 100 profiting movies

ROI

	movie	ROI
1	Paranormal Activity	671.337431
2	The Blair Witch Project	648.065165
3	The Gallows	644.208840
4	El Mariachi	583.264000
5	Mad Max	542.500000
...	...	...
4102	Glitter	1.005499
4103	Repo Men	1.004289
4104	Birthday Girl	1.003894
4105	The Missing	1.002366
4106	Dragonfly	1.002127

Table 3. ROI of movies sorted in descending order

PERCENT RETURN

Low Budget Movies which performed well would have very high ROI

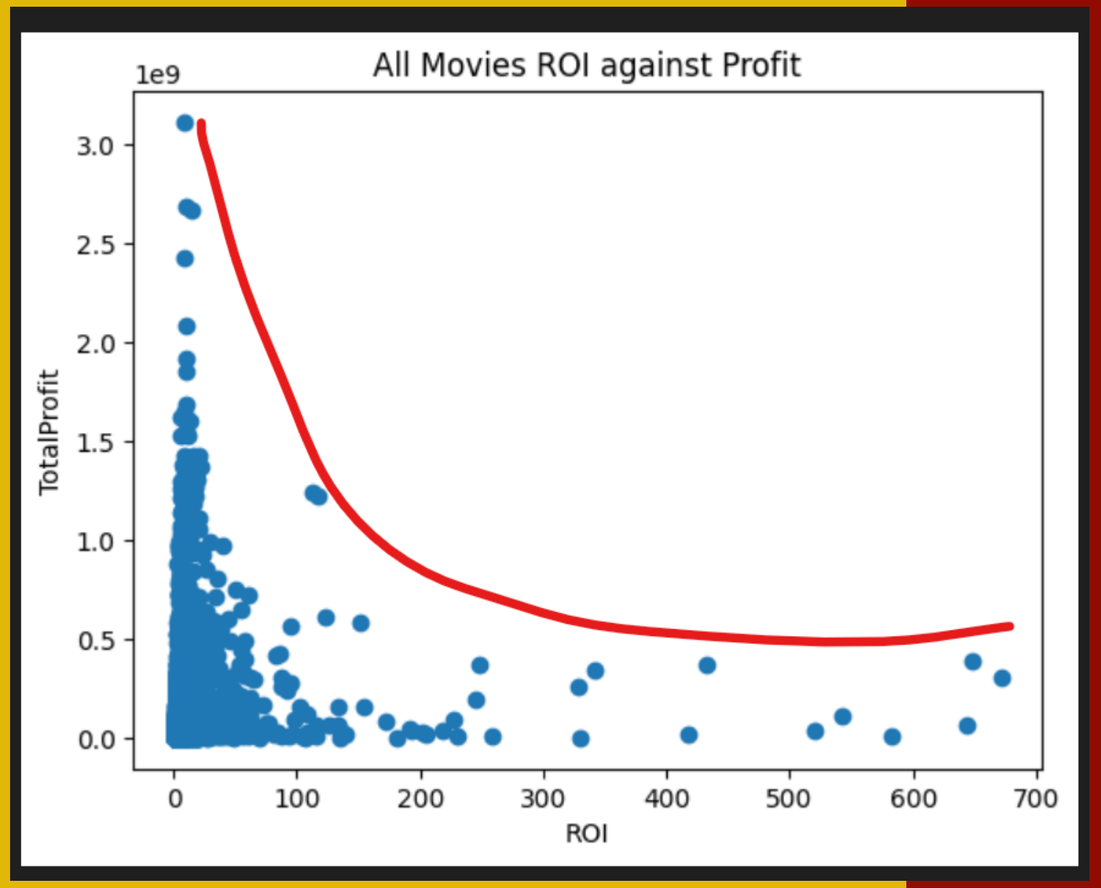
More difficult for higher budget movies to achieve very high ROI

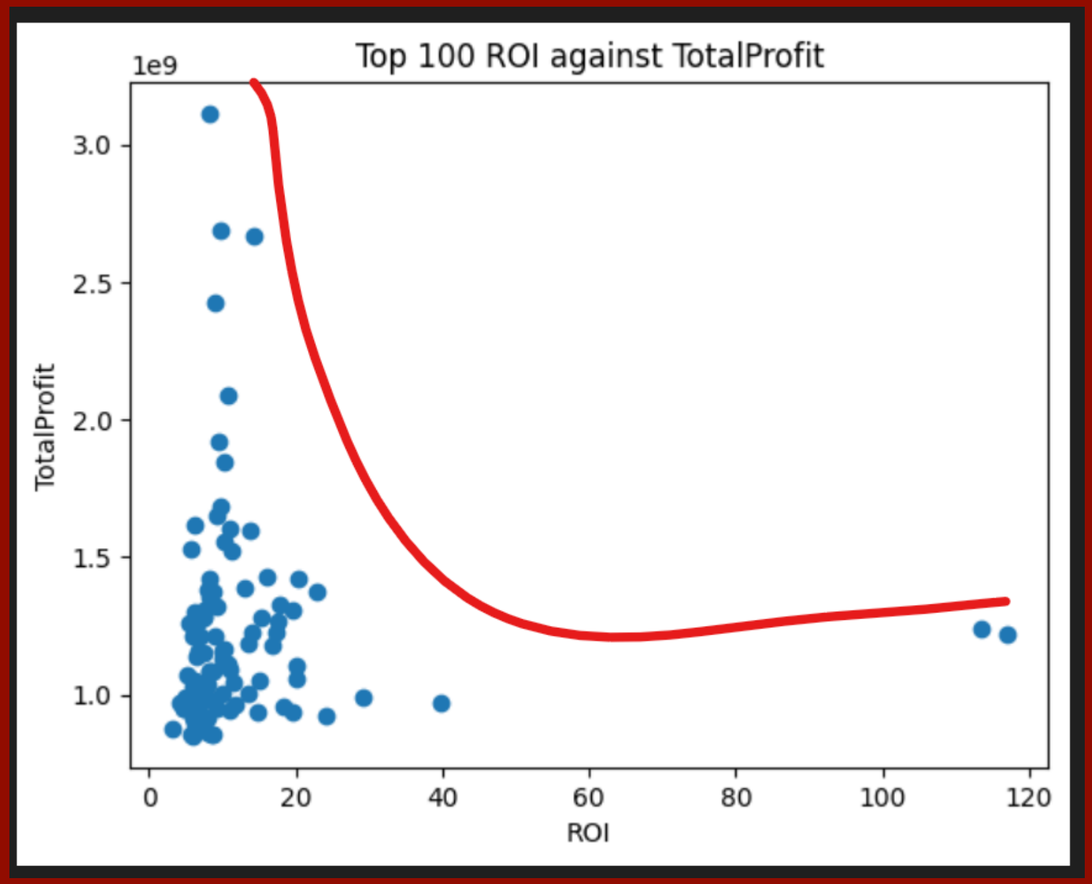
	ROI
count	4106.000000
mean	9.290299
std	30.911974
min	1.002127
25%	2.304921
50%	4.097296
75%	7.555405
max	671.337431

Table 4: A description of Table 3

What are we looking for?

Hyperbolic Marker





Where to from here?

Maximising Profits and ROIs

1. SET ROI AND PROFIT TARGETS

- Using ROI/Profit Trends set an achieveable benchmark

2. FORECAST AND PREDICT

- Budget
- Risk-Return Profiles
- Project Timeline

3. STRATEGISE AND EXECUTION

- Recruit people for project
- Gather resources required
- Adjust project budget/timeline accordingly

4. PRODUCTION AND CONSUMPTION

- Filming,Marketing, Production
- Post-production analysis

RATINGS

Do ratings have any correlation with profit?

Hypothesis Testing

Type	Measure	Name	Description
One Sample Test	Mean	One Sample T Test	Determine if there is a significant difference between an observed mean and a theoretical one. The sample size is small and the variance is unknown
		Z Test	Determine if there is a significant difference between an observed mean and a theoretical one. The variance is known and the sample size is large
Two Sample Test	Correlation	Pearson Correlation Coefficient	Test the association between two samples
	Mean	Two Group T Test	Compare two observed means (independent samples). The sample size is small and the variance is unknown
		Paired T Test	Compare two observed means (paired samples). The sample size is small and the variance is unknown
		Z Test	Compare two observed means (independent samples). The variance is known and the sample size is large

Table 5: Table 5: Hypothesis testing table for specifying which test to perform.

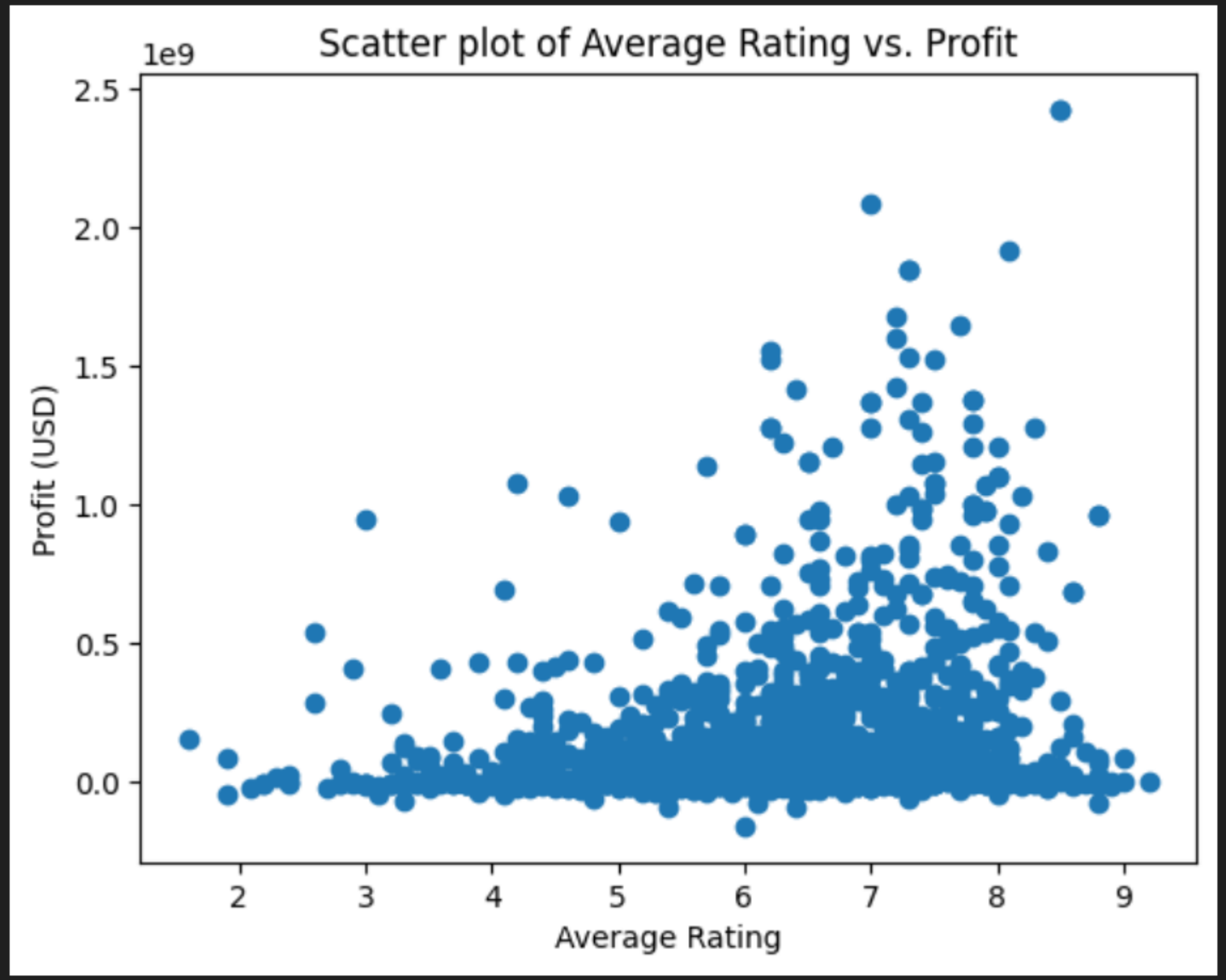
Available from: https://towardsdatascience.com/hypothesis-tests-explained-8a070636bd28

Null Hypothesis

RATINGS ARE NOT CORRELATED TO PROFIT/ROI

Does Rating correlate to Profit?

- Pearson Correlation Coefficient Test
- Strong chance of a weak correlation

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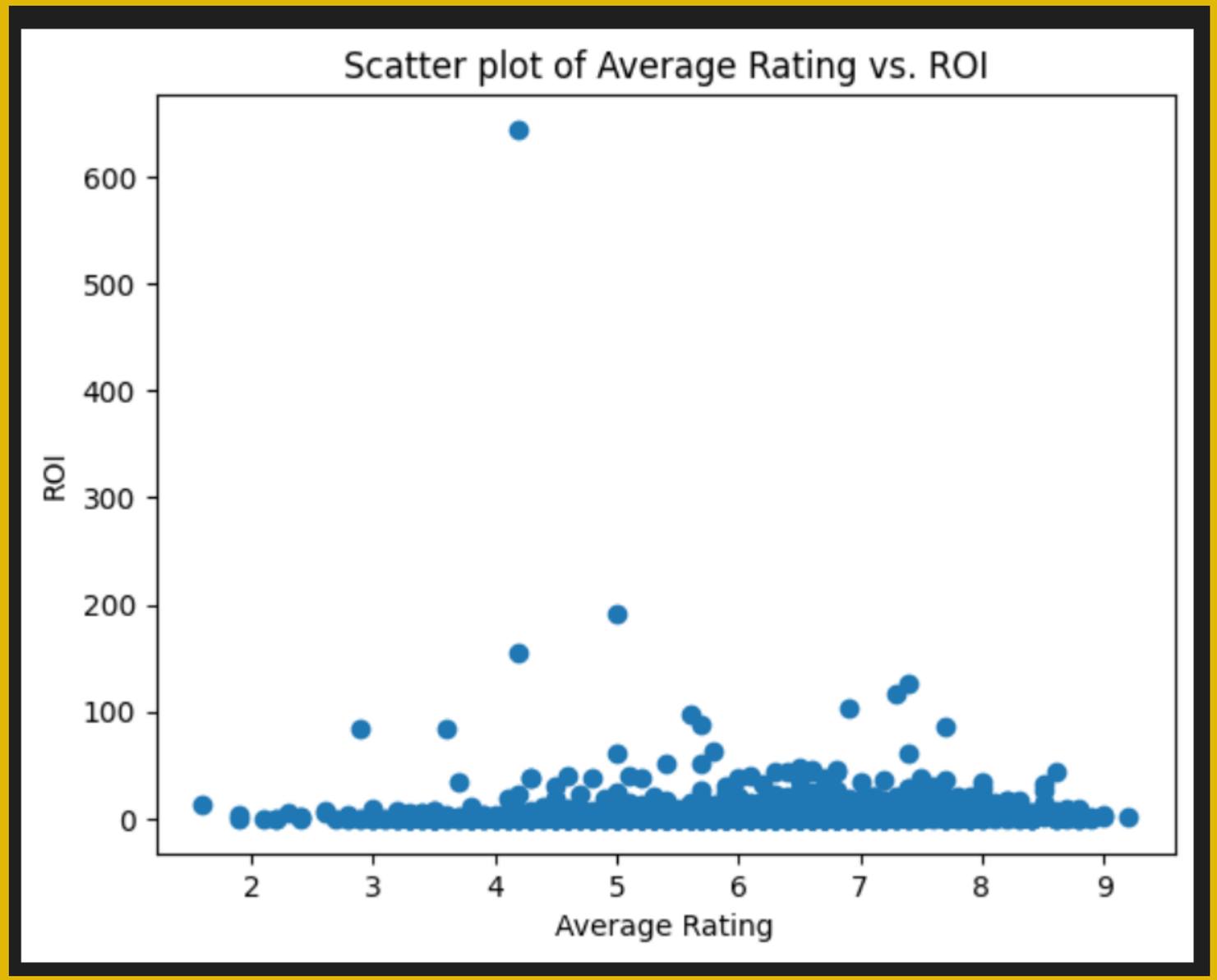
The Pearson's correlation coefficient has a value of 0.254117736883067
The p_value for this calculation is 9.795269092748042e-30
```

No Correlation between Rating and ROI



What does this mean?

	Name	Profession	Average Rating
58856	David Steen	actor,writer,producer	9.05
349072	Bagavathi Perumal	actor	8.80
103641	Shannon McIntosh	producer,production_manager,writer	8.75
326605	Alex R. Wagner	producer,director,writer	8.65
43617	Kevin Marshall	miscellaneous,actor,cinematographer	8.65
...	...	...	...
460408	Robert Stuvland	editorial_department,editor,producer	2.40
306029	David Courtice	editorial_department,producer,miscellaneous	2.40
187751	James Nguyen	writer,director,actor	1.75
244337	Alan Bagh	actor,producer,director	1.75
301802	Ryan Good	producer	1.70

Table 6: Average ratings table of personnel with more than 1 known titles

HIRING PEOPLE WHO HAVE WORKED IN HIGH RATED FILMS

- Experienced people who could help create more high rated films

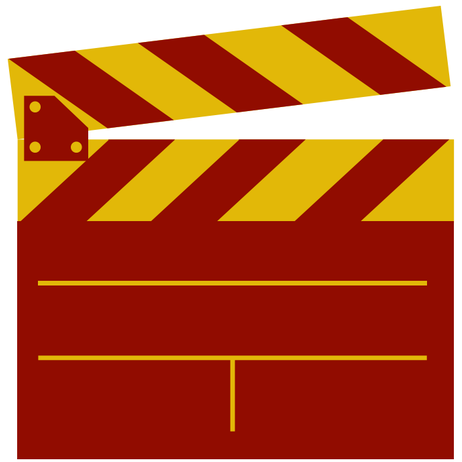
FILM ANALYSIS

- What likeable elements made the film highly rated? Cinematography? Casting? Costume design?

↓

Assimilation

How can this be added to Microsoft's films?



IMMERSION

The method by which we can draw the person into the story

Franchise Film

KEEP THEM COMING BACK FOR MORE

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Null Hypothesis 1

FRANCHISE FILMS DID NOT BETTER THAN OTHER FILMS IN ROI

Null Hypothesis 2

FRANCHISE FILMS DID NOT PERFORM BETTER THAN OTHER FILMS IN PROFIT

Analysis Method

1. GRAB FRANCHISE DATA

- Star Wars
- Harry Potter
- Lord of the Rings
- Avengers

2. MANIPULATE FRANCHISE DATA

- Concatenate all the assorted data

3. PERFORM METHOD HYPOTHESIS TESTING

- Unpaired T-Test

4. RESULTS INTERPRETATION

Based on if hypothesis was rejected or not, establish if there was some correlation between them.

Results:

ROI

- Null Hypothesis is not rejected

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The t-stat value of 1.09e+00 was calculated
The p-value value of  2.75e-01 was calculated
```

Profit

- Null Hypothesis is rejected

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The t-stat value of 2.88e+01 was calculated
The p-value value of  7.38e-170 was calculated
```

TO SUMMARISE

1. HYPERBOLIC ROI/PROFIT CURVE

- using the hyperbolic ROI/profit curve find an optimal ROI/profit goal to settle on

2. ASSIMILATION OF HIGH RATING STRATEGEMS

- recruiting people who have worked in high rated films
- analysing the film to assimilate film techniques

3. FRANCHISE ESTABLISHMENT

- have a building story throughout multiple movies
- create a loyal fanbase