



Analyzing Intellectual Property's Influence on the Financial and Critical Success of Musical Films in Hollywood

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Abstract

In this century in which original films are considered high risks, most multi-billion dollar film production studios such as Hollywood and Warner Bros are choosing to produce films relying on an already well-established intellectual property with a stable market base, as a way to prevent box office failure. Over the past five years, only 12% of the top 20 films each year were originals — a stark change from the 1990s, in which almost half of the highest-earning films were original and only 14.5% were sequels (The Numbers Dataset Team). Musical films, considered a more localized film category with only a 0.92% of all films, is at the forefront of this issue.

This research paper seeks to evaluate the influence that a musical film's pre-existing Intellectual Property can have on its financial and critical success. This paper also aims to analyze consumer behaviors and prevalent theories that explains certain reasonings behind the trends of films with IP and without IP. Data of musical films collected will be in the years 2000~2019, from various sources such as IMDb and MetaCritics.



Introduction

Musical Films

Musical film, or movie musical, is a film genre that involves songs performed by the characters that are interwoven into the narrative of the story, offering the audience a diverse and vibrant blend of storytelling and entertainment (Purdy, 2023). The Golden Age of Musical Films that stirred in the late 1920s through the mid-1960s was a revolutionary time period for the musical film industry that dominated Hollywood and reached its peak in popularity, technical innovations, and box-office success. Musical films at the time reached box-office revenue of over 200 million USD, drastically surpassing other film genres (Kaggle's Movie Dataset). There were many blockbuster musical films released during this time period: *The Wizard of Oz* (1939), *Singing in the Rain* (1952), *West Side Story* (1961), and *The Sound of Music* (1965).

Intellectual Property (IP)

According to the World Intellectual Property Organization, Intellectual Property (IP) refers to creations of the mind, such as inventions; literary and artistic works; designs; and symbols, names, and images used in commerce. In the context of the film industry, IP refers to creative works, such as movies, TV shows, characters, art works, books, comics, or stage productions that are copyrighted. Producing a film with existing intellectual property can guarantee the public's attention and interest for the first while after release, but whether it will positively or negatively impact the film's overall success is debatable.

2000s Musical Revival Era

The early 2000s was the time period when musicals resurfaced back into being one of the dominant blockbuster film genres. Musical films *Moulin Rouge!* (2001) and *Chicago* (2002) were catalysts of the revival that led to the release of many other successful musical films. Unlike the clean, escapist narratives of classic Hollywood musical films, the 2000s revival leaned into complexity and grit, a much darker and realistic theme. It commenced new subgenres in musical films such as horror and psychological thriller that shied away from the previous simple and joyful approaches (Mahmoodi-Bakhtiari, 2014). This allowed the viewer to connect with the plot, character, and setting of the story in much greater depth and understanding. Some other examples of musical films released in this time period: *Rent* (2005), *Dreamgirls* (2006), and *Hairspray* (2007).

Other Potential Factors

There are multiple factors that can affect the success of a musical film. While this research paper only investigates the influence of Intellectual Property on the success of musical films, there are also other factors that can be influential. There are three other major factors: Star Power, referring to the acclaimed A-list actors/actresses who bring revenue to the film; production budget, meaning the amount of money spent on producing this film; and The "Disney" Effect, which is the large surge of revenue and viewers that Disney brings with its films, just with its brand image.

Literature Review

Regarding the topic of evaluating the factors that influence the financial and critical success of musical films, in particular with the influence of IP status, a few notable researchers and experts have done similar works. Three researchers at the School of Economics and Management, Communication University at Beijing, China, Hongyang Li et al., researched on the brand spillover effect on China's IP movie based on signaling theory. They took the revenue and rating of films as the independent variable, to evaluate which offers better signals as brand spillover effect to promote a new film. They concluded that audiences are far more convinced by the box office revenue data of past IP films than by the star ratings and reviews, when deciding whether to watch the new upcoming IP film or not. Additionally, when regarding to sequels of IP films, audiences are more intrigued and benefitted by the positive reviews and high box office performance of the original IP film; while the sequels that come after have less impact on whether the audience will watch the newest sequel (Movie 1 of a trilogy franchise has greater effect on the newest movie than movie 2). Another really interesting research is done by Xinyu Jiang et al., who examined the role of perceived value and consumer innovativeness on consumers' intention to watch intellectual property films. They found that people decide whether to watch an IP film based on how good and popular the original IP film was, not on how much money the studio spent on advertising. This is a point that shows the consumer behaviors and audience intentions when deciding whether to watch a film. Furthermore, Dean Simonton from the University of California, Davis, researched the cinematic success criterias, found that the three indicators used to determine a film's success is critical success (rating and reviews), financial success (gross revenue, ROI), and movie awards (including dramatic, technical, visual, etc). Additionally, Stephanie M. Brewer et al. from Indiana University, analyzed the box office revenue of films with factors such as production budget, pre-existing audience, number of screens this film was shown in theaters, consumer price index, presence of popular stars, etc. Conversely, Richard Wallace from the University of Alabama examined the phenomenon of film as the source material for Broadway musicals, as opposed to what this research paper is analyzing.

Measure of Success

The success of a film is measured through two categories: Financial success and Critical success.

Financial Success – this refers to the success of a film in financial aspects, including its Worldwide box office revenue, production budget, and Return-on-Investment (ROI). The higher this film profits after reducing the budget, the more successful the film is financially.

Critical Success – this refers to the success of a film in a critical aspect by investigating the quantitative data of public viewers and professional critics' ratings on the film. This is to evaluate how well a film is performing in terms of the audience's enjoyment and level of connection to the film; this includes narrative elements, dialogue, character development, theme exploration, cinematography, acting, editing, sound designing, lighting, etc.

Hypothesis

Thus, to measure financial success,

Hypothesis 1: Musical films in the 2000s~2010s with pre-existing Intellectual Property will have *higher* worldwide box office revenue and ROI compared to musical films without pre-existing Intellectual property.

To measure critical success,

Hypothesis 2: Musical films in the 2000s~2010s with pre-existing Intellectual Property will have *higher* rating scores from both the public viewers and critics compared to musical films without pre-existing Intellectual property.

Methodology

I collected data from 40 musicals, 20 are musicals that have Intellectual Property, and the other 20 are musicals without Intellectual Property. All musicals are from the year 2000, when the number of musicals produced increased, to just before 2019 when Covid hit that had greatly changed the film industry. I collected each musical's IP status, worldwide box office revenue, audience rating, and critics rating. I also collected each musical's production budget, star power status (whether it has A-list actors/actresses), animated status, and Disney status, so as to control these factors to not affect the box office revenue when evaluating the IP's effect.

I presented the data in the model of multiple linear regression to observe whether films with IP are performing higher revenue and rating compared to films without IP after controlling the other factors. To accurately evaluate the two separate successes that IP affects, two multiple linear regression functions and graphs are created – one for revenue as dependent variable, and another one for average rating.

Model Type: Multiple Linear Regression

Independent Variable:

1. Intellectual Property (IP) Status
 - a. As dummy variables:
 - i. With IP = 1
 - ii. Without IP = 0

Dependent Variable:

1. Worldwide Box Office Revenue (\$USD)
 - a. Values are logged to alleviate the large difference between small-scale earning films and large-scale billion-dollar films
2. Average Film Rating
 - a. Audience Rating (60%)
 - i. 0 ~ 10 scale (0 = worst; 10 = best)
 - ii. Worth 60% of the average rating
 - b. Critics Rating (40%)
 - i. 0 ~ 100 scale (0 = worst; 100 best)



Control Variables (other factors):

1. Production Budget (\$USD)
 - a. Values are logged to prevent large outlying differences
2. Star Power
 - a. whether the film has A-list actors/actresses (1 = yes; 0 = no)
3. Disney Status
 - a. whether the film is from Disney (1 = yes; 0 = no)

Results

Multiple Linear Regression Formula (with data from all 40 musicals):

$\ln(\text{revenue or average rating}) = 0.5 (\text{IP Status}) + 0.763 (\ln(\text{Production Budget})) + 0.847 (\text{Animated Status}) + 1.087 (\text{Disney Status}) + 14.634$

Model 1: Revenue as Dependent Variable

Function:

$$y = 0.5x_1 + 0.763 x_2 + 0.847x_3 + 1.087x_4 + 14.634$$

IP Status and Average Revenue (\$USD) after controlling the Other Factors				
Control Variables are set with the average				
IP Status (1 = with; 0 = without)	Budget (\$m)	Star Power	Disney Status	Revenue (\$USD)
1	24.264	0.6	0.15	83,481,418.45
0	24.264	0.6	0.15	50,623,062.99

Revenue Percentage Change

logged slope of IP = 0.5

$$e^{0.5} = 1.65$$

65% increase

There is a **65% average increase** in revenue from average films without IP to films with IP.



IP Status (x) vs. Revenue (y) Regression Line:

$$y = 0.5x + 17.74$$

IP Status Effect on Worldwide Box Office Revenue

Green = without IP; red = with IP; blue = regression line

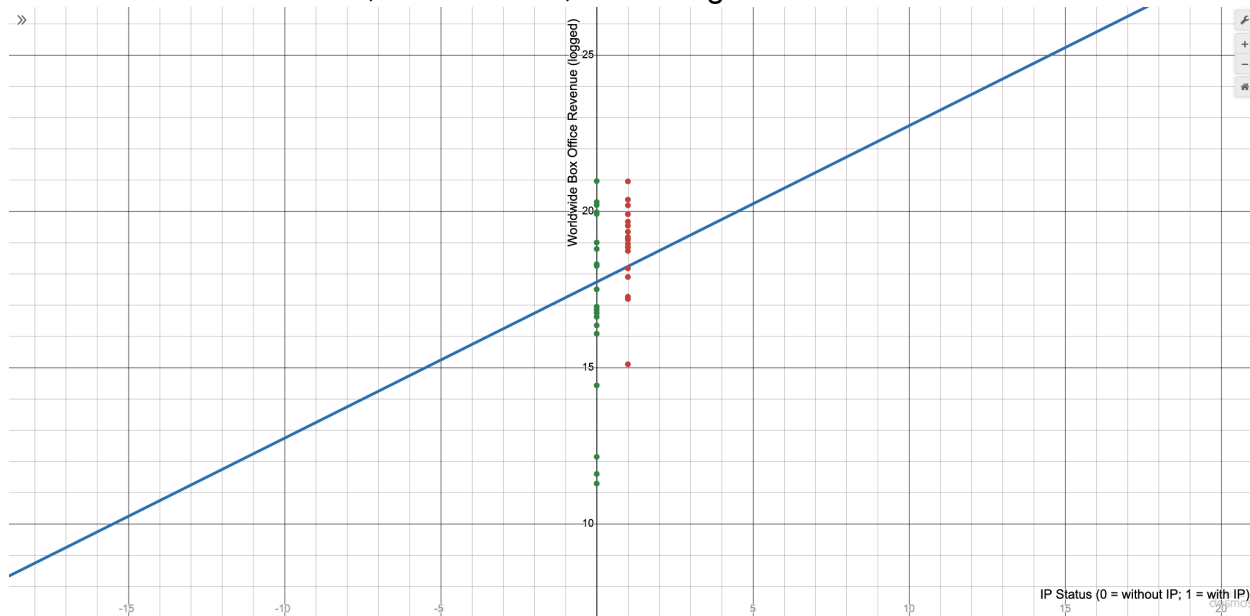


Figure 1

Average Rating as Dependent Variable

Function:

$$y = -3.26x_1 + -1.024x_2 + 1.547x_3 + 4.5x_4 + 69.467$$

IP Status and Average Rating after controlling the Other Factors

Control Variables are set with the average

IP Status (1 = with; 0 = without)	Budget (\$m)	Star Power	Disney Status	Rating
1	24.264	0.6	0.15	64.54690392
0	24.264	0.6	0.15	67.80356154

Change in Rating

Slope of IP = -3.26

3.26 decrease

There is a **3.26 decrease** in average rating from average films without IP to films with IP.

IP Status (x) vs. Rating (y) Regression Line:

$$y = 67.8 - 3.26x$$

IP Status Effect on Average Film Rating

Purple: without IP; orange: with IP; red: regression line

*Figure 2***Key Findings:**

From the function of revenue as the dependent variable, we can identify that after the other variables are controlled, the rate of change for IP status is 1.65, or a 65% *increase*. This indicates that there is a 65% increase of revenue when IP status changes from without IP to with IP, no matter if the controlled values have varied. From the graph in *figure 1*, we can also observe that the linear regression line is a positive slope going upwards, showing an increase in its revenue. When studying the data points for without IP (green) and with IP (red), we can identify that the red points are generally all higher than the green points, with some green points going as low as 12 logged revenue, which is \$162,754.79USD. Whereas the lowest red points are at least at a higher value of \$3,269,017USD.

From the equation of taking average rating as the dependent variable, we can observe that after the other variables are controlled, the rate of change for IP status is calculated -3.26, meaning a *decrease* of 3.26 points from films without IP to films with IP. This is also visible on the graph on *figure 2*, which is presented with a gradual, negative-sloped, red regression line. When studying the data points, we can see that the purple points (without IP) are all slightly higher than the orange points (with IP), indicating that the musicals without IP are generally achieving higher points than musicals with IP.

Discussion

Financial Success

The results from the data points collected with revenue as the dependent variable supports the first hypothesis, that musical films with IP will perform higher box office revenue than musical films without IP. The reasons for this occurrence are the theories and marketing strategies that granted benefit only to the films with IP. A film that has an existing IP is capable of releasing more promotions and marketing strategies in regards to this existing fanbase, than a film that does not even have an existing IP to work with. This can be further elaborated with the utilization of two theories by film studios: Signaling theory and Electronic Word-of-Mouth.

First, the signaling theory, first coined by Michael Spence in 1973, is a fundamental concept that explains scenarios of two parties, with a sender having access to certain information that can benefit the decision-making of the receiver (Connelly et al., 2025). This theory is applied to many different fields, but it is especially prominent in consumer behaviors. In the context of film advertising, the film studios are the sender while the viewers are the receiver. When a film has an IP, they are releasing a film in an already well-established fanbase. This allows the studios to advertise widely in a way that signals the fanbase and appeals to the large number of viewers in this fanbase (Ji et al., 2023). For example, before the release of *The Phantom of the Opera* (2004), there were many advertisements released that signaled how the film will be an adaptation of the stage musical, including trailers, posters, and pre-release interviews. These signals were very effective in attracting the fans of this well-known Broadway musical (Metacritics). On the other hand, films without IP will be less capable of utilizing signaling theory in the marketing of its film, because there is no existing information from IPs that they can build their advertisements around; all information that they release will be fresh and new to the viewers.

Second, electronic Word-of-Mouth (eWOM) is the theory that can immensely stir up both the critical and financial success of musical films with IP. This theory refers to the sharing of experiences, opinions, and relevant knowledge about products or services through electronic media and online platforms (Wu, 2014). As words spread throughout the internet about an upcoming release of a film that has an existing IP, it provides the audience with something to expect and discuss, such as “Who are the actors to play these well-beloved characters that fans love?” or “Will this film be an adaptation, sequel, or a new franchise with a twist of the previous IP films?” Whether these discussions are positive or negative can also greatly determine the success of the film, so film studios will usually choose an IP that has a positive review to base the new film on (Ullah et al., 2025). Therefore, films with IP will generally have high box office revenue in the beginning of the release, since audiences are intrigued to watch how the film will turn out. This can be proven with the results of the data, which shows films with IP performing 65% higher revenue than films without IP. Despite the financial success in the beginning of the movie release however, things can take a huge turn a while *after* the movie is released. As the viewers that had watched the actual film and left concerning remarks and comments on the internet, these comments can influence the decisions of the rest of the viewers on whether to watch it or not. This is when the rating of the film can get affected negatively.

Critical Success

The results with average rating as the dependent variable has *refuted* the hypothesis, which states that average rating will be higher with films with IP. The regression line of *figure 2* shows a gradual decreasing slope of only 3.26-out-of-100 difference. The reason that films without IP will perform higher average rating, can be due to the signaling theory, electronic word of mouth, The “Stealth” Musical, and the Expectation Disconfirmation Theory.

For films with IP, audiences would oftentimes build certain expectations and standards of how they expect the film to turn out based on the previous IP films before the film is released. As the film gets released and the expectations that the audience had wasn’t met, it can cause serious negative reviews and ratings that can detriment the film’s critical success. For example, the musical film *Cats* (2019) received countless backlash and criticism, despite the success of the Broadway stage show. It was criticized for its unsettling visual effects, thin plot, and bizarre tonal choices. The stage show that was known for being vibrant, electrifying, joyous, and breathtaking, became a complete joke as it got adapted into the film (Rotten Tomatoes). This can leave negative reviews that can be extremely detrimental to the film, as other audiences would be discouraged to watch it. On IMDb and Metacritic, the film *Cats* has an audience rating of only 2.8/10, and a critics’ rating of 38/100, both reflecting the audience and critics’ negative reviews on it. As less and less audiences are paying tickets to watch this movie, this film also faced financial failure, with a budget of 100 million, but only earning world wide box office revenue of 75.5 million USD (IMDb).

Additionally, the “Stealth” Musical phenomenon can become another reason for audiences becoming disappointed as the actual film gets released. The “Stealth” Musical is a term that refers to the phenomenon where studios intentionally hide a film’s musical identity from trailers and marketing to avoid alienating the viewers who dislike the genre. This is due to the hurdle that many Hollywood studios are facing – musical films are struggling to reach a broad demographic, especially young men (Goffe, 2023). This is actually a very prevalent issue occurring, as many musical films release trailers that are full of dialogues and only some occasional singing clips that are often disguised as background soundtracks that do not reveal the signal that the film would be a musical. While certain IP films that are adapted from stage productions would have audiences knowing that it will be a musical, some other IP categories like adapting from books, TV shows, or franchises, wouldn’t have received the signal if not explicitly mentioned. This leads to many audiences feeling disappointed as they realize the film is not what they had expected. An example of this is *Into the Woods* (2014) that omitted large parts of singing in its trailer, leading audiences who do not like musicals to be disappointed.

As we look into films without IP, we see that for these films, the audiences usually have nothing to expect of this movie. There are almost no signals that the audiences can rely on to attract them to watch it. Hence, this creates expectation Disconfirmation theory, which suggests that our satisfaction or emotional response is determined by the gap between our initial expectations and reality (Schiebler, 2025). When the film turns out to be masterclass-level, the contrast between that low expectation and the brilliant reality creates this sudden, positive discrepancy that heightens the feeling of delight far beyond what you would experience if this film had an IP. A great example is *Lalaland* (2016) that did not have any existing IP. The film received an average rating of 85.6, with praises on its directing, color schemes, lead chemistry,



and thematic depth. But when it just got released, many viewers had hesitated to watch it, with only \$881,104 weekly gross, streaming in just 5 theaters (Box Office Mojo). However, with the countless positive reviews and the power of the electronic Word of Mouth, the film eventually expanded to more than 3236 theaters, finishing with a \$447 million worldwide revenue, and following heavy Oscar momentum (The Numbers).

Disney as the IP

It is important to note the “Disney” effect that made many Disney films have high revenue during its opening week even when they are original films. The Disney film studio is the IP itself. They have built such a high reputation and brand image over the century that made its audience become attached to the brand that it is not about the film anymore. This is an example of the brand equity theory, in which Disney had built a brand that is familiar, recognizable, connected, relatable, trusted, loyal, and of high-quality, that customers are willing to buy anything by Disney, including tickets to watch their films (Allen, 2024). In this case, no matter how fresh and new the Disney original films are, they can still ensure that large audiences will pay tickets to watch their movie, simply because they are Disney. They have such a large market base that it is incomparable with the other film studios. Some blockbuster Disney films are Frozen (2013) with estimated revenue of over \$14 billion, Tangled (2010) with estimated revenue of over \$591 million, and Aladdin (2019) with estimated revenue of over \$1 billion. Though it is also crucial to note that these films often have a large value in its production budget, because they are such a huge dominant film studio. The “Disney Effect” in the data was used to control these billion-dollar films, so they are at a more comparable level with the other films.



Limitations

Some limitations of this experiment and methodology includes not having enough data points (only 40 musicals); understanding how some musical films are limited to be played only on smaller theaters, not worldwide theaters, making the data incomparable; and not considering some of the other more nuanced and subjective factors that can also affect revenue and rating, such as whether a film is animated, whether the film is released during the summer, the director of the film, the storytelling, setting, etc.

Conclusion

After this research, it can be concluded that:

1. Films with IP have higher worldwide box office revenue than films without IP, due to the amounts of signaling and advertising that the studio is able to reveal prior to the film release.
2. Films with IP have lower average rating than films without IP, because of the high expectation build-up and wrong signal that leads to a greater crash, compared to films without IP that have zero expectations.
3. Average Rating can impact the box office revenue, as audiences determine whether to watch a movie based on the reviews and ratings.

A film with IP can most likely guarantee a strong opening week for the film financially, as audiences are hot in curiosity and interest to buy tickets to watch. But after a few weeks, the quality and the audience's enjoyment of the film starts to greatly matter, in which the ratings and reviews can really either benefit or detriment the film's success, both critically and financially. Hence, while films with IP have the upper hand for the first few weeks, many films without IP can start to increase on its critical and financial performance a few weeks after the film release, and possibly surpass even the films with IP.

As this research is delved deeper, it becomes essential to research and experiment the influence that some other factors, such as star power, animated status, production budget, can have on the financial and critical success of a film. Additionally, while this research studies how IP, such as adapting stage productions, can affect films, the opposite can also be studied, of how the IP of films can affect stage productions, such as Mean Girls and The Spiderman Broadway show. How are they performing in the realm and industry of stage musicals?

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