

Studying Films Using Digital Humanities Research Method

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Abstract This study aims to explore its potential as research material for analyzing Indian cinema using quantitative research methods.

Mainstream film research is centered on “qualitative research,” which analyzes works of specific film directors. However, in qualitative research, the arbitrary selection of these works and the director should be appropriate for maintaining the aptness of the analysis.

To compensate for the weaknesses of qualitative research in film research, digital humanities (DH) is used, which is a quantitative research method employed to examine word frequency and analyze text in studies of English literature and drama. I aim to adopt this method for film research and consider new possibilities for film research.

Key words film studies, digital humanities, quantitative research, qualitative research, India

I. Introduction

I decided to take a closer look at the films when I was involved in subtitling and supervising Indian films. Although it was an entertaining movie with songs and dances, Indian social and cultural events were depicted in the storyline. As there was a limit on the number of characters, I wondered whether to reflect the fragments in the subtitles while finding a suitable expression for Indian society.

A movie is a medium that impresses people as a work of art and reflects the cultural and social conditions of the country of origin. Moreover, movies have great potential to be used as research material. In addition to the research theme of “Cultural Adaptation of Christianity,” I want to take up Indian films as the subject of my study.

However, there were many hurdles to studying Indian cinema. “*Muthu, Dancing Maharaja*,” which was released in Japan in June 1998, became so popular that it was called a social phenomenon, creating a situation where Indian films were successively screened. At this time, Indian films were often introduced as “masala films.” By repeating this phrase, a typical stereotype of Indian cinema was created, thus negatively affecting the ambiance of discussion about research on Indian cinema.

Even so, I continued to study films inconspicuously. As film studies are not regarded as a serious research area, I experienced something that went against research ethics, without specifying the source and was struck by its absurdity. Taking Indian cinema as a research topic continues to have invisible barriers.

However, the direction of Indian cinema has recently

changed. With an increasing number of Indian films being screened in Japan with serious content, prominent film critics often introduce Indian films in their articles. Furthermore, the number of people who categorize an Indian movie into a “Masala movie” is decreasing. Thus, the hurdle to studying Indian films seems to have dropped.

This presentation explores its potential as research material for analyzing Indian cinema using quantitative research methods.

II. Status of Film Studies

Movies are popular media. However, even in Europe and the United States, where film studies are advanced, and unlike the seven areas of “music, painting, poetry, theater, dance, architecture, and sculpture,” films are not regarded as an established art. Backland, a Reader (associate professor) at Oxford Brookes University who teaches film studies, insists that studying film is not inferior to studying other art forms (Backland, 2019, pp. 1–10).

The history of cinema began in the second half of the 19th century. In 1893, Thomas Edison invented the Kinetoscope, and in 1895, the Lumière brothers (Auguste and Louis Lumière) projected moving pictures on the screen, which is considered the origin of films.

In the 20th century, films began to be studied as a new research area. Nevertheless, the importance of the film industry was recognized earlier in the West, and in the early 20th century, specialized educational institutions for film production and research were established. Many universities and graduate schools have created an environment where students can take up filmmaking and film

studies.

In 1919, the All-Union State Institute of Cinematography (now the All-Russian State University of Cinematography) was established in Moscow as the world's first specialized educational institution for film research. In 1943, in France, the French Academy of Higher Films (L'Institut des hautes études des cinématographiques), now known as La Fémis (École nationale Supérieure des métiers de l'image et du son, the National School of Audiovisual Arts), was established. The MGR Film Television Institute in Tamil Nadu, India, uses the school syllabus of this institution.

In the United States, the School of Cinematic Arts (SCA) was founded in 1929 with the Academy of Motion Picture Arts and Sciences. The USC School of Cinematic Arts is said to be one of the best film education institutions in the world. George Lucas, who directed Star Wars, is a graduate of this school. The School of Theater Film and Television, a public film research and education institution, was established at the University of California, Los Angeles, in 1947. Prominent directors, screenwriters, producers, and actors were active as its graduates.

On the contrary, film studies in Japan are lagging behind those in Europe and the United States. In 2005, as a national higher education institution, the Graduate School of Film and New Media was established at the Tokyo University of the Arts Graduate School.¹ Even at Tokyo University of the Arts, which is a leader in the Japanese artistic circle, the Graduate School of Film and New Media was founded 86 years after the establishment of the National Film University of the Soviet Union. Although it is a latecomer to Europe and the United States, director Ryusuke Hamaguchi, who won four crowns for "Drive My Car," including the Screenplay Award at the 74th Cannes International Film Festival, is a graduate of this institution.

III. Significance of Analyzing Movies with Quantitative Research Methods

The mainstream of film research is centered on "qualitative research," which focuses on and analyzes specific works and works of specific film directors. For using the characteristics of qualitative film studies, I use the case of Warren Buckland's *Teach Yourself Film Studies* (Buckland, 2003), an introductory book on film studies.

Warren Buckland describes researchers studying films, as given below:

"In studying films, film scholars and film critics end up describing and/or analyzing them" (Buckland, 2003, p. 2).

According to Buckland, "description" elaborates on the content of a movie, or what you see.

"Analysis" examines the format or structure of the entire movie. In addition, Clive Bell devised a "significant form" as an indicator to distinguish between "good movies" and "bad movies." The following is a description of how to distinguish "significant form."

"How do we recognize significant form? You need to train yourself to appreciate the special qualities of a film or each scene in a film" (Buckland, 2003, p. 3).

In Chapter 3 of the book "Film authorship: The director as auteur," François Truffaut, Alfred Hitchcock, and Wim Wenders, three directors, are taken up, and each work is analyzed. The style and pattern of the work are analyzed. In other words, the movies of the three directors are deeply studied.

Specifically, the position of the camera, the camera movement, how the subject is cut out as an image (close-up, long shot), and the shooting technique (long rotation, deep focus) should be considered. Understanding the settings of the image is the priority, and the work is designed to determine its meaning.

Qualitative research is characterized by the ability to make new discoveries and form new perspectives by delving deeply into discussions about works and directors based on the insights, experiences, and interests of researchers.

In qualitative research, the selection of works and directors may be arbitrary. However, if the selection of works is inappropriate, the aptness of the analysis may be affected. In addition, there is a risk of falling into impression criticism such as "like" or "dislike" about a specific work or director's work (Buckland, 2003, pp. 5–6). Moreover, the number of samples to be analyzed is small, and it has a weakness in terms of capturing a movie from a social context without subjectivity.

To compensate for the weaknesses of qualitative research in film research, Digital Humanities (DH) is employed as the research method, which is used in word frequency and text analysis in research on English literature and drama. I aim to adopt it for film research and consider new possibilities for studying films (Okamitsu et al., 2021, pp. 20–21).

First, to introduce quantitative research methods, I will filter and consider the income and ranking data of highly reliable information sites. The characteristics of the quantitative research method include a large number of movies to be analyzed and the unarbitrary selection of movies.

The advantages of using quantitative research methods for film research are that it overcomes the weakness of qualitative research, with the selection of the target film being unarbitrary, thus eliminating the subjectivity of the analyst and achieving objectivity by using the data.

The data used for this analysis was collected on July 25, 2019, from a movie information site called Box Office India.²

Box Office India is an Indian movie website that started on June 10, 2003. The domain privacy policy aims to maintain the anonymity of the owner. The website provides information on the domestic and international box office performance of Hindi movies, which is updated in a timely manner.³

Information from 1940–1999 is archived, and information from 1993 to the present (2021) is posted while being regularly updated. Box Office India not only lists the domestic rankings of movies, but also lists the ranked movies, release years, overseas rankings, income, screening times, genres, and the names of directors and music directors.

IV. Trends in Indian Movies (Hindi Movies) from the Perspective of Income.

Here, I filter the data on Box Office India's income from 1994 to 2017 and consider trends in the Indian film industry. The movie targeted by Box Office India is produced in Hindi.

Table 1 summarizes the domestic income and ratio of Indian films (Hindi films) from 1994 to 2017, overseas income and its ratio, and total income.

The total income, including domestic and foreign income, was about INR 5 billion (4,962,240,750) in 1994, which increased to INR 50 billion (48,972,619,000) in 2017. The total revenue in 2017 was about 10 times that of 1994, indicating that the Indian movie market is steadily expanding while considering the inflation rate during this period. The peculiarities of the increase in total revenue were over INR 10 billion (11,291,943,000) in 2005, over INR 20 billion (21,571,933,750) in 2010, and over INR 30 billion (36,479,659,438) in 2012. However, it exceeded INR 40 billion (44,033,375,000) in 2013.

Figure 1 shows the changes in the total income. In 2006 and 2010, the slope of the polygonal line became sharper, indicating that the total income increased significantly compared to the previous year. The total revenue in 2006 was about INR 16.5 billion, an increase of more than INR 5 billion from about INR 11 billion in 2005. The total revenue of about INR 21.5 billion in 2010 increased by

Table 1. Domestic and foreign Box Office revenues of Indian films and their ratios

Unit: ₹ (Indian rupee)

Year	Domestic Box Office	%	Oversea Box Office Revenue	%	Total Box Office
1994	4,744,500,000	95.6	217,740,750	4.4	4,962,240,750
1995	5,664,000,000	95.0	299,799,000	5.0	5,963,799,000
1996	5,564,100,000	97.0	171,099,500	3.0	5,735,199,500
1997	7,320,700,000	93.7	490,070,250	6.3	7,810,770,250
1998	6,566,010,000	90.7	674,802,250	9.3	7,240,812,250
1999	7,995,700,000	87.6	1,126,936,000	12.4	9,122,636,000
2000	8,407,600,000	87.9	1,158,196,750	12.1	9,565,796,750
2001	8,476,300,000	85.8	1,405,760,350	14.2	9,882,060,350
2002	7,312,770,000	83.4	1,458,893,250	16.6	8,771,663,250
2003	7,435,900,000	84.1	1,406,531,250	15.9	8,842,431,250
2004	7,508,300,000	82.4	1,607,311,500	17.6	9,115,611,500
2005	8,952,700,000	80.3	2,201,043,000	19.7	11,153,743,000
2006	12,757,300,000	76.9	3,827,196,750	23.1	16,584,496,750
2007	14,093,700,000	80.6	3,401,548,500	19.4	17,495,248,500
2008	14,316,000,000	81.0	3,363,151,500	19.0	17,679,151,500
2009	14,915,800,000	80.8	3,535,149,750	19.2	18,450,949,750
2010	17,749,700,000	82.3	3,822,233,750	17.7	21,571,933,750
2011	21,356,900,000	83.9	4,100,480,000	16.1	25,457,380,000
2012	30,469,600,000	83.5	6,010,059,438	16.5	36,479,659,438
2013	35,405,530,000	80.4	8,627,845,000	19.6	44,033,375,000
2014	34,484,300,000	80.4	8,382,361,250	19.6	42,866,661,250
2015	36,517,400,000	77.3	10,741,489,750	22.7	47,258,889,750
2016	36,132,100,000	76.0	11,407,816,250	24.0	47,539,916,250
2017	39,158,500,000	80.0	9,814,119,000	20.0	48,972,619,000

Source: Based on data from Box Office India.

about INR 3 billion from about INR 18.4 billion in 2009. Although the total income ratio of the domestic market has temporarily declined, the overall income has risen, indicating the growth of the film industry.

Next, I describe the changes in domestic income. Domestic income was about INR 5 billion (474,500,000) in 1994, which exceeded INR 10 billion (12,774,800,000) in 2006 INR 20 billion (21,401,000,000) rupees in 2011, and INR 30 billion rupees every year since 2012. Revenue in 2017 was close to INR 40 billion (39,158,500,000), which was approximately eight times that of 1994 (Table 1).

Figure 2 is a line graph showing the visualization of domestic income for each year. The inclination of the line graph sharply increased after 2006 and 2010, and profits increased sharply compared to 2005 and 2009. The inclination of the line decreased with a decrease of INR 1 billion in profit compared to 2014. Figure 2 clearly shows

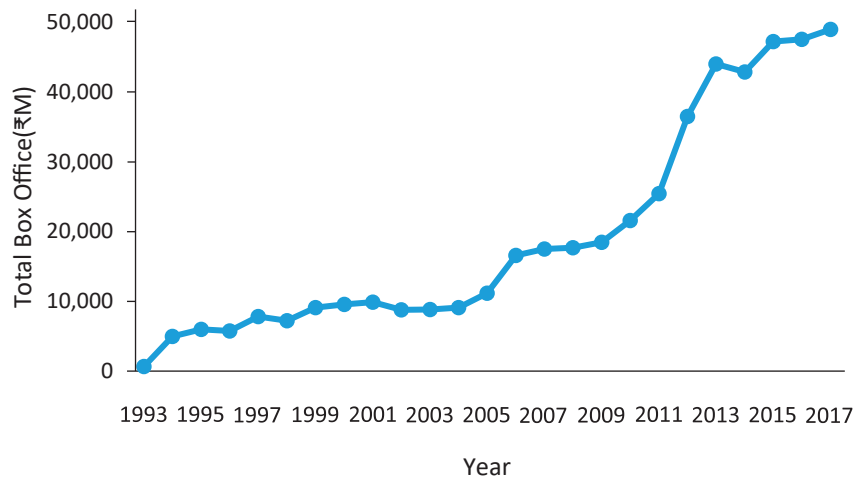


Figure 1. Transition in total Box Office revenue for Indian films from 1994 to 2017
Source: Based on data from Box Office India.

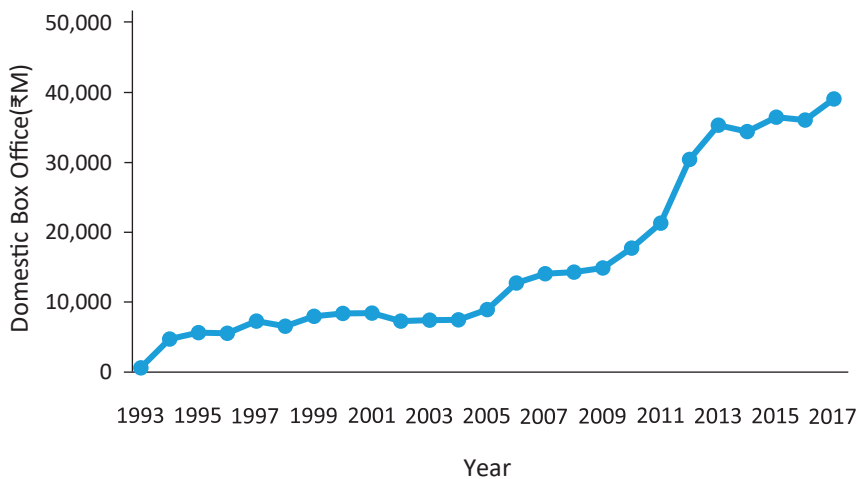


Figure 2. Transition in domestic Box Office revenue for Indian films from 1994 to 2017
Source: Based on data from Box Office India.

whether domestic profit will increase or decrease.

Next, let me consider changes in overseas income. The overseas revenue was only about INR 200 million (217,740,750) in 1994, but exceeded INR 1 billion (1,126,936,000) in 1999, INR 2 billion (2,201,043,000) in 2005, and INR 3 billion (3,827,196,750) in 2006. It exceeded INR 4 billion (410,480,000) in 2011, INR 6 billion (60,010,059,438) in 2012, INR 8 billion (8,627,845,000) in 2013, and INR 10 billion (10,741,816,250) in 2015 (Table 1).

Overseas income in 2017 was about INR 10 billion (9,814,489,750), which was about 45 times that in 1994. Figure 3 shows a line graph of the changes in overseas income over time.

Regarding the transition of overseas income, although sales decreased in some years, the polygonal line generally showed a gradual upward slope. This indicates the gradual growth of the overseas market for Indian films (Figure 3).

In the past, the overseas markets for Indian films were limited to the Middle East and Southeast Asia, where there were many migrant workers from India. However, the Indian film market extended beyond traditional overseas markets to China, Japan, South Korea, North America, Europe, and South America, where the main audience is people without an origin in India (Okamitsu and Yamashita, 2010, pp. 44–80). In other words, the audience of overseas markets for Indian films in recent years has been increasing. The expansion of overseas markets has become an essential factor in the growth of the Indian film industry.

However, actually the domestic market supports the Indian film industry. The ratio of domestic income to total income fluctuates between 97% (1996) and 76% (2016), with domestic income being higher than overseas income. Figure 4 shows the ratio of domestic to overseas income.

In other words, Indian cinema is a media product that

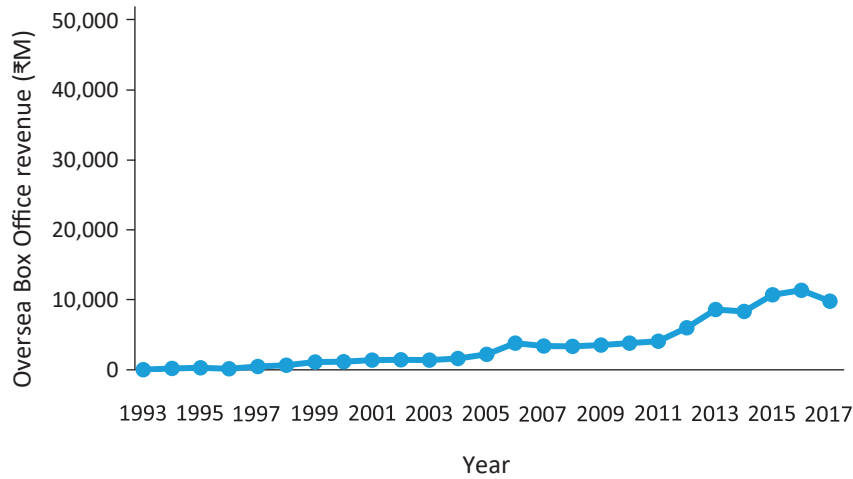


Figure 3. Transition in overseas Box Office revenue for Indian films from 1994 to 2017
Source: Based on data from Box Office India.

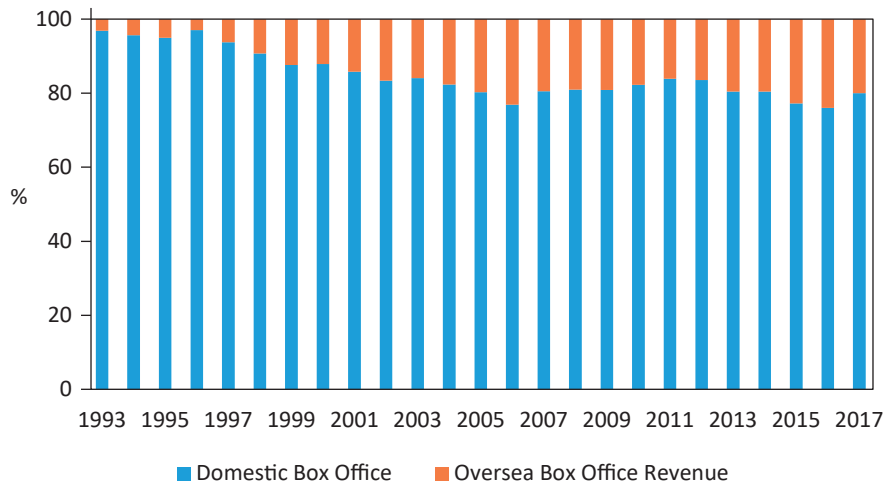


Figure 4. Breakdown of domestic Box Office revenue and overseas Box Office revenue
Source: Based on data from Box Office India.

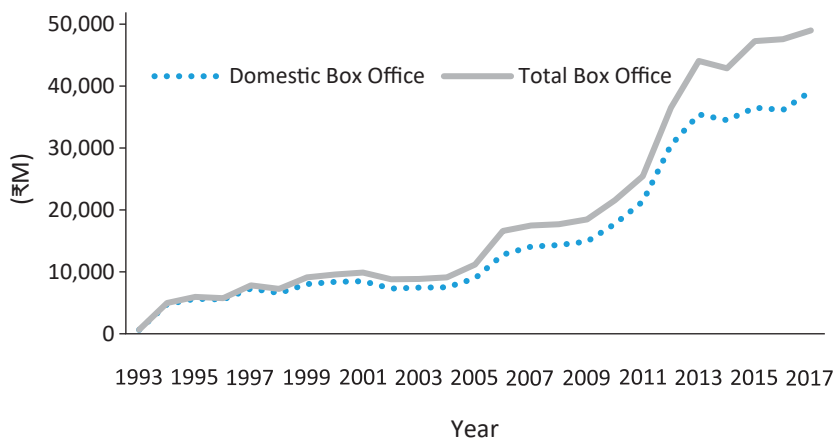


Figure 5. Transition in both total Box Office revenue and domestic Box Office revenue for Indian films from 1994 to 2017
Source: Based on data from Box Office India.

is expanding its overseas market but is supported by an Indian audience (Table 1, Figure 4). Figure 5 shows the combination of gross income and domestic income. The

slope of total income is linked to the increase and decrease of domestic income, and the primary income of Indian movies depends on domestic income.

V. New Trends in Rankings of Box Office India Rankings

Indian films have an overwhelmingly high income in the domestic market, but overseas markets have also grown to support the film industry. In recent years, movies with higher overseas than domestic rankings and higher overseas than domestic income have been ranked in box office India. Here, I will consider movies with higher overseas than domestic rankings and higher overseas than domestic income.

1. The appearance of movies with higher overseas than domestic rankings and higher overseas than domestic income

Currently, Indian film revenue is overwhelmingly higher in the domestic market (Okamitsu, 2021, pp. 84–86). As mentioned above, the overseas market is also expanding. The ratio of overseas markets to total revenue was only 4% in 1994, which increased to more than 20% in 2013 (Table 1).

With the increasing importance of overseas markets in accelerating the Indian film industry, in 1999, the overseas ranking of movies was higher than the domestic ranking by 20 or more, and 20% or more of overseas income was ranked in Box office India. Table 2 lists the movies

that met these requirements. There was one such movie in 1999, one in 2000, one in 2001, three in 2002, three in 2003, two in 2004, three in 2006, and two in 2013, one in 2016.

The 17 films listed in Table 2 are different from art films that are highly evaluated overseas but could not be screened in India.

The representatives of Indian art films were directed by Satyajit Ray (1921–1992). *Pather Panchali* (1955), *Aparajito* (1956), and *Apur Sansar* (1959) are called the Apu Trilogy. In 1992, Satyajit Ray received the Academy Honorary Awards and Bharat Ratna, the highest Indian civilian award. However, his works are shown at places where Indian film connoisseurs gather, such as film festivals and societies. Some people are not aware of Satyajit Ray's work, and many do not know his name (Okamitsu and Yamashita, 2010, pp. 134–139).

However, the 17 films in Table 2 have different experiences than art films, being shown in theaters across India and achieving commercial success. Not only are these works popular overseas, but they are also among the top films in domestic rankings of Box Office India because they are supported by the audiences.

Six out of 17 films, *Karobaar* (2000), *OM Jai Jagadish* and *Kinte Door Kinte Pass* (2002), *Bollywood Hollywood* (2003), and *Hawayein* (2006), *Humko Tumse Pyaara Hai*

Table 2. Works whose overseas ranking is 20 or more and higher than domestic ranking as well as the ratio of overseas Box Office revenue is 20% or more

YEAR	Title	India	Overseas	Ranking difference	Overseas income ratio
1999	1947 Earth	39	12	27	31.9
2000	Karobaar	46	26	20	31.4
2001	Zubeidaa	34	11	23	32.6
2002	Kitne Door ... Kitne Paas	49	24	25	31.4
2002	Om Jai Jagadish	33	12	21	27.1
2002	Filhaal...	48	27	21	24.3
2003	Bollywood Hollywood	49	6	43	75.1
2003	Hawayein	50	16	34	63.6
2003	Dil Ka Rishta	29	7	22	39.1
2004	Phir Milenge	45	19	26	32.8
2004	Raincoat	46	24	22	25.6
2006	The Mistress Of Spices	50	27	23	81.1
2006	Provoked	42	12	30	74.5
2006	Humko Tumse Pyaar Hai	49	26	23	65.8
2013	The Lunchbox	39	3	36	72.0
2013	Gori Tere Pyaar Mein	44	15	29	38.9
2016	Parched	50	24	26	83.5

Source: Based on data from Box Office India.

(2013), and *Gori Tere Pyaar Mein* (2013) have a song and dance sequence. The remaining 10 films, without such sequences, have social issues and personal internal conflicts as themes.

Hawayein (2003) stands out among films with songs and dance sequences. Behind the story of *Hawayein* is Operation Blue Star, in which Indian troops attacked the Golden Temple in 1984 to eliminate Sikh militants, resulting in the killing of Sikhs and the assassination of Prime Minister Indira Gandhi. *Hawayein* is the tragedy of a young man who is at the mercy of these events. The main character, Sarabjeet, was a music-loving college student, but became one of the most wanted terrorists after Operation Blue Star and was shot dead in the turmoil. *Hawayein* deals with a serious theme, although it incorporates the essential elements of a commercial film, that is, song and dance sequences.

2. Indian domestic market pioneered by *Earth*, a movie without songs and dances

Earth (1998) is a pioneering movie that has both high overseas rankings and income. *Earth* is different from existing entertainment Hindi films. It has achieved commercial success in the domestic market. In 1999, *Earth* ranked 12th in the overseas ranking and 39th in the domestic ranking. Table 3 shows *the Earth's* domestic and international rankings and the ratio of overseas income to total income.

Earth was directed by Deepa Mehta (1950–), famous for the trilogy of *Fire* (1996), *Water* (2005), and *Earth*. Aamir Khan (1965–), who was at the height of his popularity at the time, starred on *Earth*. Notably, there was no shortage of topics regarding this film such as AR Rahman (1967–), a leading Indian composer, was in charge of music direction, and was widely featured in the media. This work has been officially exhibited as an Indian representative of the 1999 Academy Award for Best Foreign Language Films.

Earth is set in Lahore, 1947 with Lenny, a pediatric paralyzed girl loved by her parents in a wealthy Pulsi family, and Shanta, a beautiful Hindu woman who is Lenny's nanny. Two Muslim men, Dil Navaz and Hassan, both of them love Shanta. The historic turmoil of India-Pakistan separatism leads to a sad story that tears them apart.

India-Pakistan independence produced innumerable

refugees and caused many casualties due to religious conflicts. *Earth* depicts a sad ending with an interreligious romance between Hindu woman and Muslim man. It does not have a song-and-dance sequence with the protagonist appearing in flashy costumes and is without a happy ending that the public wants in entertainment films. *Earth* is quite different from Indian entertainment films of the time

Despite the seriousness of the content, *Earth*, unlike art films in India, had a domestic revenue of around INR 63 million (62,700,000) and was commercially successful in the Indian domestic market. *Earth's* commercial success in the domestic market has shown that there are many audiences in India who watch movies without a song and dance sequence, dealing with very serious themes. In a sense, *Earth* overturned the conventional wisdom of Indian cinema and proved that commercial films with serious content would be commercially successful even in the Indian domestic market and open the door for films of this genre to be produced as commercial films. Moreover, it paved the way for the domestic screening of this kind of film.

3. Appearance of works with overseas income exceeding 50%

The ratio of Indian films' overseas income was only 10% from 1994 to 1998. However, the ratio of overseas income to total income gradually increased, reaching over 20% in 2006 (Table 1).

The overseas market for Indian films has become an important part of supporting the industry. In 2003, works with an overseas profit ratio of over 50% appeared for the first time. Figure 6 shows the transition of the ratio of overseas income to total income. As of 1994, most works had an overseas income of 10% or less, but the number of works with a high ratio of overseas income gradually increased.

Table 4 shows a list of movies with an overseas income ratio of 50% or more. Those film are *Bollywood Hollywood* and *Hawayein* in 2003, *Mere Jeevan Saathi*, *The Mistress of Spices*, *Provoked* and *Humko Tumse Pyaar Hai* in 2006, *Sadiyaan* in 2010, *The Lunchbox* in 2013, *Parched* in 2016.

Among the works with an overseas revenue of 50% or more, the four works including song and dance sequences are *Bollywood Hollywood*, *Humko Tumse Pyaar Hai*,

Table 3. *Earth's* domestic/overseas ranking and percentage of overseas income

YEAR	Title	India	Oversieas	Ranking defference	Oversea income ratio	INDIA	OVERSEAS	Data Referred
1999	1947 Earth	39	12	27	31.9	62,700,000	29,362,500	Jan. 29, 2019

Source: Based on data from Box Office India.

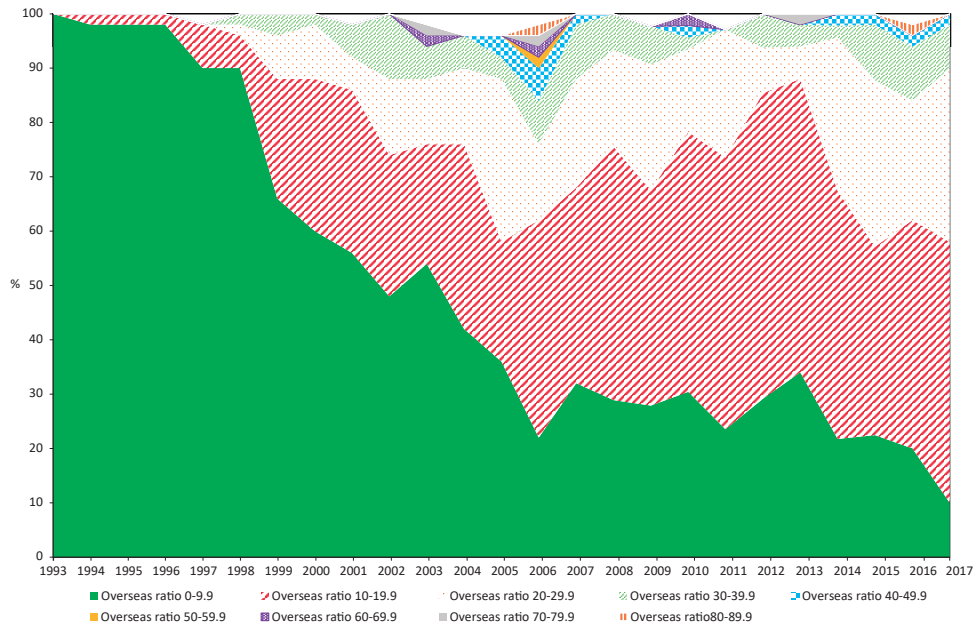


Figure 6. Changes in the overseas ratio of Box Office revenue

Source: Based on data from Box Office India.

Table 4. List of movies with an overseas income ratio of 50% or more

YEAR	Title	India	Overseas	Ranking difference	Overseas income ratio	INDIA	OVERSEAS	Data Referred
2003	Bollywood Hollywood	49	6	43	75.1	27,000,000	81,600,000	Jan. 29, 2019
2003	Hawayein	50	16	34	63.6	13,000,000	22,750,000	Jan. 29, 2019
2006	Mere Jeevan Saathi	41	23	18	56.0	34,400,000	43,807,500	Jan. 29, 2019
2006	The Mistress Of Spices	50	27	23	81.1	6,500,000	27,900,000	Jan. 29, 2019
2006	Provoked	42	12	30	74.5	33,900,000	98,897,500	Jan. 29, 2019
2006	Humko Tumse Pyaar Hai	49	26	23	65.8	14,800,000	28,480,000	Jan. 29, 2019
2010	Sadiyaan	46	39	7	61.4	7,000,000	11,125,000	Jan. 29, 2019
2013	The Lunchbox	39	3	36	72.0	282,500,000	726,020,000	Jan. 29, 2019
2016	Parched	50	24	26	83.5	19,800,000	100,500,000	Mar. 23, 2020

Source: Based on data from Box Office India.

Hawayein, *Sadiyaan*, and *Mere Jeevan Saathi*. *Hawayein*, *Sadiyaan*, and *Mere Jeevan Saathi* include song and dance sequences, but they deal with serious themes and are far from happy endings.

Hawayein, as mentioned earlier, deals with Operation Blue Star.

Sadiyaan is the story of a Sikh couple, at the time of partition of India and Pakistan, who decide to leave Lahore and evacuate to Amritsar in Punjab, raising a Muslim orphan as their child. The grown-up child then knows his true origin and meets his biological parents. This story cannot be told without mentioning the tragic partition of India and Pakistan.

Mere Jeevan Saathi is a thriller in which a man who has a relationship with a woman in an overnight play, despite having a beloved woman in his life, is the main character. A woman does not think of the man as only a playmate

and turns into a stalker, gradually hunting down the man. It is a suspense-like, love-hate drama for both men and women.

Furthermore, the work does not include a song and dance sequence and its overseas income exceeds 50%. It deals with the problems in India while depicting the universal theme. *Parched* and *Provoked* are about women being dominated by men and oppressed as socially vulnerable. *The Lunchbox* and *The Mistress of Spices* are about individuals pursuing their well-being and escaping the norms of society. In other words, even if the context is India, these works are about universal issues and can be accepted by overseas audiences without any discomfort.

Box Office India's recent rankings include a movie that does not have a song and dance sequence. The fact that new types of works are commercially successful even in the Indian domestic market shows that the domestic audi-

ence is diversifying their preferences. In short, the Indian film industry continues to grow, opening up new markets while creating new types of work.

VI. Conclusion

In this study, only Box Office India data is used, with limited analysis content, such as changes in income of Indian movies, changes in domestic and overseas income, and characteristics of ranked movies. Although it is an analysis of limited materials, it presents novel trends and new types of audiences in Indian cinema with data support.

In the future, the consideration of the material of movies should be deepened by adding and combining multiple data, such as the Indian census and economic statistical data, to the analysis target, as well as movie ranking data.

Acknowledgments

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Notes

1. https://www.geidai.ac.jp/departement/gs_fnm/outline (Accessed September 13, 2021).
2. <https://boxofficeindia.com> (Accessed June 19, 2019).
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