Tanking at the Box Office: Impact of COVID-19 Lockdown on Movie Theaters in National Capital Region (NCR), India

Mihir Dhawan

American Embassy School

Abstract

The aim of this research study was to analyze the impact of the COVID-19 lockdown on the movie consumption of patterns of the National Capital Region (NCR) residents, including the relative influence of the factors affecting their willingness to go to the movie theaters before and after the COVID-19 lockdown. An online survey was disseminated by a wide variety of virtual communication and social media platforms to a wide cross-section of residents in the NCR. The results show that the respondents anticipated that they would go to movie theaters far less frequently over the next six months than the six months before the pre-COVID-19 lockdown. Concomitantly, the comparison of the over-the-top (OTT) platform viewing hours indicates that respondents increased the amount of time spent watching movies on these platforms, preferring them to going to movie theaters due to safety, convenience, and affordability. The two factors of health & hygiene, and safety, identified as among the primary factors in influencing the respondents' willingness to go to the movie theater before the lockdown, increased in importance to become the most important factors after the lockdown. Movie quality, the most important influencing factor prior to the lockdown, decreased in importance marginally after the lockdown, while remaining as one of the top three important factors for consumers to go to movie theatres. Food, the least important influencing factor prior to the lockdown, declined the most, possibly due to consumers' heightened risk perceptions of food as a possible source for the COVID-19 infection. Many of the respondents who highlighted concerns about the safety risks of going to a movie theater pointed out their discovery of the benefits of watching movies at home with the family, which allowed for savings and the elimination of worries about the dangers of COVID-19. Concerns about the family's well-being were particularly relevant to the Indian context, as many families live in multi-generational households. They also highlighted that the likelihood of their return to the movie theater would only be augmented by the availability of an effective vaccine or a treatment. These results suggest that movie theaters should invest more in their hygiene and safety protocols (PPE for staff, mask requirement for consumers, social distancing, etc.) and advertise this to the public. They may also have to invest in structural changes to offer viewers a differentiated movie experience such as offering themed screenings, switching to a drive-in model or allowing consumers to experience private screenings in individual rooms, thus distinguishing themselves from OTT platforms.

“Tanking at the Box Office”: Impact of COVID-19 Lockdown on Movie Theaters in National Capital Region (NCR), India

> Mulan is the first blockbuster to go straight to streaming in response to COVID-19 shuttering cinemas.
>
> — Mark Sweney, “Disney Opts for Digital-First Release of Mulan, Shocking Cinema Owners”

Disney’s decision to opt for a digital-first release of a blockbuster, instead of merely delaying it, in the face of the COVID-19 pandemic, is a momentous one. For it goes down in history as the first-ever blockbuster to go straight to a streaming service, amidst the closure of all cinemas in the US (Sweney, 2020).

Until now, production companies had abided by “the long-established business model underpinning the Hollywood blockbuster” of reserving a typical theatrical window of 70–90 days for movie theaters (Sweney, 2020). Multiplexes have traditionally had the exclusive rights to air the movie during this window. Although Disney had insisted that this would not be the start of a new trend, the deviation from a half-century tradition is definitely a cause for alarm for cinema chain owners (Sweney, 2020). Whether Disney persists with this practice or not, there would be no stopping others from following Disney’s lead (Sweney, 2020).

The film industry, estimated at USD101 billion in revenue globally, is one of the largest industries in the world (Escandon, 2020). Of this USD101 billion, Bollywood — India's film industry — contributed approximately USD500 million, a significant number considering the relatively lower purchasing power of the average Indian, compared to moviegoers in other countries. It is often said that Indians are obsessed about two things: Bollywood and cricket. In fact, 191 million people visited PVR, INOX, and Cinepolis (India’s three largest multiplexes) in 2019, with domestic box office collections exceeding its 2018 performance by 14.7 percent (Shashindar, 2019). The movie theater culture in India has been associated with spending quality time with family and friends because the experience is fun and cost-efficient.

However, once COVID-19 broke out and quickly escalated into a worldwide pandemic in early March (Ducharme, 2020), the winning streak of Indian movie theaters came to an abrupt end. With Prime Minister Narendra Modi announcing the closure of all malls and movie theaters due to a national lockdown on March 25th, 2020 (Jain & Jamkhandikar, 2020), multiplexes started to lose money; many may head towards bankruptcy. For example, an ET NOW poll estimated that PVR's revenue would "slump nearly 98%", which could result in a "a loss of INR230 crore (or USD 31.3 million) for the [April to June] quarter [2020] compared to a profit of INR16 crore last year" (Dubash, 2020, para. 1).

In this vacuum, the over-the-top (OTT) entertainment platforms, otherwise known as streaming services such as Netflix and Disney Hotstar, have benefited considerably from the lockdown; in fact, Indian OTT platforms' subscriber base also increased by 80% compared to last year (Kaushal, 2020). The advent of OTT platforms over the last few years had significantly changed the landscape of film distribution and content consumption even prior to the eruption of COVID-19 (Laghate, 2019). Given the price-sensitive nature of the market and the low number of cinema chains per capita in India, the comparatively lower price points of some OTT platforms had been chipping away at the movie theaters' dominance of the movie distribution landscape (Laghate, 2019). Experts have been predicting that OTT platforms will eventually render movie theaters obsolete in the next few years if movie theaters do not change their business model or prices (Laghate, 2019).

The untimely arrival of COVID-19 may have just accelerated this process. With the outbreak of COVID-19 and the lockdown, which had prevented people from going to movie theaters, people have become increasingly comfortable with consuming entertainment content in their homes. It is quite possible that due to the recent lockdown, consumer preferences will change not just for the short term whereby people are afraid to step out of their homes, but also in the longer term whereby consumption of entertainment at home may actually be preferred. According to a PricewaterhouseCoopers report (Sidorov et al., 2018, p. 47), OTT platforms in India are predicted to generate approximately USD823 million in 2022, compared to USD297 million in 2017. While some of this OTT platform growth may be organic, a significant part of this growth is likely to be in the form of gaining market share from movie theaters Already, several new Bollywood movies have been released exclusively on OTT platforms such as *Shakuntala Devi*, *Gulabo Sitabo*, and *Ludo*, all starring big name actors such as Amitabh Bachchan, Vidya Balan, Abhishek Bachchan, Rajkummar Rao, and Aditya Roy

Kapur (Sharma, 2020). For example, *Gulabo Sitabo* has "more than recovered its 30cr budget [~USD4 million] and made a big profit" (Jha, 2020).

While a study on the impact of COVID-19 on entertainment and live events as a whole had been conducted in the US (Full Circle Research and Co. and Performance Research, 2020), no such study had been done in India based on the review of literature. The focus of this study was thus to investigate the impact of COVID-19 on the distribution of movies in the Indian film industry, specifically through the evaluation of the changes in consumer preferences as a result of the pandemic. It is hoped that this examination would help movie theaters identify strategies to entice consumers to return to movie theaters. This may require movie theaters to reconfigure their business models in response to the evolving trends so as to survive and thrive in the longer term.

Description of the Research Study

Research Aim and Research Approach

The research study aimed to evaluate the impact of the COVID-19 lockdown on the Indian movie theaters by investigating the changes in the NCR residents' film consumption patterns and their ratings of the relative importance of the factors in influencing their likelihood of going to the movie theater. A mixed-method approach was used for this research study. Under the quantitative approach, the NCR residents' self-reported ratings of specific movie consumption patterns *before* COVID-19 (actual) and *after* the COVID-19 lockdown (anticipated) were compared as follows:

- Frequency of going to movie theaters;
- Frequency of watching content on OTT platforms; and
- Factors influencing people's likelihood of going to movie theaters: food, screen size, time with family/friends, quality of movie, health and hygiene, and safety.

The multiple sets of hypotheses are presented in the following subsections.

Movie Going Frequency* Before *and* After *COVID-19 Lockdown

1a. **Null Hypothesis**: There is no difference (actual and anticipated) between the mean movie theater going frequency within six months *before* and *after* the COVID-19 lockdown.

1b. **Alternative Hypothesis**: There is a difference (actual and anticipated) between the mean movie theater going frequency within six months *before* and *after* the COVID-19 lockdown.

OTT Watching Hours* Before *and* After *COVID-19 Lockdown

2a. **Null Hypothesis**: There is no difference between the mean number of hours of content watched per week on an OTT platform *before* and *after* the COVID-19 lockdown.

2b. **Alternative Hypothesis**: There is a difference between the mean number of hours of content watched per week on an OTT platform *before* and *after* the COVID-19 lockdown.

Comparison of Relative Importance Between Factors in Influencing Movie Theater Going Frequency Before COVID-19 Lockdown

3a. **Null Hypothesis**: There are no differences between the mean ratings of importance of food, screen size, time with family/friends, quality of movie, health and hygiene, as well as safety, in influencing movie theater going frequency *before* the COVID-19 lockdown.

3b. **Alternative Hypothesis**: There are differences between the mean ratings of importance food, screen size, time with family/friends, quality of movie, health and hygiene, as well as safety, in influencing movie theater going frequency *before* the COVID-19 lockdown.

Comparison of Relative Importance Between Factors in Influencing Movie Theater Going Frequency After COVID-19 Lockdown

4a. **Null Hypothesis**: There are no anticipated differences between the mean ratings of importance of food, screen size, time with family/friends, quality of movie, health and hygiene, as well as safety, in influencing movie theater going frequency *after* the COVID-19 lockdown.

4b. **Alternative Hypothesis**: There are anticipated differences between the mean ratings of importance of food, screen size, time with family/friends, quality of movie, health and hygiene, as well as safety, in influencing movie theater going frequency *after* the COVID-19 lockdown.

Changes of Importance of Individual Factors on Movie Theater Going Frequency* Before *and* After *COVID-19 Lockdown

5a. **Null Hypothesis**: There is no difference between the mean rating of the impact of food on movie theater going frequency *before* and *after* the COVID-19 lockdown.

5b. **Alternative Hypothesis**: There is a difference between the mean rating of the impact of food on movie theater going frequency *before* and *after* the COVID-19 lockdown.

6a. **Null Hypothesis**: There is no difference between the mean rating of the impact of screen size on movie theater going frequency *before* and *after* the COVID-19 lockdown.

6b. **Alternative Hypothesis**: There is a difference between the mean rating of the impact of screen size on movie theater going frequency *before* and *after* the COVID-19 lockdown.

7a. **Null Hypothesis**: There is no difference between the mean rating of the impact of time with family and friends on movie theater going frequency *before* and *after* the COVID-19 lockdown.

7b. **Alternative Hypothesis**: There is a difference between the mean rating of the impact of time with family and friends on movie theater going frequency *before* and *after* the COVID-19 lockdown.

8a. **Null Hypothesis**: There is no difference between the mean rating of the impact of movie quality on movie theater going frequency *before* and *after* the COVID-19 lockdown.

8b. **Alternative Hypothesis**: There is a difference between the mean rating of the impact of movie quality on movie theater going frequency *before* and *after* the COVID-19 lockdown.

9a. **Null Hypothesis**: There is no difference between the mean rating of the impact of health and hygiene on movie theater going frequency *before* and *after* the COVID-19 lockdown.

9b. **Alternative Hypothesis**: There is a difference between the mean rating of the impact of health and hygiene on movie theater going frequency *before* and *after* the COVID-19 lockdown.

10a. **Null Hypothesis**: There is no difference between the mean rating of the impact of safety on movie theater going frequency *before* and *after* the COVID-19 lockdown.

10b. **Alternative Hypothesis**: There is a difference between the mean rating of the impact of safety on movie theater going frequency *before* and *after* the COVID-19 lockdown.

Finally, with the qualitative approach, the respondents offered their perspectives on their reasoning for their likelihood of going to movie theaters in response to two open-ended questions.

Data Collection

An online survey containing a questionnaire that addresses the factors highlighted in the hypotheses above was used to gather data from a wide cross-section of the NCR population (see Appendix A). NCR as a location was deliberately chosen for this research study, since it has a relatively high concentration of multiplex screens in India, i.e. 232 screens constituting 8.4% out of the country's total of 2,750 multiplex screens (Bhowmick, 2016; FICCI & EY, 2019, p. 76). Accordingly, the chosen population set serves as a good representative sample to evaluate consumer preferences; as such, the results of the study may have relevance to other regions in India, particularly metropolitan cities.

An invitation stating the research aim and guaranteeing the anonymity of the respondents, as well as the confidentiality of the data, was issued through WhatsApp, Instagram, and Facebook with a link for potential respondents to access the survey (see Appendix B). Ultimately, 224 respondents participated in the survey.

Data Analysis

Descriptive statistics were conducted for all three quantitative approaches to evaluate the changes in the movie consumption patterns of the NCR respondents *before* and *after* COVID-19 lockdown, in terms of: 1) movie theater going frequency within a six month period; 2) the number of hours per week spent on OTT platforms; 3) changes in the relative influence of individual factors on movie going frequency; and 4) changes in the comparison in the relative influence of the factors vis-a-vis one another on movie going frequency. Eight paired t-tests were run to determine the statistical significance of the results for categories 1–3, while two ANOVA tests were also conducted to compare the relative influence of the factors vis-a-vis one another in influencing movie theater going frequency — one for *before* and the other for *after* the COVID-19 lockdown.

The interpretations of the quantitative data were also considered within a broader context of the responses gathered through two open-ended questions in the survey: while the first question asked how consumers' desire to go to movies theaters was altered by COVID-19, the second question was designed to understand what factors may attract them back to theatres. These questions allowed for a deeper understanding of what concerned consumers and how movie theaters can eliminate or mitigate these concerns. In addition, the external discourse on the subject-matter was also introduced, wherever appropriate, to add further depth to the analyses of the quantitative and qualitative data.

Results and Discussion

In this section, all the results from the statistical analyses, as outlined in the "Description of Research Study" section, are presented and examined in detail. Specifically, the results of the analysis of the changes in the movie consumption patterns of the NCR respondents, as a consequence of the COVID-19 lockdown and the changes in their ratings of the importance of the factors in influencing their movie theater going frequency, are discussed.

Movie Theaters Vs. OTT Platforms

The most direct indicator of the impact of the COVID-19 lockdown on movie consumption patterns is the number of times the respondents went to the movie theater before the COVID-19 lockdown and the number of times they anticipate to go after the lockdown within respective six-month periods. The respondents' mean movie theater going frequency within the six-month period *before* the COVID-19 lockdown (M = 5.18, SD = 4.73) exceeded the anticipated post-COVID-19 lockdown figure (M = 0.95, SD = 2.03) by 4.23 (see Table 1). This is a substantial decline of 82%. Furthermore, the reduction in the mode from 6 (pre-lockdown) to 0 (post-lockdown) is also another meaningful indicator of the adverse impact of the COVID-19 lockdown on the movie theater going frequency.

Table 1

Descriptive Statistics — Actual and Anticipated Movie Theatre Going Frequency Within Six-Month Periods Before *and* After *COVID-19 Lockdown*

	Movie theater (pre)	*Movie theater (post)*
Mean	5.178571429	0.950892857
Standard Error	0.316090271	0.135302516
Median	4	0
Mode	6	0
Standard Deviation	4.730805989	2.025022639

Next, a paired sample t-test was run to evaluate the statistical significance of the change in mean ratings. As presented in Table 2, the change is statistically significant, $t(223) = 12.57$ (higher than the t critical value of 1.97, two-tailed), $p < .01$.

Table 2

Paired T-Test — Actual and Anticipated Movie Theatre Going Frequency Within Six-Month Periods Before *and* After *COVID-19 Lockdown*

	Movie theater (pre)	*Movie theater (post)*
Mean	5.178571429	0.950892857
Variance	22.3805253	4.100716688
Observations	224	224
Pearson Correlation	0.059430816	
Hypothesized Mean Difference	0	
df	223	
t Stat	12.56900282	
P(T<=t) one-tail	4.78804E-28	
t Critical one-tail	1.65171532	
P(T<=t) two-tail	9.57609E-28	
t Critical two-tail	1.970658961	

The respondents' open-ended responses offer further insights into the substantial change between the mean ratings. In general, the respondents, with safety concerns uppermost in their mind, did not plan to go to movie theaters for a long time. As one respondent put it, "Safety and hygiene first and foremost. Out of house entertainment can wait. Will avoid crowded places for another year at least."

Not surprisingly, the fact that there is an in-home alternative of movie entertainment — the OTT platforms — certainly made it easier for respondents to adopt the aforementioned stance. This is evidenced in the increase of the respondents' mean rating of the number of hours per week they watched content on an OTT platform after the COVID-19 lockdown (*M* = 11.28, *SD* = 9.41) as compared to before the COVID-19 lockdown (*M* = 8.52, *SD* = 8.44) (see Table 3). The increase in the mean rating of 2.76 amounts to 32%.

Table 3

Descriptive Statistics — Number of Hours of OTT Watching Per Week Before *and* After *COVID-19 Lockdown*

	OTT Hours (pre)	*OTT Hours (post)*
Mean	8.520089286	11.28125
Standard Error	0.564445788	0.628581685
Median	6	10
Mode	10	10
Standard Deviation	8.447851001	9.407749227

To determine whether the change is statistically significant, a paired sample t-test was run. As shown in Table 4, the change is statistically significant, $t(223) = 5.58$ (higher than the t critical value of 1.97, two-tailed), $p < .01$.

Table 4

Paired T-Test — Number of Hours of OTT Watching Per Week Before *and* After *COVID-19 Lockdown*

	OTT Hours (post)	*OTT Hours (pre)*
Mean	11.28125	8.520089286
Variance	88.50574552	71.36618654
Observations	224	224
Pearson Correlation	0.660920559	
Hypothesized Mean Difference	0	
df	223	
t Stat	5.581527509	
P(T<=t) one-tail	3.44338E-08	
t Critical one-tail	1.65171532	
P(T<=t) two-tail	6.88677E-08	
t Critical two-tail	1.970658961	

Given that movie theaters and OTT platforms are direct competitors as distributors of movie content, it is not entirely surprising that the decline in movie theater frequency has also been accompanied by an increase in the OTT viewing hours. Consider the economic theory of cross price elasticity of demand that measures the responsiveness in the quantity demanded of one good when the price for another good changes (Hayes, 2020). While the aforesaid economic theory may not be directly applicable, since the increased OTT viewing hours is not necessarily due to a change in the *price* of movie theatre tickets, the concept is still relevant. Essentially, the changes in other movie theater-related product characteristics such as the consumer's perceived health and safety concerns are causing an increase in the demand for OTT viewing. Once an effective cure or vaccine for COVID-19 is found, which can lead to the abatement of health and safety concerns, it would be useful to evaluate if there has been any long-term change in the actual cross *price* elasticity of demand between movie theater consumption and OTT viewing before and after the COVID-19 lockdown.

Another interesting point to note about the choice between OTT platforms and movie theaters is that people would rather watch a new movie on an OTT platform versus a movie theater post-COVID-19. Consider this bar graph that shows the distribution of the respondents' ratings with regards to the likelihood that they would go to a movie theater to watch a new film, if the same film were available on the OTT platform.

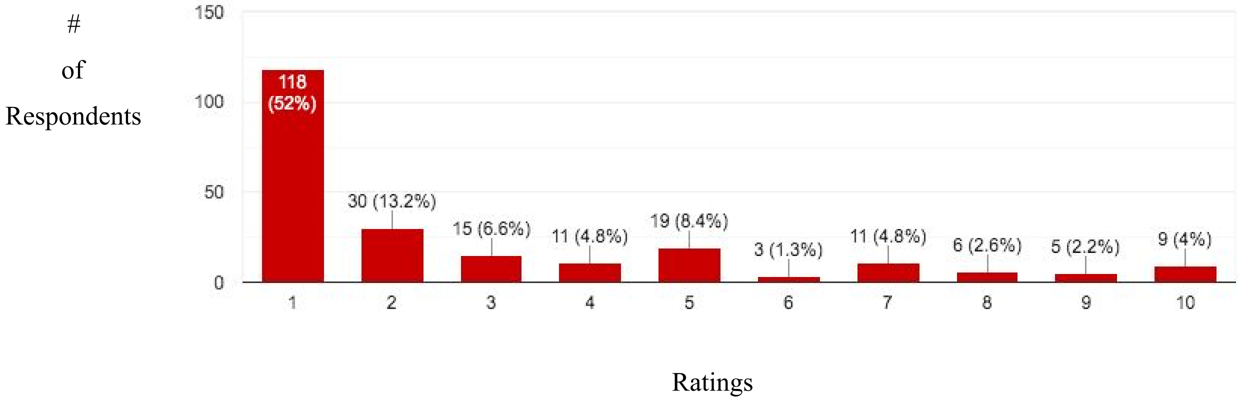

Figure 1. Likelihood of seeing a new movie at the movie theater if same movie available on OTT platforms.

As seen in Figure 1, the greatest proportion of the respondents (52%) rated their likelihood of going to the movie theater in such a scenario at the lowest level of "1". Conversely, less than 10% of the respondents gave high ratings of "8" and above. As more and more people feel that they can replicate the movie theater experience at home in a cost-effective fashion by buying larger television screens, this will pose a significant threat to the movie theater industry. Viewing movies at home also comes with additional advantages of being able to "watch movies at home with family [that] saves time, money [and] is logistically convenient". Yet another benefit of OTT platforms is that one can switch to any movie or show one wants at any moment in time: “I can always change the movie when not interested!” Therefore, OTT platforms offer considerably more room for personalization, from the perspective of the respondents. Finally, if movie producers continue to stream new movies via OTT platforms, then the movie theater industry may lose the theatrical window exclusivity advantage that they currently benefit from.

Comparison of Factors Influencing Movie Theater Going Frequency Before and After COVID-19 Lockdown (as a Group)

Since the focus of the research study was also to discern mitigation strategies for movie theaters to survive through the pandemic, this next section delves into the relative influence of the diverse factors that drew the respondents to movie theaters before and after the COVID lockdown. We begin with this section that compares the relative influence of the factors vis-à-vis one another on movie theater going frequency before the pre-COVID-19 lockdown.

The descriptive statistics presented in Table 5 shows differences between the respondents’ mean ratings of the relative influence of the factors on their movie theater going frequency before the COVID-19 lockdown. They are presented in order of magnitude from the highest level of importance to the least: quality of movie (M = 7.91, SD = 2.53); safety (M = 7.66, SD = 2.75); health and hygiene (M = 7.39, SD = 2.70); time with family and friends (M = 7.33, SD = 2.80); screen size (M = 7.02, SD = 2.74); and food (M = 5.21, SD = 2.86). The most frequent rating that the respondents gave to “quality of movie” is “10”, which indicates that a significant reason that NCR residents visit movie theaters is how good the film is before the lockdown occurred.

Table 5

Descriptive Statistics — Factors Influencing Movie Theater Going Frequency Before COVID-19 Lockdown

	Food	*Screen Size*	*Time with family & friends*	*Quality of Movie*	*Health & Hygiene*	*Safety*
Mean	5.214285714	7.017857143	7.334821429	7.919642857	7.388392857	7.65625
Standard Error	0.190759585	0.183277982	0.187166765	0.16934758	0.187166765	0.180375803
Median	5	8	8	9	8	8

Mode	7	10	10	10	10	10
Standard Deviation	2.855028045	2.743053658	2.801255638	2.534562496	2.801255638	2.699617828

To determine whether the differences in the means of these factors are statistically significant, a one-way ANOVA test was run. As show in Table 6, the mean differences are statistically significant, $F(5, 1338) = 28.10$ (higher than the F critical value of 2.22), $p < 0.1$.

Table 6

One-Way ANOVA — Factors Influencing Movie Theater Going Frequency Before COVID-19 Lockdown

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	1048.637649	5	209.7275298	28.10137467	3.79381E-27	2.220787313
Within Groups	9985.825893	1338	7.463248051			
Total	11034.46354	1343				

After the lockdown, the respondents' mean ratings for the relative importance of the following factors that drew them to movie theaters changed slightly. While movie quality was still among the top three factors, it was toppled from the top position by safety, as well as health and hygiene. The factors, in order of magnitude from the highest level of importance to the least are: safety (M = 8.13, SD = 2.75); health and hygiene (M = 8.12, SD = 2.70); quality of movie (M = 7.67, SD = 2.53); time with family and friends (M = 6.76, SD = 2.80); screen size (M = 6.33, SD = 2.74); and food (M = 4.29, SD = 2.86). This change in the positioning definitely reflects the respondents' heightened concerns emanating from the COVID-19 pandemic.

Table 7

Descriptive Statistics — Factors Influencing Movie Theater Going Frequency After COVID-19 Lockdown

	Food	*Screen Size*	*Time with family & friends*	*Quality of Movie*	*Health and Hygiene*	*Safety*

Mean	4.294642857	6.334821429	6.758928571	7.678571429	8.120535714	8.125
Standard Error	0.213388811	0.195843275	0.21218592	0.186683153	0.195938171	0.193922928
Median	3	7	8	9	10	10
Mode	1	10	10	10	10	10
Standard Deviation	3.193711289	2.931113742	3.175708065	2.794017586	2.932534018	2.902372618

To determine whether the differences are statistically significant, a One-Way ANOVA test was run. The one-way ANOVA shows that the mean differences are statistically significant: $F(5, 1338) = 53.67$ (higher than the F critical value of 2.22), $p < .01$ (see Table 8).

Table 8

One-Way ANOVA — Factors Influencing Movie Theater Going Frequency After COVID-19 Lockdown

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	2401.827381	5	480.3654762	53.66572619	7.09142E-51	2.220787313
Within Groups	11976.52679	1338	8.951066357			
Total	14378.35417	1343				

In comparing the ranking of the factors before and after the COVID-19 lockdown, the priority list has remained more or less the same in terms of the order of importance for all factors. What has changed is that safety and health and hygiene have climbed up in importance due to the increase in their mean rating, while the mean ratings for the quality of movie, screen size, time with family and friends, as well as food, all dipped. The respondents definitely seemed to be wary of the pandemic since the only two factors that increased in importance were related to the virus. In fact, movie quality had the least amount of change with just a 0.23 decrease in importance. Nonetheless, it is important to point out that food had the greatest amount of change with a 1.23 decrease in the mean. Clearly, while the consumers' perceptions about movie quality had not been impacted, their concern about hygiene had increased, which also encompassed their worries about food.

Comparison of Individual Factors Influencing Movie Theater Going Frequency Before and After COVID-19 Lockdown

In order to study these fluctuations in greater depth, the changes in the mean ratings of the relative importance of the individual factors before and after the COVID-19 were analyzed.

Food

Within the contexts of pre- and post-COVID-19 lockdowns, food was rated as the least important factor in influencing movie theater going frequency. Specifically, the respondents' mean pre-COVID-19 rating on food (M = 5.21, SD = 2.86), as compared to after the COVID-19 (M = 4.29, SD = 3.19) decreased by 1.23 — a decline of 24% (see Table 9). The most frequently selected pre-COVID-19 lockdown rating (mode) of "7" dropped to just "1" after the COVID-19 lockdown.

Table 9

Descriptive Statistics — Importance of Food in Influencing Movie Theater Going Frequency Before and After COVID-19 Lockdown

	Before	*After*
Mean	5.214285714	4.294642857
Standard Error	0.190759585	0.213388811
Median	5	3
Mode	7	1
Standard Deviation	2.855028045	3.193711289

To determine whether the change in the mean ratings is statistically significant, a paired sample t-test was run. As presented in Table 10, the change is statistically significant, $t(223) = 5.12$ (higher than the t critical value of 1.97, two-tailed), $p < .01$.

Table 10

Paired T-Test — Importance of Food in Influencing Movie Theater Going Frequency Before and After COVID-19 Lockdown

	Before	*After*
Mean	5.214285714	4.294642857
Variance	8.151185138	10.1997918
Observations	224	224
Pearson Correlation	0.609270757	
Hypothesized Mean Difference	0	
df	223	
t Stat	5.115280021	
P(T<=t) one-tail	3.37277E-07	
t Critical one-tail	1.65171532	
P(T<=t) two-tail	6.74554E-07	
t Critical two-tail	1.970658961	

This finding is interesting because movie theaters in India have been traditionally known for the diverse selection of food options, with most of the foods freshly cooked and hand prepared (Lal, 2017). Yet, it was rated the lowest among all the factors, with a lukewarm rating of importance. In fact, low consideration of food as an important factor was also reflected in the open-ended answers: a mere 0.8% of the respondents mentioned food as an incentive. It is also likely that the respondents with high concerns for safety, health, and hygiene were reluctant to buy food at movie theaters even before the COVID-19 lockdown. Such a reluctance was then further exacerbated by the pandemic. Until safety concerns wane, movie theaters could consider limiting kitchen-made food, and instead, focus on offering pre-packaged options like popcorn.

Screen Size

The second lowest priority on both lists was the size of the theater screen. The respondents' mean pre-COVID-19 lockdown rating (M = 7.02, SD = 2.74) decreased by 0.69, compared to the post-COVID-19 lockdown (M = 6.33, SD = 2.93) (see Table 11). Even though the mode is "10" for both periods, the mean fell by 9.8%. This result can be explained by the increase in the number of people who lowered their post-COVID-19 lockdown ratings if they had given low pre-COVID-19 ratings in the first place, even while those who had given screen size a high pre-COVID-19 lockdown rating maintained their high ratings with regards to the post-COVID-19 context.

Table 11

Descriptive Statistics — Importance of Screen Size in Influencing Movie Theater Going Frequency Before and After COVID-19 Lockdown

	Before	*After*
Mean	7.017857143	6.334821429
Standard Error	0.183277982	0.195843275
Median	8	7
Mode	10	10
Standard Deviation	2.743053658	2.931113742

To determine whether the change in the mean ratings is statistically significant, a paired sample t-test was run. Table 12 shows that $t(223) = 5.54$ (higher than the t critical value of 1.97, two-tailed), $p < .01$.

Table 12

Paired T-Test — Importance of Screen Size in Influencing Movie Theater Going Frequency Before and After COVID-19 Lockdown

	Before	*After*
Mean	7.017857143	6.334821429
Variance	7.52434337	8.591427771
Observations	224	224
Pearson Correlation	0.790679478	
Hypothesized Mean Difference	0	
df	223	
t Stat	5.542980346	
P(T<=t) one-tail	4.18054E-08	
t Critical one-tail	1.65171532	
P(T<=t) two-tail	8.36108E-08	
t Critical two-tail	1.970658961	

A closer examination of the distribution of the ratings among the respondents reveals that only 14 out of 65 who rated screen size a “10” before the COVID-19 lockdown lowered their ratings to “8” after the COVID-19 lockdown. This means that the remaining 78.5% of the respondents who gave it a rating of “10” gave it a rating of “8” and above even after the COVID-19 lockdown. These numbers tell us that the opinion of these respondents regarding screen size did not seem to be affected by the changes in the circumstances. At the same time, screen size did not appear to have mattered much in the grand scheme of things, notwithstanding the COVID-19 lockdown: a significant minority of respondents (45%) gave ratings below an “8 before the lockdown, a figure that climbed up to 57% afterwards.

Time with Family and Friends

With regards to the factor of time with family and friends, the respondents’ mean post-COVID-19 lockdown rating (M = 7.33, SD = 2.80) decreased by 0.57, compared to the mean pre-COVID-19 lockdown rating (M = 6.76, SD = 3.18) (see Table 13).

Table 13

Descriptive Statistics — Importance of Time with Family and Friends in Influencing Movie Theater Going Frequency Before and After COVID-19 Lockdown

	Before	*After*
Mean	7.334821429	6.758928571

Standard Error	0.187166765	0.21218592
Median	8	8
Mode	10	10
Standard Deviation	2.801255638	3.175708065

To determine whether the change in the mean ratings is statistically significant, a paired sample t-test was run. As shown in Table 14, shows $t(223) = 3.59$ (higher than the t critical value of 1.97, two-tailed), $p < .01$.

Table 14

Paired T-Test — Importance of Time with Family and Friends in Influencing Movie Theater Going Frequency Before and After COVID-19 Lockdown

	Before	*After*
Mean	7.334821429	6.758928571
Variance	7.847033152	10.08512172
Observations	224	224
Pearson Correlation	0.685088941	
Hypothesized Mean Difference	0	
df	223	
t Stat	3.596605157	
P(T<=t) one-tail	0.000198499	
t Critical one-tail	1.65171532	
P(T<=t) two-tail	0.000396998	
t Critical two-tail	1.970658961	

As with screen size, the mode is “10” for both pre- and post-COVID-19 contexts. Only 14 out of the 61 respondents who gave it a rating of “10” before gave it a rating of below “8” afterwards. Essentially, 77% of the respondents still gave screen size a very high rating of “8” and above. Nonetheless, a sizable minority of 91 respondents (40.6%) gave a post-COVID-19 rating of below “6”, thus leading to a significant drop in the mean rating.

Based on the fact that India has a very strong family-oriented culture (Chadda & Deb, 2013), the decline in the relative importance of this factor may seem peculiar at first. However, the respondents’ answers to the open-ended questions give more insights into the underlying reasons for this decline. As it turns out, it is precisely because of the perception of the importance of the family that the respondents lowered their rating of this factor. The recurrent theme of the responses was the concern the respondents had for their families’ well-being.

> The risk to the health of self and family in a closed space like a movie theatre is the deterrent to watch movies in theatres.
>
> I don't think I will go back in a hurry. My elderly parents' safety is much more important.

This concern for the adverse impact of going to movie theaters on the families also needs to be considered within the specific sociocultural context of India. Many Indian families live as members of a joint family unit, with multigenerational relatives living under the same roof (Chadda & Deb, 2013). Although the emergence of urban families is starting to wane, this network of kinship ties, joint families is still deeply rooted in the Indian tradition (Chadda & Deb, 2013). In India, people tend to have families with an average of 4.9 members per household (Michael Bauer Research, 2019) compared to the average of 2.52 in the US (Duffin, 2019). As COVID-19 has proven to be far more lethal for the elderly population, killing approximately 13.4% of the people 80 years and older compared to 0.3% of people in their 40s (Begley, 2020), many Indians who have older members in their joint family households would refrain from going to movie theaters.

Movie Quality

The quality of the movie is the factor that was the least impacted by the pandemic in the survey. The respondents' mean pre-COVID-19 lockdown rating (M = 7.91, SD = 2.53) decreased by a mere 0.23 after the COVID-19 lockdown (M = 7.68, SD = 2.79) (see Table 15).

Table 15

Descriptive Statistics — Importance of Movie Quality in Influencing Movie Theater Going Frequency Before and After COVID-19 Lockdown

	Before	*After*
Mean	7.919642857	7.678571429
Standard Error	0.16934758	0.186683153
Median	9	9
Mode	10	10

Standard Deviation	2.534562496	2.794017586

To determine whether the change in the mean ratings is statistically significant, a paired sample t-test was run. Table 16 shows that $t(223) = 2.38$ (higher than the t critical value of 1.97, two-tailed), $p < .01$.

Table 16

Paired T-Test — Importance of Movie Quality in Influencing Movie Theater Going Frequency Before and After COVID-19 Lockdown

	Before	*After*
Mean	7.919642857	7.678571429
Variance	6.424007047	7.806534273
Observations	224	224
Pearson Correlation	0.842967763	
Hypothesized Mean Difference	0	
df	223	
t Stat	2.383522855	
P(T<=t) one-tail	0.008993155	
t Critical one-tail	1.65171532	
P(T<=t) two-tail	0.017986311	
t Critical two-tail	1.970658961	

Thirty-one respondents stated that they might consider going to a movie theater depending on the movie that was playing. There were two influencing aspects across the data:

- **Exclusivity**: As one respondent explained, he would head to the movie theater to see the movie based on the following condition: "An extremely good movie that is not available on the OTT platforms and that there is no other avenue to spend time outside our homes apart from movie theatres." The exclusivity highlights the significance of the theatrical window that gives movie theaters a competitive advantage over OTT platforms. Only if the movie is exclusive to movie theaters would they consider going to see it. At the same time, the movie must also be of good quality in order to enhance the value of the exclusivity.

- **Brand**: According to a respondent, he might be swayed by "[a] movie like *Tenet* (favorite director) [o]r a sequel to a beloved franchise". This comment illustrates the importance of branding in the case of a favorite director like Christopher Nolan.

Essentially, the respondent might not have had the same reaction to an indie film by an unknown director featuring B-list actors. Marvel Entertainment is built on this very philosophy because it is a franchise that fans have invested themselves in (Hoang, 2019).

Moviegoers in India are also very often invested in the brand of actors. They typically refer to a Bollywood movie by the actors starring in it, rather than the content of the movie (ET BrandEquity, 2019).

Health and Hygiene

Health and hygiene is one of the only two factors that actually rose in importance within the post-COVID-19 context. The mean post-COVID-19 rating (M = 7.39, SD = 2.70) increased by 0.73 compared to the mean pre-COVID-19 rating (M = 8.12, SD = 2.93) (see Table 17).

Table 17

Descriptive Statistics — Importance of Health and Hygiene in Influencing Movie Theater Going Frequency Before and After COVID-19 Lockdown

	Before	*After*
Mean	7.388392857	8.120535714
Standard Error	0.180375803	0.195938171
Median	8	10
Mode	10	10
Standard Deviation	2.699617828	2.932534018

To determine whether the change in the mean ratings is statistically significant, a paired sample t-test was run. As presented in Table 18, the result is statistically significant, $t(223)$ = 5.96 (higher than the t critical value of 1.97, two-tailed), $p < .01$.

Table 18

Paired T-Test — Importance of Health and Hygiene in Influencing Movie Theater Going Frequency Before and After COVID-19 Lockdown

	Before	*After*
Mean	7.388392857	8.120535714
Standard Error	0.180375803	0.195938171
Median	8	10
Mode	10	10

Standard Deviation	2.699617828	2.932534018

Based on the high mean pre-COVID-19 rating, health and hygiene were already a concern for the respondents before COVID-19. Clearly, the further increase in importance of cleanliness and sanitation reflects the relationship of these factors to the infectious nature of COVID-19. This was corroborated by the respondents' answers: 190 of the respondents expressed that they would not go to movie theaters because of the health risk. Essentially, respondents had high expectations of the cinemas' enforcement of the necessary measures that would go above and beyond what had been practiced in the pre- COVID-19 context. This perspective is captured in the following response:

> But first and foremost, I would say that masks and ppe [personal protection equipment] should be required at all times, and that you will get kicked out, if you don't follow that rule. Theaters should also be constantly disinfecting everything, especially when new groups of people come in/leave. They should basically be following airplane precautions, but to another level.

Safety

Safety was the other factor that also increased in consideration in the post-COVID-19 context. Its mean rating (M = 7.66, SD = 2.75) increased by 0.47 from the mean pre-COVID-19 rating (M = 8.13, SD = 2.90) (see Table 19).

Table 19

Descriptive Statistics — Importance of Safety in Influencing Movie Theater Going Frequency Before and After COVID-19 Lockdown

	Before	*After*
Mean	7.65625	8.125
Standard Error	0.183529182	0.193922928
Median	9	10
Mode	10	10
Standard Deviation	2.746813278	2.902372618

To determine whether the change in the mean ratings is statistically significant, a paired sample t-test was run. Table 20 shows that $t(223) = 4.09$ (higher than the t critical value of 1.97, two-tailed), $p < .01$.

Table 20

Paired T-test — Importance of Movie Quality in Influencing Movie Theater Going Frequency Before and After COVID-19 Lockdown

	After	*Before*
Mean	8.125	7.65625
Variance	8.423766816	7.544983184
Observations	224	224
Pearson Correlation	0.81708332	
Hypothesized Mean Difference	0	
df	223	
t Stat	4.091082371	
P(T<=t) one-tail	2.99992E-05	
t Critical one-tail	1.65171532	
P(T<=t) two-tail	5.99984E-05	
t Critical two-tail	1.970658961	

Movie theaters, which have to institute and enforce safety standards, are caught in a no-win situation. On the one hand, the need to adhere to these safety standards can be considered to be too much of a burden by the public. Yet, on the other hand, the public could also perceive them to be inadequate for allaying consumers' fears of being stricken with COVID-19. The pandemic seemed to have triggered "public psychosis" — a term coined by Edgerton and Edgerton (2012) to describe the "psychic turmoil and bipolar extremes" experienced by the American public in post-9-11 America in the wake of the unprecedent terrorist attacks (p. 92). Within the COVID-19 context, this concept refers to the public's extreme fear of getting infected, which results in risk-averse behavior. Moreover, the availability of OTT platforms that are not only convenient, but also an alternative safe option, just made it so much easier for the respondents not to go to movie theaters:

> It is more of a hassle because of safety precautions... I've gotten more used to seeing movies at home in the past few months, though.

> Assurance that it is extremely safe. Let maybe a year after COVID go by, as I'm not missing out if I can stream it at home...

Nonetheless, there is a safety protocol that 22 respondents felt would encourage them to return to the movie theaters: social distancing. One respondent stated: “If halls maintain social distancing norms in terms of keeping space between different seats... as well as ensuring proper sanitation and hygiene.”

What would definitely change the respondents’ timeline of returning to the movie theater would be the availability of a vaccine or a cure. For many of the respondents, if there is no vaccine, then there will be no chance they will go to a movie theater or any public places. For almost every three answers, there is always one that mentions the importance of the availability of a vaccine in shaping the decision to go to the movie theater. One respondent articulated this sentiment clearly:

> After we get vaccinated against COVID-19, we would be comfortable to plan a visit. Perhaps also a couple of months after the movie theatres have resumed operations with all safety measures and [they] have not caused an increase in infections.

As the development of a widely available vaccine or a cure could take almost a year or two, as pointed out by many respondents, movie theaters face a formidable challenge to remain in business in the coming days.

Conclusion

The research aim of this study was to evaluate the impact of the COVID-19 lockdown on the film consumption patterns of the National Capital Region (NCR) residents in India. Based on the results, each of the 10 null hypotheses was rejected. There was a significant decline in the movie theater going frequency, which was accompanied by a significant increase in the OTT viewing hours. In general, the results suggest that most people will not be going to movie theaters in the following six months due to safety concerns and the lack of a cure/vaccine for the virus. Additionally, the number of hours spent on OTT platforms has significantly increased now versus pre-COVID-19. OTT is now a far bigger threat to movie theaters than it used to be since more people are getting accustomed to watching movies through OTT platforms. In fact, the lack of alternative movie viewing options has led to people acknowledging and experiencing the additional benefits of OTT platforms over movie theaters including convenience and affordability.

Of all the factors considered, movie quality, health and hygiene, as well as safety, in order of importance, had the highest mean ratings before the COVID-19 lockdown. However, the latter two factors increased in importance after the lockdown, while movie quality dipped to the third position, thus reflecting the respondents' heightened concerns about the coronavirus. Concerns with hygiene and safety also meant that food wasn't that important to the respondents since the mean ratings were quite low both before and after the COVID-19 lockdown. It suggests the respondents' lack of trust in the preparation of the food. Additionally, hygiene and safety worries also resulted in a low mean rating for time with family and friends since the respondents were concerned for their family and friend's health, thus resulting in a reduced collective desire for movie theater outings. Due to the low importance on these factors, it seems that respondents were replacing the movie going experience with watching on OTT platforms that were perceived to be cheaper and more convenient for large gatherings. With some respondents pointing out that they could recreate this experience at home, it is evident why the screen size factor was thus not as important as the others when it came to going to movie theaters. This was reflected in the drop in the already low pre-COVID-19 mean rating of screen size as an influencing factor in the post-COVID-19 context. Movie quality was the only factor that remained constant, thus suggesting its significance for respondents, even in the face of COVID-19.

The results of this study confirm the dire state of the movie theater industry, based on the respondents' movie viewing preferences. It is thus very likely that the movie theater industry would have to undergo a buffer year during which there would be far more spare capacity in theaters than desired. Of course, in the short term, a more realistic strategy for many movie theaters may be to undertake a cost-benefit analysis on when they should really open, given that the expected footfalls in the near term are likely to be modest or negligible. Since the recurring costs are likely to remain the same, movie theaters should consider whether their revenue from opening would offset the additional costs of having additional safety standards and special marketing campaigns.

Moreover, the OTT platforms have been encroaching on the movie theaters' market share and growing in popularity. The coronavirus situation has certainly enhanced their appeal due to the simultaneous advantages of availability and affordability. On paper, consumers from mid-to high-income households have the means to recreate a movie-viewing experience, while enjoying a high level of convenience (Stanton, 2018). For example, families and friends can watch movies and TV shows, perhaps even in 3D, from the comfort of their own homes, while partaking in their own preferred foods. The viewing experience can also be personalized, since viewers can switch from show to show, should they change their mind about the original choice.

Yet, not all is lost for the movie theater industry. The results of this study have also pinpointed various solutions that are inspired from history and the practices of other countries for local movie theaters. They may enable the local movie theaters to survive and even thrive in a post COVID-19 lockdown world:

- **Publicizing and ensuring strict hygiene and safety guidelines:** In view of the respondents' concerns about hygiene and safety, movie theaters need to not only be proactive in strictly adhering to best-in-class guidelines to the letter, but also showcasing them conspicuously and consistently. Specifically, staff must be properly trained to implement the required activities of: sanitizing seats and surfaces on a regular basis; using the thermal scanners to check the temperatures of their colleagues and the movie theater goers; utilizing mandatory PPE kits; and enforcing social distancing.

  Movie theaters can use diverse free and affordable means to market their conformity to safety guidelines, which can be validated by third-party sources to ensure credibility, in order to assure potential patrons that they will have a safe and comfortable viewing experience. Movie theaters may be better able to persuade people to go to the movie theaters by promoting their adherence to the rules.

- **Optimizing resource allocation to maximize profits based on consumer prioritization**: Given the consumers' heightened concerns about health and hygiene, as well as the relatively low ratings of importance of food by the respondents in this research study, movie theater owners should redirect their limited resources from food preparations (e.g., menus and cooks) to health and hygiene. With people becoming suspicious of the safety of hand-prepared foods, movie theaters may actually lose money if they continue serving these items. Instead, the only items they could provide are pre-packaged goods such as popcorn, nachos, and sodas from a third party. With the additional resources, movie theaters would be in a better position to adhere to the safety guidelines through the provision of the necessary equipment for their employees and customers, as well as providing adequate training to ensure stringent enforcements.

Furthermore, with movie quality continuing to remain as a top three factor in influencing consumer preferences, movie theaters should be far more astute and meticulous in selecting movies for their screening. As screening fewer movies will reduce additional costs for them, movie theaters may want to limit themselves to screen the highest quality and most popular movies. For instance, obvious candidates for consideration would be 3D blockbuster action movies, or movies starring a very big Bollywood star, particularly if movie theaters can still enjoy a theatrical window. Traditionally, blockbusters have always helped make movie theaters the most money; so it would be more beneficial for movie theaters to screen them.

- **Reducing crowds and enhancing movie viewing experience:** Reduced footfalls to theaters can imply higher levels of service and a more exclusive experience for movie patrons. Movie theaters can use this to their advantage by sending out promotional messages of how patrons can get to enjoy a large-screen movie experience in a mid-to large-sized movie theater without being crammed next to others.

- **Keeping families together:** A concern that was brought up by the respondents is that they would be separated from their family if social distancing in the seating arrangement is enforced by movie theaters. A Winter Garden movie theater in Orlando, Florida has a system that addresses this problem. It enables the person buying the ticket to block the seats next to them such that social distancing does not separate a family who wants to sit together (Boey, 2020). Movie theaters can team up with ticket booking companies such as Bookmyshow (an online Indian movie ticket booking agency) to implement a similar mechanism. This allows families from the same households to stay together, while still adhering to social distancing. This mechanism will allow more people to consider going back to movie theaters because they can feel safer and happy since they still get to spend the time with their families.

- **Creating and renting out small rooms like karaoke hubs targeted at small groups**: A common theme in the respondents' answers is their concern about the presence of outsiders (not from their households). However, consumers may not be averse to renting small theaters that could be used for joint families/ friend and family groups. Theatres can charge higher prices for such offerings. However, it could be an interesting option to leverage on the existing excess capacity in theatres, which is going to be underutilized given the consumers' health and safety concerns. Families and friends may also view this as an opportunity to have a much-desired outing, while bonding with their closed ones, until a definitive cure/vaccine is found for COVID-19.

Therefore, movie theaters need to consider executing a structural change in their business models for their long-term survival. The ultimate aims of structural changes comprise providing a differentiated experience that OTT platforms cannot replicate and/or diversifying revenue streams. Some innovative strategies for theatres to create unique offerings and offer a differentiated movie experience to compete with OTT platforms in the long term are provided below:

- **Themed screenings**: Akin to how events/shows at a Disney theme park are centered around a particular character/ theme, movie theaters could introduce themed screenings (e.g., a Marvel or a Shah Rukh Khan theme) whereby a specific movie may be accompanied by foods and costumed characters associated with the film. One could also 'feature visits' by movie stars to entice patrons to go the movie theater for an opportunity to meet their favorite celebrities. Such a concept will add a level of excitement to the movie theater experience that they cannot get when they watch the same movie on an OTT platform.

- **Drive-in theaters & floating cinemas:** In addition, movie theatres can consider using other venues to show their movies, which enables them to overcome the limitations of the confined spaces in view of the COVID-19 situation. For example, movie theater owners could consider expanding movie exhibition to drive-in/ parking lots just like those exist in western countries like the US. In the short term, drive-in theatres are less impacted since they allow patrons to stay in their own cars enabling social distancing. Given that there are 556 motor vehicles for every 1,000 people in New Delhi alone (PTI, 2018), with the ownership of motor vehicles in the NCR being very common, drive-in theaters could be a viable model. However, the cost of real estate is quite expensive in this region; so renting huge parks or lots could be expensive ("Property Rates & Price Trends in Delhi", 2020). Nonetheless, this could be an opportunity for movie theaters to forge partnerships with new partners (park owners), thereby creating an incremental source of revenue for both the movie theatres and the parking lot owners, not just in the short term, but also in the longer term as well.

Another idea that foreign countries are experimenting with are "floating cinemas". Cities like Houston, Los Angeles, New York, and Paris are taking the outdoor movie viewing experience to the next level: people sit in multiple boats to watch a movie outdoors. They are keeping it free in Houston for four days for one week as a test run (Medley, 2020).

- **Enhancements of home viewing experience**: Finally, as the saying goes, "If you can't beat them, join them." Instead of fighting the trend of increased viewing at home, chains like PVR or Inox could offer customers their technical assistance/experience in replicating a PVR- or Inox- like movie experience at home to interested customers.

  While such a service may sound self-cannibalizing initially, it could be a smart strategy to achieve diversification and add a new source of revenue, while building customer relationships and improving loyalty. Having a relationship with these customers, based on these interactions, can still provide data and a treasure trove of opportunities for the movie chains to introduce their other offerings. From a structural perspective, this is how movie theaters can infiltrate into the territory of OTTs and compete effectively with them in the home setting.

  This would not be a completely new strategy. Awfis, a leading Indian real estate player in the shared office industry and a competitor to WeWork, recently introduced the Awfis@Home service. The company assesses the readiness of organizations and employees to work from home and provides made-to-measure solutions that may include physical infrastructure, connectivity, and collaboration tools for a seamless work-from-home experience.

Ultimately, the magic of a movie theater experience needn't disappear in the aftermath of the COVID-19 pandemic. Rather, with a high degree of ingenuity, movie theaters can rise to the occasion by introducing mitigations strategies, diversifying their movie offerings, and bringing in something special that can incentivize people to leave the four walls of their homes. Certainly, in the age of COVID-19, when people are often advised to stay in their homes for their day-to-day tasks, entertainment excursions like visiting a movie theater should be a special experience. Movie theaters need to be able to cater to the growing sophistication of the movie theatergoers with tastes and needs that can vary from time to time. Our suggestions above from the intimate karaoke-like hubs to the floating cinemas are simply a sampling that can hopefully instill hope and inspire even more ideas for movie theaters to emerge from COVID-19 even stronger than before and carve their own niche.

References

ArcGIS. (2019). Av*erage household size in India.* https://www.arcgis.com/home/item.html?id=6cf22970ea8c4b338a196879397a76e4

Begley, S. (2020, March 30). *What explains COVID-19's lethality for the elderly?* STAT. https://www.statnews.com/2020/03/30/what-explains-coronavirus-lethality-for-elderly/

Bhowmick, S. (2016, April 26). Boom time for Noida movie-goers as number of screens set to double this year. *Economic Times.* https://economictimes.indiatimes.com/magazines/panache/boom-time-for-noida-movie-goers-as-number-of-screens-set-to-double-this-year/articleshow/51989558.cms

Boey, V. (2020, August 12). *Winter Garden movie theater reopens with safety measures during pandemic*. FOX 35 Orlando. https://www.fox35orlando.com/news/winter-garden-movie-theater-reopens-with-safety-measures-during-pandemic

BrandEquity. (2019, July 03). *Why film stars rule the roost in India and China*. https://brandequity.economictimes.indiatimes.com/news/business-of-brands/what-makes-bollywood-actors-rule-the-game-in-india-and-china/70048210

Chadda, R., & Deb, K. (2013, January). Indian family systems, collectivistic society and psychotherapy. *Indian Journal of Psychiatry, 55*(Suppl 2), S299–S309. https://doi.org/10.4103/0019-5545.105555

Dalmia, N. (2020, June 08). COVID-19 is no plague or cancer; fear psychosis unnecessary: Big bull. *Economic Times.* https://economictimes.indiatimes.com/markets/expert-view/COVID-19-is-no-plague-or-cancer-fear-psychosis-unnecessary-big-bull/articleshow/76257588.cms

Dubash, A. (2020, August 10). *PVR Q1 – Expected to post near zero revenues*. Times Now. https://www.timesnownews.com/videos/et-now/financial-reports/pvr-q1-expected-to-post-near-zero-revenues/70287

Ducharme, J. (2020, March 11). The WHO just declared coronavirus COVID-19 a pandemic. *Time.* https://time.com/5791661/who-coronavirus-pandemic-declaration/

Edgerton, G. R., & Edgerton, K. C. (2012). Pathologizing Post-9/11 America in *Homeland*: Private paranoia, public psychosis. *Critical Studies in Television* 7(1), 92.

Escandon, R. (2020, March 13). The film industry made a record-breaking $100 billion last year. *Forbes.* https://www.forbes.com/sites/rosaescandon/2020/03/12/the-film-industry-made-a-record-breaking-100-billion-last-year/

Feldman, D. (2019, July 28). How Netflix is changing the future of movie theaters. *Forbes.* https://www.forbes.com/sites/danafeldman/2019/07/28/how-netflix-is-changing-the-future-of-movie-theaters/#2dc91b045f46

FICCI, & EY. (2019, March). *A billion screens of opportunity*: *India's media & entertainment sector.* https://eemaindia.com/uploads/whitepapers/pdf/1555489891_EY-a-billion-screens-of-opportunity-min.pdf

Fry, R. (2019, October 1). *The number of people in the average U.S. household is going up for the first time in over 160 years*. Pew Research Center. https://www.pewresearch.org/fact-tank/2019/10/01/the-number-of-people-in-the-average-u-s-household-is-going-up-for-the-first-time-in-over-160-years/

Hayes, A. (2020, July 30). Understanding the cross elasticity of demand. *Investopedia.* https://www.investopedia.com/terms/c/cross-elasticity-demand.asp

Hoang, H. (2019, April 29). *What any brand can learn from Marvel Studios.* Medium. https://medium.com/@huy_work/what-any-brand-can-learn-from-marvel-studios-15b40c39d324

Jha, L. (2020, June 24). *Small-budget films rake in profits from streaming deals*. Livemint. https://www.livemint.com/industry/media/small-budget-films-rake-in-profits-from-streaming-deals-11593017713460.html

Laghate, G. (2019, October 6). Video streaming services: Will over-the-top streaming services hit multiplexes*? Economic Times.* https://economictimes.indiatimes.com/industry/media/entertainment/will-over-the-top-streaming-services-hit-multiplexes/articleshow/71447968.cms?from=mdr

Lal, N. (2017, March 17). Food MRP in Delhi cinemas at par with cafes, say owners after crackdown. *Times of India.* https://timesofindia.indiatimes.com/city/delhi/food-mrp-in-delhi-cinemas-at-par-with-cafes-say-owners-after-crackdown/articleshow/57669573.cms

Medley, A. (2020, July 24*)*. 'Floating cinema' with social distancing is coming to Houston this fall. *Houston Chronicle.* https://www.chron.com/local/article/Movies-on-a-boat-Floating-Cinema-with-social-15432000.php

PTI. (2018, March 20*)*. Delhi has 556 motor vehicles per one thousand people. *Economic Times.* https://auto.economictimes.indiatimes.com/news/industry/delhi-has-556-motor-vehicles-per-one-thousand-people/63377962

Property rates & price trends in Delhi — 2020. (2020). Makaan. https://www.makaan.com/price-trends/property-rates-for-buy-in-delhi

Sharma, S. (2020, June 13). 9 Hindi films that released on streaming platforms during the lockdown. *The Indian Express.* https://indianexpress.com/article/entertainment/bollywood/9-films-released-online-during-the-lockdown-6453854/

Shashidhar, A. (2019, October 01). How multiplex chains are looking at newer sources of revenue. *Business Today.* https://www.businesstoday.in/current/corporate/multiplex-chains-looking-at-newer-sources-of-revenues-indian-film-industry-media-and-entertainment/story/382150.html

Sidorov, G., Lapin, V., Chistova, C., & Nosachenko, V. (2018). *Media outlook: Global entertainment and media outlook 2018–2022*. https://www.pwc.ru/en/assets/mediaoutlook2018-eng.pdf

Stanton, K. (2018, June 14). *The cinephile's living room: How to recreate the cinema experience.* Domain. https://www.domain.com.au/living/the-cinephiles-living-room-how-to-recreate-the-cinema-experience-20180614-h11d94-439965/

Sweney, M. (2020, August 05). Disney opts for digital-first release of Mulan, shocking cinema owners. *The Guardian.* https://www.theguardian.com/film/2020/aug/05/disney-opts-for-digital-first-release-of-mulan-shocking-cinema-owners?CMP=Share_iOSApp_Other

Appendix A
Questionnaire

- What is your age?
- What is your gender?
- What is your education level, in terms of the number of years of schooling? (For example, if you have done 12 years of school, 3 years of bachelor's and 2 years of masters then you would enter 17)
- What is your annual household income in Indian Rupees? (1 lakh = INR100,000)
- How many times did you go to a movie theater within a six-month period pre COVID-19 lockdown?
- How many times do you expect to go to a movie theater within a six-month period post COVID-19 lockdown?
- Rate the importance of the following when going to a movie theater pre COVID-19 lockdown (1-10 scale with 10 being extremely important)?
    - Food
    - Screen Size
    - Time with Family and Friends
    - Quality of Movie
    - Health and Hygiene
    - Safety
- Rate the importance of the following when going to a movie theater post the COVID-19 lockdown (1-10 scale with 10 being extremely important)?
    - Food
    - Screen Size
    - Time with Family and Friends
    - Quality of Movie
    - Health and Hygiene
    - Safety
- How many hours a week did you spend on average watching movies/shows on a streaming service pre-COVID 19 lockdown?
- How many hours a week might you spend on average watching movies/shows on a streaming service post-COVID 19 lockdown?

- A movie you really want to see is released both in a movie theater and on a streaming service at the same time. How likely are you to watch the movie in the theater post COVID-19 lockdown?
- How has COVID-19 altered your desire to go to a movie theater (2-4 sentences)?
- What would make you want to go to a cinema post COVID-19 lockdown (2-4 sentences)?

Appendix B

Participation Invitation Letter

Dear Invitee,

My name is Mihir Dhawan. I am a 12th grade student at the American Embassy School, New Delhi. I am kindly requesting your participation in a research study, *Tanking at the Box Office: Impact of COVID-19 Lockdown on Movie Theaters in National Capital Region (NCR), India*. The intention is to assess how movie theater preferences are changing in Delhi NCR due to COVID-19.

The study involves completing basic demographic information and two surveys. Participation is completely voluntary and you may withdraw from the study at any time. The study is completely anonymous, therefore, it does not require you to provide your name or any other identifying information.

If you would like to participate in the study, please read the Informed Consent letter below. To begin the study, click on the survey link at the end.

Thank you for your time and participation.

Sincerely,

Mihir Dhawan
American Embassy School