Master's Thesis of Business Administration

Quantifying the Impact of Social Distancing on the Consumer Preferences for Movies based on Difference-in-Differences Model

이중차분모형에 기반한 사회적 거리두기의 소비자 영화 선호에 대한 영향에 관한 연구

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Graduate School of Business
Seoul National University
Marketing Major
Jimin Han

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Examiner Byungdo Kim

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jimin Han

Confirming the master's thesis written by
jimin Han
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Chair	Junbeom Kim
Vice Chair	Wujin Chu
Examiner	Byungdo Kim

Abstract

In this paper, I study the short-term psychological impact of voluntary social distancing on the viewership of humorous and sad movies in the era of COVID-19. Using longitudinal data on the Korean movie theater industry, I employed Difference-in-Differences (DID) approach that leverages observations in the first year as the control group and those in the second year as the treated group. Previous mood regulation literature faced apparent discrepancies in their findings on the preference for mood-congruent stimuli when people are in negative moods. Some have speculated that when people feel psychological distress due to the failure of relationship, mood-congruent stimuli is more appreciated even when mood-incongruent, pleasant, alternatives also exist. However, this assumption is not closely examined in the empirical settings, so this pandemic era is the best timing to delve into the underlying mechanisms behind this seemingly mysterious aesthetic enjoyment and provide insights to both the field of mood-regulation literature and brick-and-mortar theater industry in South Korea in terms of their managerial decisions to recover viewership and sales revenue.

***Keywords: COVID-19, Mood-regulation literature, Movie theater industry, Social* distancing, Difference-in-Differences**

Student Number: 2019-20100

Table of Contents

1. Introduction

2019 COVID-19 has been designated a pandemic by the World Health Organization on 11 March 2020 and unprecedented health crisis has created fear around the world. Economy has been shattered down by the outbreak of COVID-19 and higher unemployment rates, along with lower income, are choking off the people and reshaping the landscape of our economy. People have started to practice social distancing, which is to avoid close contact with others to reduce the risk of virus transmission, so voluntary social distancing is gradually accepted as the new norm in our society. Voluntary social distancing has led people to be physically disconnected with each other, inducing the failure of close interpersonal relationship and higher loneliness rates more than ever before (Groarke et al.2020), which might be the potential driver of the pandemic-induced decline in movie consumption of a humorous genre, the mood-incongruent aesthetic stimuli. Therefore, exploring the ramifications of this newly-established practice may bring important implications for various industries.

This paper has a unique contribution in that the impact of negative sentiments (e.g. loneliness) induced by social distancing, and consequently, broken inter-personal relationship, on Korean movie theater industry is analyzed and quantified via Difference-in Differences framework, meaningful attempt to bridge the gap in previous findings in mood-regulation literature during COVID-19. The first confirmed case of novel

coronavirus in South Korea was on 20 January 2020, causing a widespread fear throughout the country as illustrated in Figure 1; peak in search volume for three key terms related to COVID-19. South Korean government urged people to minimize the social contact, but public gatherings and religious, commercial activities could still be held without any restriction until mid-March 2020 (Kim, 2020). Therefore, any decrease or increase in the viewership of humorous movies during the first few weeks after the first confirmed case of COVID-19 would be attributed to the failing inter-personal relationship and consequent loneliness induced by the voluntary social distancing rather than government-imposed restrictions.

Following the criteria for sample period selection(Kim,2020), sample period in this paper is also restricted to the third week of February, 2020 because after that period, the number of confirmed cases began to surge and some theaters began to shut down staring late March, 2020. Consequently, the degree of social distancing might be different before and after the last week of February, 2020. In addition, schools and universities in South Korea normally start in March, so confounding changes in movie consumption might bias the estimation if the observations of March and later are also included.

Using the multi-market data from the third week of February 2018 to the third week of February 2020, I employed Difference-in-Differences approach to identify the causal effect of loneliness induced by voluntary social distancing on the consumption of humorous, comedy movies, the

mood-incongruent aesthetic stimuli, in addition to the consumption of sad, horror, crime-related movies, the mood-congruent stimuli.

In contrast to our expectation, however, positive impact of social distancing has been identified for the consumer demand of comedy and humor genre movies (the mood-incongruent aesthetic stimuli), whereas negative impact of social distancing has been identified for the consumer demand of sad and horror movies (the mood-congruent aesthetic choice). Estimation result do not confirm the expectation based on prior mood regulation literature, but possible explanations will be elaborated in the following section.

This paper has a unique contribution in that it is the first literature to combine epidemiology, psychological and economic impact of social distancing, providing insights to discrepancies in previous findings in mood-regulation literature. On top of that, this paper is one of the first empirical studies on the preference for mood-congruent stimuli and its impact on a certain industry during the pandemic era in which loneliness and sadness are highly prevalent among people.

However, there is one unique aspect which should be taken into account in movie theater industry. Recent movie demand estimation literature by Einav (2007) employed a nested logit framework to distinguish between seasonality in unobserved movie demand and the endogenous market response to it, which is the choice of quality and number of movies by the distributors. He has found that endogenous market reaction explains

one third of seasonal variation in box-office revenue in U.S. market. Leung et al. (2019) have also proven that “movie availability” is an important determinant in estimating movie demand in U.S. market. It is obvious that several distributers would delay the release of movies to minimize loss during this pandemic era when the demand is expected to be lower than the normal state. To control for this endogenous market reaction, choice of number and quality of movies by market players, this paper restricted the sample period only to the third week of Febuary,2020 and dependent variable in the model specified in this paper helped to circumvent this issue to some extent.

The remainder of this paper consists of five sections. In the next section, the background information about COVID-19, movie theater industry in South Korea, and prior findings in mood-regulation literature will be provided. In section 3, data will be described and model specification will be proposed. Then, the estimation results and specification test will be discussed in section 4 and limitation, contribution, and possible future research direction will be elaborated in the last section.

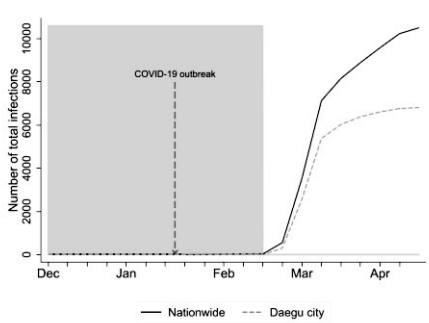
2 Background information

2.1 Outbreak of COVID-19

27 cases of unexplained viral pneumonia were started to be monitored in Wuhan, Hubei province, on 30 December 2019. By late

January, virus had spread throughout the China, spreading even to neighboring countries, such as Japan, Singapore, and South Korea. On 11 February 2020, World Health Organization named this novel syndrome COVID-19 and finally, WHO declared it as a global pandemic on March 11 2020, when COVID-19 claimed the lives of 4,000 people and infected nearly 120,000 people. On 20 January 2020, a Chinese citizen from Wuhan was confirmed as the first case of corona virus infection in Korea and 4 days later, Korean man from Wuhan was also confirmed positive, the first infection case of Korean citizen. By the end of March, the number of confirmed cases reached almost ten thousand and most of the cases came from Daegue; from a religious organization, Shincheonji, and a hospital in Chengdo. On March 15, the South Korea government designated Daegu and several parts of Kyungbook as special disaster zones and provided special medical and financial support. The sudden surge in the cases of infection in late January sparked a huge fear among Koreans and the peak in search volume for three terms; Wuhan pneumonia, Novel coronavirus, Corona 19, proves this.

(a) Number of confirmed cases



(b) Google search trend

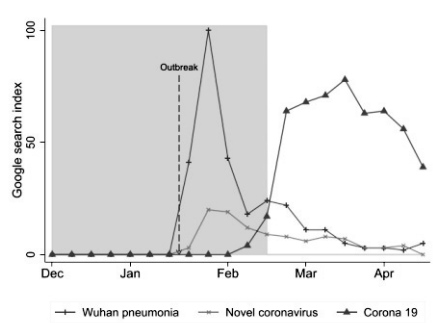


Figure1. Note. From "The Impact of Social Distancing on Box-Office Revenue: Evidence From the COVID-19 Pandemic" by Kim, I.K.(2020). Shaded areas cover weeks included in the sample period.

2.2 Movie theater industry in South Korea

Movie theater industry in South Korea experienced a huge growth between the late 1990 and early 2010s, but it has been increasingly stabilized and mature. In 2010, the nationwide audience size was 150 million and increased to 210 million in 2013 with the success of local movies (Kim, 2020). Since then, however, any notable change in consumer demand has not been identified, so this parallel trend before COVID 19 validates the use of Difference-in Differences approach to analyze the impact of social distancing on movie theater industry. One aspect distinct from U.S. market is that vertical integration between distributors and exhibitors is allowed in Korea, so three major corporations; CJ, Lotte, and JContentree, accounts for over 90 percent in the exhibition industry and 30 percent in the distribution industry in 2019 (Kim, 2020). COVID 19 has spread fear and concern among the consumers, so movie theater industry was also severely hit by the pandemic and movie demand has plunged. In response to this crisis, one local movie, "Time to Hunt", which was initially scheduled to be released on 26 February, was postponed twice and was eventually released on 23 April by Netflix. Since the production cost of this movie was about 10 billion Korean won, choice to skip theoretical release seems reasonable even though it was the only case of skipping of theatrical

release. However, choice to delay the theatrical release was more common than skipping decision. To explain, the number of delayed movies was 50 by early March. In addition, since late March, CJ and JContentree have decided to shut down several theaters, which is the reason why I restricted the sample period only to the third week of February to deal with this issue, the endogenous market reaction.

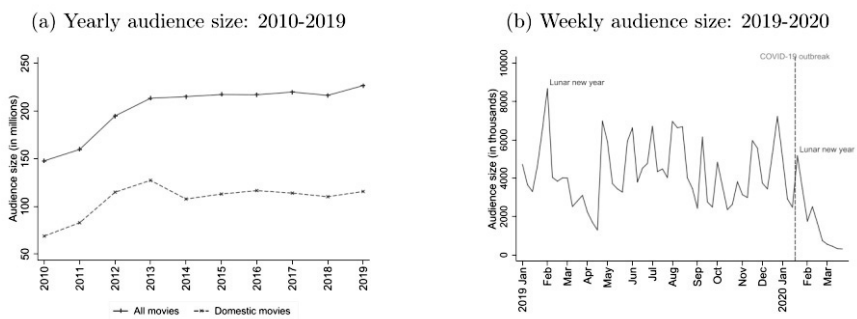


Figure 2. Note. From "The Impact of Social Distancing on Box-Office Revenue: Evidence From the COVID-19 Pandemic" by Kim, I.K.(2020). Parallel trend before pandemic is identified.

2.3 Literature Review on Mood Regulation Theory

Over the past few decades, there have been discrepancies in findings in the arena of mood-regulation literature. Multiple literature have shown that people who are in negative moods seek mood-incongruent, pleasant, stimuli to mitigate their negative feelings (Andrade 2005; Raghunathan and Corfman 2004; Tice, Bratslavsky, and Baumeister 2001; Zillmann 1988). Preference for mood-incongruent stimuli can be easily understood and explained by our natural desire to feel better and emotion regulation

literature have provided strong support for this hypothesis (Cohen, Pham, and Andrade, 2008).

However, under certain circumstances, less intuitive behaviors in which people deliberately expose themselves to sad music, tragic films when they have experienced negative feelings, have also been identified even when pleasant and cheerful alternatives also exist (mood-congruent preference: e.g., Gibson et al. 2000; Knobloch and Zillmann 2003; Martin et al. 1997). This opposite effect has imposed theoretical challenge because emotion regulation literature could not easily account for this phenomenon. Nevertheless, several studies have tried to provide answer to these conflicting findings and came up with reasonable hypothesis; when people face psychological distress due to broken inter-personal relationship, they prefer mood-congruent stimuli than mood-incongruent ones. Lee et al. (2013) have validated this assumption through three experiments and found the underlying mechanisms for such less intuitive behaviors. According to the findings of Lee et al. (2013), preference for mood-congruent stimuli (e.g., listening to sad music when feeling sad) can lead people to feel respected and supported, offering a sense of emotional sharing akin to interacting with empathetic friends. They delineated between the interpersonal distress induced by weakened, threatened, or lost relationship and non-interpersonal distress induced by the loss of money or having an accident, in providing explanation for the preference for mood-congruent stimuli. To explain, when people interact with others who has the same

mood when they are in negative moods, they find it helpful to deal with negativity (Schachter 1959).

Simply put, when people experience failing inter-personal relationship, they appreciate more mood-congruent, empathetic others who can provide emotional support and sense of belongings (Cohen and Wills 1985). In contrast, from the perspective of those who are hurt in inter-personal relationship, mood-incongruent, joyful, others are often perceived as less sensitive and less responsive to their affective state, which is the ultimate reason why they are less appreciated in this specific context (Lehman, Ellard, and Wortman 1986).

In this vein, mood-congruent aesthetic stimuli can also work as surrogates for the mood-sharing friends by signaling empathetic and supportive tone (Lee et al. 2013). Consequently, people who feel lonely or disconnected from other people prefer mood-congruent aesthetic experiences, ranging from music to films, to seek emotional support and comfort as they try to seek mental support from their empathetic friends.

Again, negative feelings based on interpersonal versus non-interpersonal issues should be distinguished here in this context. ***Loneliness*** (Gibson et al. 2000; Knobloch and Zillmann 2003; Mares and Cantor 1992) is one of typical examples of negative sentiments induced by broken interpersonal relationship. In addition, according to Nabi et al. (2006) and Martin et al.(1997), Wegener and Petty (1994), sexual cheating and death, which exemplify the failure of relationship, led people to prefer mood-

congruent stimuli. However, when negative feelings are associated with performance failure (Biswas et al. 1994; Knobloch and Zillmann 2002; Zillmann et al. 1980), physiological distress (Helregel and Weaver 1989; Meadowcroft and Zillmann 1987), or mental boredom or stress (Bryant and Zillmann 1984), mood-incongruent, joyful, aesthetic experiences were more appreciated. For example, when people experience negative, but non-interpersonal distress, such as negative feedbacks from machine, they tend to prefer mood-incongruent, cheerful tone stimuli (Knobloch and Zillmann 2002), whereas when people face broken interpersonal commitment, such as negative feedbacks from insulting experimenter, they preferred mood-congruent, negative stimuli (Biswas et al. 1994; Zillmann et al. 1980).

COVID-19 and social distancing measure have led people to feel disconnected with others and numerous studies have reported that COVID-19 and social distancing measure have had negative psychological impact (Qiu et al., 2020). According to Li and Wang (2020), higher degree of loneliness and risk of psychiatric disorder were identified among those who have had COVID-19 related symptoms. Considering that coronavirus keeps transforming itself and creating new variant, related psychological impact can also linger for a longer period of time even after the majority of population gets immunized. Therefore, the impact of negative sentiments induced by failing interpersonal relationship on movie theater industry can be closely analyzed to confirm prior findings in mood-regulation literature in empirical setting and to give decision makers insights to come up with

actionable strategies to recover viewership.

3.Data and Analysis

3.1 Data Description

It is reported that South Korea is composed of 17 major administrative divisions, with seven being the metropolitan cities and nine being the provinces. Sejong, referred as the new capital city, is excluded from the analysis because the construction of Sejong city is still underway (Kim 2020). Therefore, the remaining 16 divisions are defined as markets in this paper and Choongbook is the baseline market and omitted during the analysis. Between the third week of February 2018 and the third week of February 2020, I downloaded movie-market-week level data on total number of movies of both comedy/humor genre and sad/horror one within each week in each sixteen market and weekly audience size from Korea Box Office Information System (KOBIS). In addition, I downloaded the data on the number of confirmed cases depending on markets in South Korean from the webpage of Central Disease Control Headquarters.

Since the number of confirmed cases began to surge starting the fourth week of February 2020, I restricted sample period to the ***third week of February 2020*** because the degree of social distancing would be much more intensified afterwards, including mandatory government restrictions. Moreover, with this restriction, theater industry do not have enough time to

respond to pandemic, which helps researchers control for endogenous market reaction to some extent. In addition, given that schools in South Korea normally start starting March, observations of later months should be dropped to avoid confounding changes in movie consumption. The first shut down of theater took place in CGV Sungshin on the last day of January, but reopened only 3 days later after disinfection. There are four more cases of temporary closure during the sample period, but those cases cannot be excluded because data is aggregated at market level. However, considering that temporary closure lasted only about 2 to 3 days and there are only 5 such cases during the sample period, so including them will not cause any serious bias in estimation. Analysis do not include movies ranked below 20^{th} because the majority of movies below the rank of 20 are X-rated movies. This restriction in rank assures that choice sets do not vary across markets. I also excluded movies without release date information and also dropped movies played only in one market in that week. Here, humorous movies are defined as movies of genre termed as comedy/humor in the introduction section in KOBIS webpage. Likewise, sad, horror movies are movies with genre termed as sad, horror, criminal and disaster-related or thriller.

3.2 Model Specification

To account for change in demand for humorous movies, I compared weekly audience size per movie for humorous genre with those of a

comparable week a year ago in each market (Fang et al. 2020, Sim et al. 2020). I divided research period into two one-year long periods. The first year spans 52 weeks from March 1st, 2018 to February 23th,2019. The second year covers the following 52weeks from February 24th, 2019 to February 15th, 2020. The first week of the first year, which spans from March 1st to March 7th in 2018, corresponds to the first week of the second year, which spans from February 24th to March 2nd in 2019. To what extent the difference between the two years widened after the first confirmed case of COVID-19 on January 20th, 2020, can be identified by subtracting the earlier terms from the latter one. To quantify the differences, I employed difference-in-differences approach, which makes it possible for the researcher to leverage observations in the first year as the control group and those in the second year as the treated group.

$$\textbf{ln(Weekly audience size per humorous movie in the week)} = \alpha_m + \beta_1 . \ Treated_j + \beta_2 . \ After_t + \beta_3 . \ Treated_j \ . \ After_t + \sum m \sum j \ \alpha_m . \gamma_j + \sum m \sum j \ \alpha_m . \delta_t + Holiday_t + \varepsilon_{mjt} \quad (1)$$

, where m=1,2..m indexes markets, from Busan to Seoul, in South Korea; j=1,2 indexes two year period; t=1,2…52 indexes the week of the year. ***Weekly audience size per humorous movie*** is weekly total viewers of the humorous movies divided by the total number of humorous movies in market m, year j, and week t. $Treated_j$ indicates 1 if j=2 (the treatment year), 0 otherwise(the control year). $After_t$indicates 1 if the week of the

year t is later than January 20th, 2020 (First confirmed case of COVID-19 in South Korea) and 0 otherwise. α_m is market fixed effect(e.g., Busan, Seoul..etc), δ_t is a week-of-the year dummy variable. $\alpha_m.\gamma_j$ is the product of market dummy and year period dummy. $\alpha_m.\ \delta_t$ is the product of market dummy and week of the year dummy. $Holiday_t$ indicates 1 if Lunar New Year or Chuseok (Korean Thanksgiving Day) is included in the week based on lunar new year calendar. Since these two holidays are celebrated in different weeks each year, they can be separately identified from week fixed effect. They are the largest holidays in Korea. ε_{mjt} is the error-term clustered at market level to deal with auto-correlation in the data (Bertrand et al. 2004).

β_3 captures the impact of social distancing on the consumer demand for humorous movies. In equation (1), $\alpha_m.\gamma_j$ captures market-specific period fixed effect that controls for heterogeneity in annual growth of demand. $\alpha_m.\ \delta_t$ captures market-specific week-of-the-year fixed effect that reflects heterogeneity in seasonal demand. Cluster robust standard error is used here. Likewise, the impact of social distancing on the consumer demand for sad/horror movies was also explored.

$$\textbf{ln(Weekly audience size per sad/horror movie in the week)} = \alpha_m + \beta_1.\ Treated_j + \beta_2.\ After_t + \beta_3.\ Treated_j\ .\ After_t + \sum m \sum j\ \alpha_m.\gamma_j + \sum m \sum j\ \alpha_m.\ \delta_t + Holiday_t + \varepsilon_{mjt} \quad (2)$$

It is reasonable to assume that the first confirmed case of COVID-

19 is a useful indicator of the concern and fear among people, which have led them to be engaged in voluntary social distancing, but it does not reflect the heterogeneity in the severity of COVID-19 across each market in South Korea. Consequently, I use the number of confirmed COVID-19 cases as a measure to deal with this heterogeneity issue. According to Sim et al. (2020), they included the number of cases and deaths in the model by assuming that these variables can affect music listening behavior due to psychological factors; severity of situation might lead people not to look for music as entertainment or changes in complementary activities can have a negative impact on music consumption. With this specification, they could examine how adversely music streaming demand is affected depending on the severity of COVID-19 situation across countries and identified that the number of cases and deaths are negatively and significantly associated with music streaming demand (Sim et al. 2020).

In addition, Kim (2020) has identified that the magnitude in the negative impact of COVID-19 tend to be larger in densely-populated areas even though COVID-19 had a negative impact on consumers' utility from watching a movie in all markets. Ulsan and Daejeon, smaller cities than metropolitan areas, have lower population density and negative impact of COVID-19 tended to be smaller than the reference market(Choongbook) in those areas, whereas metropolitan areas with higher population density have shown larger negative impact of COVID-19 (Kim 2020). This is because people in densely populated areas tend to practice social distancing more

carefully than those in smaller cities with low population density, such as Kyungbook and Kyungnam, surrounding Daegu, which was designated as special disaster zone after the third week of February 2020 (Kim 2020). The intensity of social distancing depending on population density can affect the degree of loneliness induced by weakened interpersonal relationship accordingly. Based on these insights, I concluded that the heterogeneity in severity across markets in South Korea might also provide interesting implications in terms of demand for humorous movies and sad/horror movies respectively.

ln(Weekly audience size per humorous movie in the week)= $\alpha_m + \theta \mathbf{1}. Cases_{mjt} + \sum m \sum j \ \alpha_m . \gamma_j + \sum m \sum j \ \alpha_m . \ \delta_t \ + \sum j \sum j \ \gamma_j . \delta_t + Holiday_t + \ \varepsilon_{mjt}$ (3)

ln(Weekly audience size per sad/horror movie in the week)= $\alpha_m + \theta \mathbf{1}. Cases_{mjt} + \sum m \sum j \ \alpha_m . \gamma_j + \sum m \sum j \ \alpha_m . \ \delta_t \ + \sum j \sum j \ \gamma_j . \delta_t + Holiday_t + \varepsilon_{mjt}$ (4)

, where $\gamma_j . \delta_t$ is the product of period dummy and the week-of-the-year dummy. $Cases_{mjt}$ are the number of confirmed cases in market m, period j, and the week of the year t, respectively. $\sum j \sum j \ \gamma_j . \delta_t$ is a set of common time fixed effects to control for seasonality in underlying movie demand. $Holiday_t$ indicates 1 if Lunar New Year or Chuseok (Korean Thanksgiving Day) is included in the week based on lunar new year calendar. Likewise, the impact of social distancing on the consumer demand for sad/horror movies has also been explored.

4. Estimation results:

As seen from the table 1 and table 2 , the coefficient of $\boldsymbol{Treated_j \ . \ After_t}$ of equation (1) is 0.80**, significant at the 1 % level. On the contrary, the coefficient of $\boldsymbol{Treated_j \ . \ After_t}$ of equation (2) is -0.82**, significant at the 1 % level. This suggests that movie demand for comedy/humor genre has increased by 80 percent after the first confirmed case of COVID-19 in South Korea. On the contrary, movie demand for sad/horror genre has decreased by 82 percent after the first confined case of COVID-19. The direction of coefficients is contrary to what we have expected based on mood-regulation literature, but possible explanation for this estimation results will be proposed and discussed.

Table 1

Regression results using weekly total viewers of humor/comedy genre movies as the criterion with a set of market and time fixed effect

Predictor	*b*	*b* 95% CI [LL, UL]	sr^2	sr^2 95% CI [LL, UL]
(Intercept)	-40.03	[-579.23, 499.18]		
treated	-0.18	[-0.52, 0.16]	.00	[-.00, .00]
after	-0.63**	[-0.88, -0.37]	.01	[.00, .02]
did	0.80**	[0.21, 1.40]	.00	[-.00, .01]
Market FE				

	Yes			
Market* year	Yes			
Market *week	Yes			R^2= .355** 95%
Holiday	Yes			CI[.30,.37]

Note. A significant *b*-weight indicates the semi-partial correlation is also significant. *b* represents unstandardized regression weights. sr^2 represents the semi-partial correlation squared. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively.
* indicates p < .05. ** indicates p < .01.

Table 2

Regression results using weekly total viewers of sad/horror genre movies as the criterion with a set of market and time fixed effect

Predictor	*b*	*b* 95% CI [LL, UL]	sr^2	sr^2 95% CI [LL, UL]
(Intercept)	-145.04	[-701.89, 411.81]		
treated	1.14**	[0.79, 1.49]	.02	[.01, .03]
after	1.16**	[0.90, 1.42]	.03	[.02, .05]
did	-0.82**	[-1.44, -0.21]	.00	[-.00, .01]
Market FE	Yes			
Market*year	Yes			
Market *week	Yes			
Holiday	Yes			R^2 = .309** 95% CI[.25,.32]

Note. A significant *b*-weight indicates the semi-partial correlation is also significant. *b* represents unstandardized regression weights. sr^2 represents the semi-partial correlation squared. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively.
* indicates $p < .05$. ** indicates $p < .01$.

Possible explanations for this estimation results are as follows. There are many psychological mechanisms that can affect movie consumption. For example, ***perceived risk and imminent mortality*** (Mandel and Smeesters, 2008) have been reported to lead low self-esteem people to overconsume food to escape from self-awareness. According to the reports, it has been identified that consumers engage themselves in excessive eating and spending following terrorist attacks on September 11, 2001. For example, it has been reported that sales of Baskin-Robbins and Safety Supermarket have surged immediately after 9/11 (Hubler 2001) and Americans started to engage in excessive consumption, showing the desire of pursuing "seize the day" spirit (Cosgrove,2001). Overconsumption took various forms, such as buying luxury goods (White and Leung 2002), stocking up on canned goods, and indulging in sweets (Hubler 2001). This suggests that consumers engage in excessive consumption as a way to cope with thoughts of impending mortality when faced with increased mortality salience. According to Mandel and Smeesters (2008), this behavioral pattern was more pronounced among consumers who have low self-esteem; low self-esteem consumers who have been recently reminded of their own impending mortality were more likely to purchase higher quantities than do their

counterpart control groups.

This mechanism can work in the consumption settings of aesthetic stimuli as well. Perceived risk and imminent mortality after the first confirmed case of COVID-19 2020, as seen from the peak in volume of searching three key words related to COVID-19, might have had a larger impact on people than loneliness might have had, leading to higher demand for humorous and comedy movies, the mood-incongruent stimuli, to forget about their reality and alleviate negative feelings associated with much lowered self-esteem due to exacerbated socio-economic situation and death-related thoughts. Moreover, non-interpersonal distress, such as boredom, could lead people to prefer mood-incongruent joyful and humorous aesthetic stimuli. Therefore, consumers who feel boredom due to social distancing might prefer comedy/humor movies to sad/horror, the mood congruent aesthetic choices. Other possible psychological mechanisms might have played a larger role than loneliness in affecting consumer consumption decisions.

In addition, the income effect of COVID-19 (Chetty et al., 2020) obviously can affect movie demand as well, but exploring all these potential drivers are beyond the scope of this paper and can provide meaningful avenue for future research direction to more comprehensively understand this seemingly less-intuitive consumer behaviors.

Estimation results from equation (3) and (4) are quite interesting. Here, number of confirmed cases was used as the proxy for the severity of

COVID-19 situation and I expected that there is a heterogeneity across markets depending on the severity of situations. Even though only four markets, Seoul, Busan, Incheon, Jejudo, have shown statistically significant results, they provide meaningful implications because the results partially support our prior expectation based on mood regulation literature. According to the estimation results, in Seoul, as number of confirmed cases increases, movie demand for sad/horror movies also increased by 0.2 percent. In Busan, as the number of confirmed cases increases, consumer demand for humorous/comedy movies has decreased by 1 percent. Likewise, in Incheon and Jejudo, significant and positive impact (24% and 1% respectively) between number of confirmed cases and movie demand for sad/horror genre has been identified. This results can be interpreted as follows. Considering that Seoul and Busan are densely-populated areas in South Korea, estimation results confirm that the level of loneliness induced by social distancing and its impact on movie preferences would be different depending on the severity of situation across markets. As number of confirmed cases goes up, consumers in densely populated markets engage more carefully in social distancing, consequently the impact of loneliness on movie preferences could have been more easily identified. However, here again, because of the restriction in sample period to deal with endogenous market reaction, the number of observations for the number of confirmed cases is quite small. If data of later time period can be included under the research context in which supply side dynamics do not have to be controlled

for, I expect more interesting implications regarding market heterogeneity can be brought about.

Table 3

***y1= Weekly audience size per humorous movie in the week**
***y2= Weekly audience size per sad/horror movie in the week**
***Table 3 shows the result of four markets, Seoul, Kyounggido, Busan, Daegu, starting from the left.**

	Dependent variable:							
	y1 (1)	y2 (2)	y1 (3)	y2 (4)	y1 (5)	y2 (6)	y1 (7)	y2 (8)
Constant	-190.22	-3,490.26*	-800.47	-6,572.50	9,536.60**	2,573.20	9,020.56**	3,974.73
	(2,635.33)	(1,434.51)	(4,220.15)	(4,154.89)	(2,217.57)	(5,142.95)	(1,969.73)	(2,509.67)
cases	0.002	0.002**	0.004	-0.0003	-0.01**	-0.002	0.01	-0.005
	(0.001)	(0.001)	(0.004)	(0.004)	(0.002)	(0.005)	(0.004)	(0.005)
year	0.12	1.74*	0.40	3.24	-4.70**	-1.25	-4.47**	-1.94
	(1.31)	(0.71)	(2.10)	(2.07)	(1.10)	(2.55)	(0.98)	(1.25)
week	-0.52*	-0.08	0.11	0.38	-0.33	-0.27	0.18	-0.38
	(0.19)	(0.10)	(0.31)	(0.31)	(0.14)	(0.33)	(0.15)	(0.19)
holiday					-2.90**	-0.09	0.69	-0.49
					(0.81)	(1.87)	(0.83)	(1.05)
year:week								
Observations	8	8	8	8	8	8	8	8
R^2	0.75	0.84	0.25	0.74	0.92	0.35	0.91	0.87
Adjusted R^2	0.56	0.72	-0.31	0.55	0.81	-0.51	0.78	0.69
Residual Std. Error	1.00 (df = 4)	0.54 (df = 4)	1.47 (df = 4)	1.44 (df = 4)	0.62 (df = 3)	1.43 (df = 3)	0.70 (df = 3)	0.89 (df = 3)
F Statistic	4.00 (df = 3; 4)	6.99** (df = 3; 4)	0.45 (df = 3; 4)	3.86 (df = 3; 4)	8.46* (df = 4; 3)	0.41 (df = 4; 3)	7.32* (df = 4; 3)	4.96 (df = 4; 3)
Note:								*p **p ***p<0.01

Table4

***Table 4 shows the result of three markets, Incheon, Kyoungsangnamdo, Guangju, starting from the left.**

	Dependent variable:					
	y1	y2	y1	y2	y1	y2
	(1)	(2)	(3)	(4)	(5)	(6)
Constant	-1,869.99	7,928.77**	-1,241.29	-1,728.26	-719.95	724.27
	(2,676.33)	(1,412.94)	(3,082.01)	(2,709.19)	(4,440.32)	(2,436.11)
cases	-0.16	0.24*	-0.01	0.002	-0.01	-0.02
	(0.14)	(0.08)	(0.01)	(0.01)	(0.02)	(0.01)
year	0.91	-3.92**	0.62	0.87	0.34	-0.35
	(1.33)	(0.70)	(1.53)	(1.35)	(2.21)	(1.21)
week	0.48*	-0.08	0.04	-0.14	0.42	-0.13
	(0.19)	(0.10)	(0.22)	(0.19)	(0.35)	(0.19)
holiday	1.10	1.06			-1.64	-1.97
	(1.12)	(0.59)			(1.73)	(0.95)
year:week						
Observations	8	8	8	8	8	8
R^2	0.85	0.96	0.17	0.15	0.64	0.72
Adjusted R^2	0.66	0.91	-0.46	-0.49	0.16	0.35
Residual Std. Error	0.88 (df = 3)	0.46 (df = 3)	1.14 (df = 4)	1.00 (df = 4)	1.46 (df = 3)	0.80 (df = 3)
F Statistic	4.32 (df = 4; 3)	19.28** (df = 4; 3)	0.26 (df = 3; 4)	0.24 (df = 3; 4)	1.34 (df = 4; 3)	1.93 (df = 4; 3)
Note:						*p**p***p<0.01

Table 5

***Table 5 shows the result of three markets, Daejeon, Choongcheongnamdo, Jeonlabookdo, starting from the left.**

	Dependent variable:					
	y1	y2	y1	y2	y1	y2
	(1)	(2)	(3)	(4)	(5)	(6)
Constant	19.98	-5.60	808.89	-1,588.95	9,225.10	26,781.71
	(11.10)	(14.17)	(5,590.60)	(2,216.51)	(25,267.04)	(39,860.15)
cases	0.01	0.002	0.08	-0.02	-0.01	-0.04
	(0.01)	(0.01)	(0.08)	(0.03)	(0.03)	(0.04)
year			-0.41	0.81	-4.56	-13.26
			(2.78)	(1.10)	(12.51)	(19.74)
week	-0.23	0.28	0.19	-0.27	-0.07	0.10
	(0.23)	(0.30)	(0.40)	(0.16)	(0.15)	(0.24)
holiday	0.90	0.52			0.29	-1.03
	(1.40)	(1.79)			(0.74)	(1.17)
year:week						
Observations	8	8	8	8	8	8
R^2	0.29	0.36	0.28	0.45	0.43	0.79
Adjusted R^2	-0.24	-0.11	-0.26	0.04	-0.34	0.52
Residual Std. Error	1.19 (df = 4)	1.51 (df = 4)	2.12 (df = 4)	0.84 (df = 4)	0.61 (df = 3)	0.96 (df = 3)
F Statistic	0.55 (df = 3; 4)	0.76 (df = 3; 4)	0.52 (df = 3; 4)	1.11 (df = 3; 4)	0.56 (df = 4; 3)	2.90 (df = 4; 3)
Note:						$^{*}p$ $^{**}p$ $^{***}p<0.01$

Table 6

***Table 6 shows the result of three markets, Kyungsangbookdo, Gangwondo, Choongchengbookdo, starting from the left.**

	Dependent variable:					
	y1	y2	y1	y2	y1	y2
	(1)	(2)	(3)	(4)	(5)	(6)
Constant	-3,063.78	-1,758.74	1,988.19	-4,985.45	-2,602.11	-5,836.92*
	(4,801.31)	(2,118.75)	(4,174.81)	(3,195.89)	(2,548.13)	(2,299.15)
cases	-0.03	0.01	-0.001	0.002	0.004	-0.0001
	(0.06)	(0.03)	(0.005)	(0.004)	(0.003)	(0.003)
year	1.53	0.88	-0.96	2.48	1.30	2.92*
	(2.39)	(1.05)	(2.08)	(1.59)	(1.27)	(1.14)
week	-0.18	-0.12	-0.37	-0.22	-0.05	-0.43*
	(0.34)	(0.15)	(0.30)	(0.23)	(0.19)	(0.17)
holiday	-1.44	-1.61			0.27	-1.38
	(1.97)	(0.87)			(1.05)	(0.94)
year:week						
Observations	8	8	8	8	8	8
R^2	0.22	0.58	0.51	0.48	0.58	0.75
Adjusted R^2	-0.83	0.02	0.14	0.09	0.03	0.41
Residual Std. Error	1.63 (df = 3)	0.72 (df = 3)	1.48 (df = 4)	1.13 (df = 4)	0.85 (df = 3)	0.77 (df = 3)
F Statistic	0.21 (df = 4; 3)	1.03 (df = 4; 3)	1.37 (df = 3; 4)	1.23 (df = 3; 4)	1.06 (df = 4; 3)	2.20 (df = 4; 3)

Note: *p**p***p<0.01

Table 7

***Table 7 shows the result of three markets, Ulsan, Jeonlanamdo, Jejodo, starting from the left.**

	Dependent variable:					
	y1	y2	y1	y2	y1	y2
	(1)	(2)	(3)	(4)	(5)	(6)
Constant	-3,689.33	-2,403.13	-3,460.14	74.73	-1,347.61	-1,718.90
	(6,152.25)	(1,952.15)	(2,259.60)	(2,888.52)	(5,208.16)	(1,235.32)
cases	0.005	-0.002	0.01	0.01	-0.01	0.01*
	(0.02)	(0.01)	(0.01)	(0.01)	(0.02)	(0.005)
year	1.83	1.21	1.73	-0.05	0.64	0.86
	(3.06)	(0.97)	(1.12)	(1.44)	(2.59)	(0.61)
week	-0.04	-0.24	-0.16	0.33	0.71	-0.12
	(0.44)	(0.14)	(0.17)	(0.22)	(0.38)	(0.09)
holiday	0.99	0.58	0.001	-0.23	2.02	-0.93
	(2.56)	(0.81)	(0.91)	(1.16)	(2.19)	(0.52)
year:week						
Observations	8	8	8	8	8	8
R^2	0.24	0.65	0.52	0.69	0.72	0.81
Adjusted R^2	-0.77	0.18	-0.12	0.27	0.34	0.55
Residual Std. Error (df = 3)	2.13	0.68	0.77	0.98	1.82	0.43
F Statistic (df = 4; 3)	0.24	1.38	0.82	1.65	1.91	3.12

Note: $^{*}p$ $^{**}p$ $^{***}p<0.01$

Specification Tests

Test of the assumption of difference-in-differences estimation

Figure 2 shows that the mature movie theater industry of South Korea do not show any notable change in yearly audience size since 2013, so we can visually see the parallel trend before the pandemic, but I checked it again using subsample. This paper relies on difference-in-differences method to identify the causal effect of loneliness induced by social distancing on consumer preference for movie genre. In order for DID estimator to remain free from bias and sustain internal validity, pre-trend parallel assumption should be satisfied. Although this assumption is not directly testable, researchers can check this by taking advantage of variations in treatment timing. I use the subsamples of markets in year 2018, i.e., prior to COVID-19 crisis. Since none of markets have been exposed to COVID-19 in 2018, I expect that DID estimates do not show any significant results. I could find that the estimation results do not show any statistical significance, consequently satisfying pre-trend parallel assumption.

Table 8

Regression results using weekly total viewers of humor/comedy genre movies as the criterion

Predictor	*b*	*b* 95% CI [LL, UL]	Fit
(Intercept)	8.47**	[8.38, 8.55]	
treated	-0.24	[-0.57, 0.09]	R^2 = .016**
after	-0.69**	[-0.95, -0.43]	95% CI[.01,.03]
did	0.68	[-0.02, 1.37]	
Market FE	Yes		
Market *year	Yes		
Market* week	Yes		
Holiday	Yes		

Note. A significant *b*-weight indicates the beta-weight and semi-partial correlation are also significant. *b* represents unstandardized regression weights. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively.* indicates $p < .05$. ** indicates $p < .01$.

Table 9

Regression results using weekly total viewers of sad/horror genre movies as the criterion

Predictor	*b*	*b* 95% CI [LL, UL]	Fit
(Intercept)	-98.47**	[-629, 529.81]	

			R^2 = .023**
treated	0.81	[0.52, 0.93]	95% CI[.02,.04]
after	1.12**	[0.92, 1.43]	
did	-0.52	[-0.82, -0.22]	
Market FE	Yes		
Market *year	Yes		
Market* week	Yes		
Holiday	Yes		

Note. A significant *b*-weight indicates the beta-weight and semi-partial correlation are also significant. *b* represents unstandardized regression weights. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively.
* indicates $p < .05$. ** indicates $p < .01$.

5. Conclusions

5.1 Limitations

In movie theater industry, it is important to account for supply-side dynamics, in addition to demand side factors to avoid bias in estimation. For example, distributors ex ante tend to release movies with higher chance of success during high demand seasons, such as the beginning of the summer or Christmas holiday seasons (Einav, 2007). Einav(2007) has found that about a third of seasonal variation in sales could be attributed to the choice

of number and quality of movies by distributors, so conventional wisdom which attributes seasonal variation in sales mostly to demand factors is a flawed approach. Likewise, distributors tend to delay the release of movies or even skip the theatrical release when demand is expected to be low. Therefore, it is challenging for the researcher to determine whether huge movie demand is the result of increased underlying demand or better quality, higher number of available movies in the market. To explain, if distributors decide to release movies early in summer, they can have time to release video or DVD versions before Christmas (Chiou, 2006). Similarly, if children's movies are released on Thanksgiving day, related merchandise sales can be complemented in the following shopping seasons (Einav, 2007). However, release on Labor day may signal that movie's quality is bad from the perspectives of consumers.

Therefore, it is inevitable for the distributors to strategize optimal release date, which triggers the endogeneity of observed seasonal patterns. Endogeneity issue frequently arise in non-RCT (Randomized Control Experiment) and researchers have tried to come up with various econometric approaches to deal with this issue, including instrumental variable approach and quasi-experimental methods. Unfortunately, it is very challenging to find suitable instruments, which satisfy both relevance and exogeneity assumption, in movie theater industry context. Therefore, I restricted the sample period only to the third week of February 2020 when the number of confirmed COVID-19 cases was not yet surged and thus the

degree of endogenous market reaction was still negligible (only five cases of temporary closure during the sample period). However, still, it would be more fruitful research if this endogenous market reaction is accounted for and suitable instruments are found and employed together, which is another important research topic in the future.

Moreover, there can be various psychological mechanisms that can affect consumer preferences for movie genre during COVID-19 crisis, from loneliness to the perception of imminent mortality. To explain, negative sentiments, such as perceived risk and imminent mortality, in this era of pandemic, could have played larger role than loneliness in affecting consumer choice of which genre to watch. Given the research findings that perceived risk and imminent mortality can lead consumers who have low self-esteem to overconsume to mitigate the negative sentiments related to their low self-esteem (Mandel and Smeesters, 2008), consumer demand for comedy/humor genre movie might have increased by the consumers whose self-esteem gets damaged due to the exacerbating socio-economic situations caused by COVID-19, consequently trying to forget about the reality and overly seeking mood-incongruent, joyful, aesthetic experiences to forget about the reality.

In addition, since sample period is restricted only to the 3rd week of February 2020 to circumvent confounding factors, such as endogenous market reaction and the start of the schools starting march, it is possible that time was too short for people to feel loneliness due to voluntary social

distancing. If data of later time period is also included, the impact of loneliness stemming from voluntary social distancing can be more easily identified, but confounders mentioned above might cause serious bias in estimation. Therefore, even though results might confirm the prior expectation based on mood-regulation literature if data of later time period is also included, they are no longer reliable. As a researcher, there was a trade-off between controlling for endogenous market reaction and identifying the impact of loneliness induced by social distancing. This dilemma cannot be separated from researchers due to the distinct nature of movie theater industry, so datasets of Netflix, one of biggest streaming platforms, are available in the near future, more fruitful research can be conducted without too much emphasis on controlling for endogenous market reaction.

5.2 Contributions and Future Research Directions

COVID-19 and social distancing practice have transformed many aspects of life, leading people to turn away from brick-and-mortar retailers and to shift toward online streaming services and online shopping. Although it is obvious that many brick-and-mortar business have been severely hit during this pandemic era, understanding the underlying psychological mechanisms and quantifying the drop in viewership in a certain industry are

meaningful empirical question. In this paper, I study the short-run impact of voluntary social distancing implemented due to COVID-19 on Korean movie theater industry by delving into underlying psychological mechanisms based on the previous findings in mood-regulation literature. Using movie-market-week level data between February 2018 and February 2020, I employed difference-in-differences approach to find evidence for preference for mood-congruent aesthetic stimuli when people feel disconnected with others due to social distancing practice.

Estimation results show that voluntary social distancing after the first confirmed case of COVID-19 is significantly and positively associated with consumer demand for comedy/humor genre movies, whereas it is negatively associated with consumer demand for horror/sad genre movies. Even though this result does not shore up our original expectation based on prior mood-regulation literature, possible explanation for this result was discussed in detail.

This paper is the first literature to empirically test consumer preference for aesthetic stimuli during the pandemic era in which psychological impact, such as higher loneliness and depression, is prevalent and may persist even after the situation gets improved. Moreover, this is the first attempt to combine epidemiology, psychological impact of social distancing and their impact on movie choice, and mood-regulation theory, which ultimately helped to bridge the gap in conflicting findings in mood-regulation literature. Last but not least, this paper can provide important

managerial implications for both movie theater industry and streaming platforms, such as Netflix and Disney +, to develop strategies to maximize viewership and complement lost revenue.

If COVID-19-induced psychological impact, such as higher loneliness and feelings of being disconnected with others, has dented overall sales of movies, new strategic approach to alleviate the negativity associated with failing inter-personal relationship should be devised. For example, SPOTIFY has introduced group session feature called “Listening Together”, which makes it possible for users to share their playlists and podcasts with up to four people. Moreover, they enhanced the video-features to allow users real-time interactions between artists and users starting July 2020(Sim et al., 2020). Especially in music industry, attempts to find alternative channels to intensify engagement and close relationship with audience are noticeable. BTS, popular K-pop star of South Korea, held virtual-streamed live concert and could draw 76,0000 viewers and ticket sales revenues created from this event reached almost $ 20 million (Music Business Worldwide 2020). These attempts to find alternative channels suggest important managerial implications for movie theater industry as well. To explain, in movie theater industry, usually 2 or 3 weeks before the actual release of movies, they hold “sneak pre-release” by inviting some audience to the cinema, which also determines word of mouth effect afterwards, crucial for movie success. However, due to COVID-19, this pre-release event is frequently canceled, which would obviously have a negative impact

on the efficiency of promotion and word of mouth effect. Consequently, practitioners in theater industry may also consider alternative avenue to be connected with future audience by holding virtual pre-release events and being actively involved in creating word of mouth dynamics to cope with this situation and to regain viewership.

Given that music streaming consumption level rebounded when COVID-19 situation was temporarily eased during late April and May 2020 (Sim et al., 2020), question on whether this decline in movie demand for a certain genre and movie demand in general is transient or lasting is noteworthy for future research. As restrictions are lifted, movie demand may regain normalcy, but change in behavioral patterns of people and psychological impact of COVID-19 may linger, which can accordingly affect their product and service consumption decisions. Even though chaotic COVID-19 situation is over, behavioral patterns induced by pandemic, such as working from home, social distancing, and wearing a mask can persist, the point in which practitioners in various industries should note during and post COVID-19. As consumers shift toward Netflix and Disney+, it would be also important question for movie theater industry to predict how many of consumers will comeback in the long run. Pandemic-led drop in overall sales revenue may change the competitive environment and market structure of movie theater industry in the long run, which will be also insightful future research topic. In addition, according to Sim et al. (2020), it has been identified that newly released songs in SPOTIFY received less attention

from consumers during pandemic era than they did before, but underlying mechanisms behind why consumers pay less attention to the new release than they did before COVID-19 were not yet closely explored. This implies that consumers may pay less attention to movies in general even though there have been varying outcomes depending on the genre of movies. This phenomenon can also be associated with psychological impact of COVID-19, in addition to different promotion strategies and Word of Mouth effect accordingly, which paves the way for another interesting future research topic.

References

Andrade, Eduardo B. (2005), "Behavioral Consequences of Affect: Combining Evaluative and Regulatory Mechanisms," Journal of Consumer Research, 32 (December), 355–62.

Biswas, Rahul, Daniel Riffe, and Dolf Zillmann (1994), "Mood Influence on the Appeal of Bad News," Journalism and Mass Communication Quarterly, 71 (3), 689–96.

Bryant, Jennings, and Dolf Zillmann (1984), "Using Television to Alleviate Boredom and Stress: Selective Exposure as a Function of Induced Excitational States," Journal of Broadcasting, 28 (1), 1–20.

Chiou, L. (2008). The timing of movie releases: Evidence from the home video industry. *International Journal of Industrial Organization*, *26*(5), 1059–1073. https://doi.org/10.1016/j.ijindorg.2007.11.005

Chetty, R., Friedman, J. N., Hendren, N., Stepner, M. (2020) How Did COVID-19 and Stabilization Policies Affect Spending and Employment? A New Real-Time Economic Tracker Based on Private Sector Data. NBER Working Paper No. 27431

Cohen, Joel B., Michel T. Pham, and Eduardo B. Andrade (2008), "The Nature and Role of Affect in Consumer Behavior," in Handbook of Consumer Psychology, ed. Curt Haugtvedt, Frank Kardes, and Paul Herr, Mahwah, NJ: Erlbaum, 297– 348.

Cohen, Sheldon, and Thomas A. Wills (1985), "Stress, Social Support, and the Buffering Hypothesis," Psychological Bulletin, 98 (2), 310–57.

Cosgrove, Julia (2001), "What-the-Hell Consumption," Business Week, October 29, 12.

Einav, L. (2007). Seasonality in the U.S. motion picture industry. RAND Journal of Economics, 38(1), 127–145.

Fang, H., Wang, L., Yang, Y. (2020) Human mobility restrictions and the spread of the Novel Coronavirus (2019-nCoV) in China. Journal of Public Economics 191:104272.

Gibson, Rhonda, Charles F. Aust, and Dolf Zillmann (2000), "Loneliness of Adolescents and Their Choice and Enjoyment of Love-Celebrating versus Love-Lamenting Popular Music," Empirical Studies of the Arts, 18 (1), 43–8.

Groarke, J., Berry, E., Graham-Wisener, L., McKenna-Plumley, P., McGlinchey, E., & Armour, C. (2020). Loneliness in the UK during the COVID-19 pandemic: Cross-sectional results from The COVID-19 Psychological Wellbeing Study. https://doi.org/10.31234/osf.io/j2pce

Helregel, Brenda K., and James B. Weaver (1989), "Mood-Management during Pregnancy through Selective Exposure to Television," Journal of Broadcasting and Electronic Media, 33 (1), 15–33.
Hubler, Shawn (2001), "Americans Fend Off Sorrow with LadenFork and Spoon; People Are Craving Sweets, Getting Together for Potlucks, Canning Goods, Baking Pies, and Carbo Loading (and Therefore Exercising),"Los Angeles Times, October 2, E1
(19) (PDF) The Sweet Escape: Effects of Mortality Salience on Consumption Quantities for High- and Low-Self-Esteem Consumers. Available from: https://www.researchgate.net/publication/23547454_The_Sweet_Escape_Effects_of_Mortality_Salience_on_Consumption_Quantities_for_High-_and_Low-Self-Esteem_Consumers [accessed May 09 2021].

Kim, I. K. (2020). The Impact of Social Distancing on Box-Office Revenue: Evidence From the COVID-19 Pandemic. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.3578822

Knobloch, Silvia, and Dolf Zillmann (2002), "Mood Management via the Digital Jukebox," Journal of Communication, 52 (2), 351–66. ——— (2003), "Appeal of Love Themes in Popular Music," Psychological Reports, 93 (3), 653–58.

Lee, C. J., Andrade, E. B., & Palmer, S. E. (2013). Interpersonal Relationships and Preferences for Mood-Congruency in Aesthetic Experiences. *Journal of Consumer Research*, *40*(2), 382–391. https://doi.org/10.1086/670609

Lehman, Darrin R., John H. Ellard, and Camille B. Wortman (1986), "Social Support for the Bereaved: Recipients' and Providers' Perspectives on What Is Helpful," Journal of Consulting and Clinical Psychology, 54 (4), 438–4

Lehman, Darrin R., John H. Ellard, and Camille B. Wortman (1986), "Social Support for the Bereaved: Recipients' and Providers' Perspectives on What Is Helpful," Journal of Consulting and Clinical Psychology, 54 (4), 438–46.

Leung, T.C., Qi, S., Yuan, J. (2019). Movie industry demand and theater availability. Review of Industrial Organization, 1–25.

Li, L. Z., & Wang, S. (2020). Prevalence and Predictors of General Psychiatric Disorders and Loneliness during COVID-19 in the United Kingdom: Results from the Understanding Society UKHLS. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.3617302

Mares, Marie-Louise, and Joanne Cantor (1992), "Empathy and Mood Management versus Social Comparison: Elderly Viewers' Responses to Televised Portrayals of Old Age," Communication Research, 19 (4), 459–78.
Martin, Leonard L., Teresa Abend, Constantine Sedikides, and Jeffrey D. Green (1997), "How Would I Feel If . . .? Mood as Input to a Role Fulfillment Evaluation Process," Journal of Personality and Social Psychology, 73 (2), 242–53.
Meadowcroft, Jeanne M., and Dolf Zillmann (1987), "Women's Comedy Preferences during the Menstrual Cycle," Communication Research, 14 (2), 204–18.
Mandel, N., Smeesters, D. (2008) The Sweet Escape: Effects of Mortality Salience on Consumption Quantities for High- and Low-Self-Esteem Consumers. Journal of Consumer Research 35(2):309–323
Music Business Worldwide (2020) Despite the pandemic, Big Hit Entertainment generated revenues of $436M in the first 9 month of 2020. (November 16) Accessed November 25, 2020, https://www.musicbusinessworldwide.com/despite-the-pandemic-big-hitentertainment-generated-revenues-of-436m-in-the-first-9-months-of-2020/.
Nabi, Robin L., Keli Finnerty, Tricia Domschke, and Shawnika Hull (2006), "Does Misery Love Company? Exploring the Therapeutic Effects of TV Viewing on Regretted Experiences," Journal of Communication, 56
Qiu, J., Shen, B., Zhao, M., Wang, Z., Xie, B., Xu, Y., 2020. A nationwide survey of psychological distress among Chinese people in the COVID-19 epidemic: implications and policy recommendations. Gen. Psych. 33, e100213. https://doi.org/10.1136/ gpsych-2020-100213.
Raghunathan, Rajagopal, and Kim P. Corfman (2004), "Sadness as Pleasure-Seeking Prime and Anxiety as Attentiveness Prime: The 'Different Affect–Different Effect' (DADE) Model," Motivation and Emotion, 28 (1), 23–41.
Schachter, Stanley (1959), The Psychology of Affiliation, Stanford, CA: Stanford University Press.

Sim, J., Cho, D., Hwang, Y., & Telang, R. (2020). Virus Shook the Streaming Star: Estimating the COVID-19 Impact on Music Consumption. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.3649085

Tice, Dianne M., Ellen Bratslavsky, and Roy F. Baumeister (2001),

"Emotional Distress Regulation Takes Precedence over Impulse Control: If You Feel Bad, Do It," Journal of Personality and Social Psychology, 80 (1), 53–67
Wegener, Duane T., and Richard E. Petty (1994), "Mood Management across Affective States: The Hedonic Contingency Hypothesis," Journal of Personality and Social Psychology, 66 (6), 1034–48
Zillmann , Dolf (1988), "Mood Management: Using Entertainment Media to Full Advantage," in Communication, Social Cognition and Affect, ed. Lewis Donohew, Howard E. Sypher, and E. Tory Higgins, Hillsdale, NJ: Erlbaum, 147–71.
Zillmann, Dolf, Richard T. Hezel, and Norman J. Medoff (1980), "The Effect of Affective States on Selective Exposure to Televised Entertainment Fare," Journal of Applied Social Psychology, 10 (4), 323–39

이중 차분 모형에 기반한 사회적 거리두기의 소비자 영화 선호에 대한 영향에 관한 연구

나날이 심각해지는 코비드-19 상황과 그에 따른 사회적 거리 두기는 전세계적으로 하나의 새로운 관습으로 자리잡게 되었다. 코비드-19 창궐 이래, 사회적 거리 두기가 음악과 영화와 같은 특정 산업에 끼친 영향에 대한 연구는 다수 진행되어 왔지만, 변화된 소비자 행동에 있어 어떠한 기저 메커니즘이 작용하는지에 대한 연구는 부족한 실정이었다. Qiu et al. (2020) 와 Li and Wang (2020)의 연구는 코비드와 사회적 거리 두기가 사회적 고립감, 외로움을 야기하며 코비드 관련 증상을 한번이라도 경험한 사람들에게서 더 두드러진 영향이 있었음을 확인하였다. 본 연구는 사회적 거리 두기로 야기 되는 어떠한 정신적 메커니즘이 소비자의 영화 장르 선호 체계에 영향을 주는지 분석 하고, 기존의 mood-regulation literature의 상충되는 발견을 설명하는 데에 기여를 한다는 점에서 의의가 있다. 또한, 사회적 고립과 그에 따른 외로움이 만연한 글로벌 판데믹이란 특수한 상황에서, 한국 영화 시장이란 특정 시장에 대한 사회적 거리 두기의 영향을 이중 차분 모형에 기반하여 실증적으로 분석한 첫 연구라는 점에서 그 의의가 있다. 더불어, 판데믹 상황에서의 소비자의 소비 패턴의 변화와 그 변화에 영향을 끼친 기저 메커니즘에 대한 이해는 급격하게 감소한 viewership 과 sales 로 인해 타격을 받은 brick and mortar theater industry 뿐만 아니라 급격한 성장중인 온라인 스트리밍 플랫폼들의 실무자들 에게도 중요한 인사이트를 제공한다는 점에서 기여가 크다.

주요어: 코비드-19, Mood-regulation literature, 한국 영화 시장, 사회적 거리 두기, 이중 차분 모형
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