한국 시장에서 상영한 한국영화와 외국영화의 3단계 성과와 군집행동(Herding behavior)현상의 분석

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Three Stage Performances and Herding of Domestic and Foreign Films in the Korean Market

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This article analyzes film performances in the Korean movie market utilizing three-stage models that incorporate available information in three different stages of the movie life cycle, i.e., at the time of its release, at the end of the first week, and at the end of its life cycle. Based on the premise that the performance of a movie is affected principally by factors of scale, evaluation, and competition, we attempted to ascertain the effects on these factors on performances, and how they differ in different stages. Also, by analyzing domestic and foreign movies released in Korea separately, we were able to compare the different effects of the three factors on the performances of the two categories of movies. Additionally, our movie performance models incorporated herding behavior among the customers. Our results demonstrate that herding is prominently observed after the first week only for domestic movies. In general, the scale factor has been shown to be most important for movie performances in all stages. For foreign films, it is particularly critical for the first week and total performances. Whereas the evaluation factor influences domestic film performance more strongly at the screen choice stage, it affects the performance of foreign films more strongly in the later stages of the life cycle. As compared to foreign films, domestic film performance appears to be more sensitive to the competition factor. We also discuss the effects of covariates such as genre and symbolicity on movie performance.

Key words: Movie performances, Herding behavior, Three stage models, Scale factor, Evaluation factor, Competition factor, Korean movie market

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I. Introduction

One of the curious characteristics of the movie industry is that the total performance of a movie is related closely to its performance in the first week after its release. The first week's performance, in turn, is profoundly influenced by the number of screens on which it is shown. Thus, once the first week's performance is known, we can predict total performance with a great deal more accuracy. Similarly, once the number of screens shown is known, we can much more accurately predict the first week's performance. In this article, we analyze the performances of movies released in Korea at three different stages of the movie life cycle- that is, at the release stage (when the number of screens on which the movie is to be shown is decided), at the end of the first week after the movie release, and at the end of the movie's life cycle. We analyzed three-stage models that utilized all pieces of available information at each of the three different stages. For example, for the third stage model, the first week's performance information can be utilized in combination with all of the pieces of information available for the second stage model. For the second stage model, information regarding the number of screens on which a movie is shown and the viewers' evaluation scores for the movie are available, in addition to information that can be utilized for the first stage model.

Previous literature demonstrates that predictors of movie performances include star power, director power, advertising expenditures, numbers of screens showing the film, critics' ratings, nomination records for movie awards, symbolicity, release timing, and MPAA rating. Here, symbolicity refers to a given film being a sequel or being based on an original novel. In our models, we categorize these and other predictors of movie performances into four main categories: scale factor, evaluation factor, competition factor, and covariates. The scale factor for a certain stage model is associated with the quantity of investment in a movie, and the movie's performance in the earlier stages. The evaluation factor for a movie is related with the critic's ratings and/or the evaluation scores of the movie viewers. Competition primarily represents the number of screens occupied by important competitors at the time at which a movie is released. Other variables, including genre, release timing, symbolicity, MPAA rating, whether or not the movie is produced by a major producer, and whether or not it is distributed by a major distributor are categorized as covariates.

Another unique feature of the models analyzed herein is that they incorporate the herding behavior of customers. Herding occurs in cases in which people tend to do what others are doing (Banerjee 1992). Consumers often use the relative popularity of products as an indication of both the quality and the appropriateness of those products when making their own choices

(Hanson and Putler 1996). Herding is so broadly observed in Korean society that Kang (2006) has claimed that herding, referred to as "solim" in his terminology, is one of the basic characteristics of the Korean people. Herding is believed to be observed in the Korean movie market, as well. Typically, a handful of films draw exceptionally large numbers of viewers. The herding phenomenon gains momentum when a substantial number of viewers share in common a sentiment that a given film is one that every Korean should see. Once a movie achieves such momentum, it is recommended to non-viewers, not only by viewers-via strong and powerful word-of-mouth interactions-but also by major online and off-line communication firms, via their influential articles. Huang and Chen (2006) have shown that sales volume and customer reviews do indeed influence the online product choices of consumers. Similarly, we expect that the herding momentum is likely to occur when a blockbuster movie or a movie that showed great success in the early stages is evaluated as excellent by film critics and/or by movie viewers.

In this article, we address three basic questions. First, what are the effects of scale, evaluation, and competition factors on movie performances at the three different stages of the movie life cycle? Second, in which stages of the movie life cycle is the herding effect observed, if indeed it is observed? Third, do the three factors and herding affect the performances of

Korean and foreign movies differently? Applying the three stage movie performance models to films released in Korea, we analyzed the differing effects of scale, evaluation, and competition factors and herding on performances at different life cycle stages. Additionally, via separate applications of the three stage models to domestic and foreign films released in Korea, we determined how those factors affected the performance of Korean and foreign movies differently in the three stages of the life cycle.

For empirical analysis, we utilized a database containing information about 73 Korean films and 101 foreign films released from May 2004 to August 2005. Only films produced in the United States or in the United Kingdom (US/UK films, hereafter) were included in the foreign film category. This is because these were the only foreign films for which production and marketing cost information were available. One of the principal contributions of the article is in its use of improved measures for director power, star power, and competition. Star power is measured by the sum of audience attraction power of the two main stars that appear in a movie. The audience attraction power of each star is measured by the average number of viewers for the three most recent films in which the star appeared as a main character. Similarly, director power is measured by the average number of viewers of the three most recent films directed by the director. Competition is measured by the percent of screens

occupied by the top five competing movies at the time of release of a movie.

Our empirical results revealed that herding behavior among consumers is observed only for Korean films, and not for foreign films. Additionally, scale, evaluation, and competition factors were determined to affect Korean and foreign films differently. After a brief review of the relevant literature regarding movie performances and herding, we describe the database and develop three stage models that incorporate the herding effect. We then present our empirical results and conclude the article by discussing the implications of our results.

II. Literature

Marketing scholars have shown a substantial amount of interest in analyzing marketing in the movie industry over the past two decades. The availability of rich data enables a "cradle-to-grave" scope of empirical studies (Eliashberg, Elberse, and Leenders 2006). A stream of studies identified the relevant determinants for the performance of new films. The other stream developed and analyzed models to help marketers in the movie industry predict movie performance or to make managerial decisions.

Litman (1983) categorized the determinants of movie performance into movie attributes, movie release attributes, and external attributes. Movie attributes include star, director, symbolicity, genre, and production cost. Movie release attributes include the number of screens, timing of release, time gap between the release in the country and that in the country in which the movie was produced, whether or not the movie is distributed by a major distributor, and advertising expenditures. External factors include critic ratings, viewer evaluations, nominations for movie awards, the first week's performance, MPAA rating, and the performance record in the country in which the movie was produced. In our study, in addition to the determinants identified by Litman (1983), we considered whether the movie is produced by a major producer or not which may be categorized as a movie attribute, whether the movie is directly distributed by a distributor of the country the movie is produced which may be a release attribute, and number of screens occupied by major competitors which may be an external attribute as potential determinants.

Studies of movie performance have generally held that star power (Kindem 1982; Litman and Kohl 1989; Prag and Casavant 1994), director power (Litman 1983; Litman and Kohl 1989), symbolicity (Hennig-Thurau, Houston and Walsh 2003; Prag and Casavant 1994; Sawhney and Eliashberg 1996), genre (Austin 1984), production cost (Litman 1983; Prag and Casavant 1994), advertising (Prag and Casavant 1994), distribution by a major distributor (Litman and Kohl 1989; Neelamegham and

Chintagunta 1999), number of screens on which the film plays (Jedidi, Krider and Weinberg 1998), release timing (Litman 1983, Sochay 1994), critic rating (Eliashberg and Shugan 1997), viewer evaluation (Hennig-Thurau *et al.* 2003), and MPAA rating (Litman 1983; Sochay 1994) of a film are significant factors. When the performances of films produced in foreign countries were investigated, the performance record in the country in which the movie was produced (Neelamegham and Chintagunta 1999), record of being nominated for or receiving awards (Litman 1983; Hennig-Thurau *et al.* 2003), and the time gap between release in the country and that in the country in which the movie was produced (Elberse and Eliashberg 2003) were also found in some empirical studies to be significant. Similarly, empirical studies of films released in the Korean movie market have shown that director power, star power, the number of screens on which the film played, record of receiving awards (Kim 1997, 1999), genre, symbolicity, release timing (Choi 1999), MPAA rating (Yoo 2002), advertising expenditures (Pyo 2004), and critics' ratings (Lee 2005) were significant determinants of movie performance. Lee (2005) also asserted that there were differences between domestic and foreign movies released in Korea in terms of the effects of critics' ratings on performance.

The second stream of studies developed models targeted primarily to marketers who need to make important decisions in the movie industry. Eliashberg and Sawhney (1994) presented a model to explain individual differences in the enjoyment of the movie viewing experience. Sawhney and Eliashberg (1996) and Eliashberg *et al.* (2000) developed models to forecast the performance of newly released films. While Krider and Weinberg (1998) presented a model to determine the optimal timing of the release of a new film, Swami, Eliashberg and Weinberg (1999) developed a model for theater managers to determine the replacement timing for a new film. Elberse and Eliashberg (2003) modeled the interactions between viewers in film-exporting and film-importing countries. That study revealed that the performance of a foreign film in the exporting country affects its performance in the importing country. In a study of Korean markets, Ahn and Kim (2003) modeled the consumer adoption of newly released films. Chung and Kim (2004) also modeled the word-of-mouth effects of new films.

Previous studies of movie performance and decision models have identified critical potential predictor variables to be considered in the performance models. We categorized these variables into three groups: variables related to scale factor, those related to evaluation factor, and covariates. Additionally, we added competition factors and herding to the predictor variables.

One important focus of our study is to evaluate whether herding is observed in the Korean movie market. Herding behavior is defined as the tendency of people to do what others are

doing (Banerjee 1992). Herding behavior has probably been studied most intensively in the field of finance. Bikhchandanni and Sharma (2000) previously defined herding behavior as an obvious intent by investors to copy the behavior of other investors. Empirical studies have noted herding behavior occurring among fund managers (Lakonishok, Shleifer and Vishny 1992; Werner 1999; Fong *et al.* 2004). They demonstrated that fund managers intentionally imitated the actions of competitors or other fund managers. Similarly, herding was noted to occur among financial analysts (Trueman 1994; Clement and Tse 2005).

Herding has been observed in other contexts, as well. It is detected in the context of technology choices (Brekke and Rege 2003), auctions (Dholakia and Soltysinski 2001) and online shopping (Hanson and Putler 1996; Teraji 2003; Huang and Chen 2006). In the online shopping context, Hanson and Putler (1996) experimentally demonstrated that consumers use the relative popularity of products as an indicator of both the quality and appropriateness of products when they make decisions. Huang and Chen (2006) demonstrated specifically that consumers use others' choices and evaluations as cues for their own decision-making processes on the Internet.

Although no study has yet adequately assessed herding behavior in the Korean movie market, we speculate that Korean consumers are highly likely to exhibit herding behavior in

this market. Typically, we find that a handful of films draw exceptionally large numbers of viewers. Korean consumers have great pride in their cultural heritage, artistic performances, and values. They are socially and emotionally involved with movies that reflect their cultural or social values. Among such movies, a momentum for herding may be achieved in cases in which a substantial number of viewers share in common the sentiment that a given film is one that every Korean should see. Active use of Internet services among movie consumers may influence the herding effect by accelerating the diffusion of movie information and by enhancing the effect of their word-of-mouth interactions.

Ⅲ. Measurement and Data

Our data sample set included films released from May 1, 2004 to August 31, 2005. 119 Korean films and 220 foreign films were released during this period, according to the data provided by the Integrated Ticketing System operated by the Korean Film Council. When we excluded films with missing data, the sample was reduced to 79 Korean and 126 films produced in the United States or in the United Kingdom. Lack of availability of production cost data was the principal reason for eliminating cases. Additionally, we eliminated

the films shown on less than 30 screens in order to include only the films released in all the main local areas in the Korean movie market. The final database included 73 Korean and 101 US/UK films for further analysis.

〈Table 1〉 presents the variables in the database. It shows the sources of the data and how they are measured. The data regarding the total number of viewers, the number of viewers during the first week, and the number of screens were procured from the Integrated Ticketing System. Approximately 47% of theaters in Korea joined to report their box office performance to the Integrated Ticketing System during the data collection period. Among the variables, star power, director power, and competition need further explanation regarding their measurements. Previous studies have typically employed dummy variables to represent star and director power based on their previous records of receiving awards. This study conceptualizes star power as the star's power to attract viewers. To operationalize this power of attraction, we calculated the average number of viewers drawn to three previous films released in Korea in which the star played a major role. Then, to derive the star power of a film, we summed the attraction power of the two main stars appearing in the film. Similarly, director power is conceptualized as the director's power to attract viewers. It was operationalized as the average number of viewers drawn for three previous films directed by the same director.

Competition is conceptualized as the attraction power of viewers by the competitors. It is operationalized as the percentage of screens occupied by the five top competing films at the time at which the film is released.

〈Table 2〉 compares the descriptive statistics of Korean films and US/UK films included in the dataset. The table demonstrates that Korean films drew 1.31 million viewers on average, as compared to .71 million for the US/UK films. Korean films drew more viewers in the first week, averaging .41 million, as compared to the .27 million recorded for the US/UK films. Additionally, the Korean films occupied more screens (178 vs. 140screens) on average and drew more viewers per screen (6,406 vs. 3,850 viewers) than the US/UK films.

Korean films are produced with much lower budgets, 3.07 million dollars on average, as compared to the US/UK films released in Korea (62.85 million dollars, average). Their director power is stronger than that of US/UK films (.48 vs. .07 million viewers). The same is true of star power (1.62 vs. .27 million viewers). On average, the Korean films get lower viewer evaluations (6.4 vs. 6.9) and critic ratings (2.7 vs. 2.8) than US/UK films. With regard to the genre of the films, 46.5% of the US/UK films shown in Korea are action films. On the other hand, 41.1% of Korean films are comedy films and only 13.7% are action films. More than half of the US/UK films (56.4%) are distributed directly. They are also more likely to be

<div align="center">〈Table 1〉 Description of Variables, Measurements and Data Sources</div>

Variables	Description	Source
Genre	Separate dummy variables for action (ACTION), horror (HORROR), drama (DRAMA), romance (ROMANCE), comedy (COMEDY), animation (ANIM), and scientific fictions (SF). (Ahn and Kim 2003)	Classifications as shown at Movist.com
Production & Marketing Cost(PMEXP)	Reported production and marketing costs. (Litman 1983)	IMDB.com (foreign films) and Korean movie magazine Premiere (Korean films)
Star Power (STARP)	Sum of attraction powers of two main stars appeared in the movie poster. Attraction power is operationalized as average number of viewers of the star's three most recent films.	Korean Film Council (kofic.or.kr) Korean Film Industry Statistics
Director Power (DIRECTORP)	Average number of viewers of the director's three most recent films.	Korean Film Council(kofic.or.kr) Korean Film Industry Statistics
Released Seasons	SUMMER: One for films released in July and August. WINTER: One for films released in December and January. (Kim 1997)	Korean Film Council (kofic.or.kr)
Total Number of Screens (NSCREEN)	Number of opening week screens. (Ahn and Kim 2003)	Kobis.or.kr
MPAA Rating (AGE15)	Classification followed the kofic rating system. One for films allowed to viewers of age 15 or more. (Litman 1983)	Korean Film Council (kofic.or.kr)
Critic Rating (CRITICR)	Average of 5 reviews appeared in the movie magazine Cine21. Critics rated films on a 5-point scale.(Ahn and Kim 2003)	Cine21.co.kr
Evaluation by Viewers (VIEWERE)	Weighted average of up to 100 viewer ratings appeared in Movist.com, Naver Movie, nKino and Cine21. Viewers evaluated films on a 10-point scale. (Ahn and Kim 2003)	Movist.com, Naver Movie(movie.naver.com), nKino.co.kr, and Cine21.co.kr
Symbolicity (SYMBOL)	One if a film is a sequel or based on an original novel. (Sawhney and Eliashberg 1996)	IMDB.com (foreign films) and Movist.com (Korean films)
Major Producer (MAJORPD)	One if a film was produced by a major producer. Major producer is operationalized as a producer who produced 5 or more Korean films or 10 or more foreign films from 1999 to 2003. (Neelamegham and Chintagunta 1999)	Korean Film Council(kofic.or.kr) Korean Film Industry Statistics
Major Distributor (MAJORDT)	One if a film was distributed by a major distributor. Major distributor is operationalized as a distributor who distributed 5 or more Korean films or 10 or more foreign films from 1999 to 2003. (Neelamegham and Chintagunta 1999)	Korean Film Council(kofic.or.kr) Korean Film Industry Statistics
Competition for screen occupation during the first week (COMPSCREEN)	Percent of screens for top 5 competing films when a film is released.	Korean Film Council(kofic.or.kr) Box Office
First Week Number of Viewers (NVWEEK1)	Number of viewers during the first week of release. (Elberse and Eliashberg 2003)	Kobis.or.kr
Total Number of Viewers (NVTOTAL)	The total number of viewers.	Korean Film Council(kofic.or.kr) Box Office
Foreign market performance (FWEEK1)	Revenues during the first week of release in the produced country for a foreign film. (Neelamegham and Chintagunta 1999)	IMDB.com
Foreign market viewers' rating (FVIEWERE)	Evaluation of viewers in the produced country for a foreign film as reported in the IMDB.	IMDB.com
Nomination and Awards (FNOMIN)	Assigned 50 points for Best Picture, 25 points for Best Actor, Best Actress and Best Director, and 10 points for each remaining award category. Because more than one film is nominated for each category, the points were divided by the number of competitors. (Hennig-Thurau et al. 2003)	IMDB.com
Time gap between Releases (TIMEGAP)	The number of days between the release in the produced country and in Korea for a foreign film. (Elberse and Eliashberg 2003)	IMDB.com, Movie.daum.net, Kobis.or.kr, and IMDB.com
Direct Distribution (DIRECTD)	One if a film is distributed directly by a foreign distributor.	Korean Film Council(kofic.or.kr) Korean Film Industry Statistics

<Table 2> Basic Statistics for Korean and U.S./U.K. Films in the Database

Variables	Mean of 73 Korean Films	Mean of 101 US/UK Films
Total Number of Viewers (million)	1.31	0.71
First Week Number of Viewers (million)	0.41	0.27
Production & Marketing Cost ($ million)	3.07	62.85
Number of Screens	178	140
Total Viewers per Screen	6,406	3,850
Total Viewers/First Week Viewers	2.92	2.34
Director Power (million viewers)	0.48	0.07
Star Power (million viewers)	1.62	0.27
Viewer ratings in Korea	6.4	6.9
Critic ratings in Korea	2.7	2.8
Percent of Screens of Top 5 Competitors	74.1	74.4
First Week Viewers in US/UK (million)	NA[1]	25.78
Viewer Ratings in US/UK	NA	6.4
Time Gap between Releases (days)	NA	119
Nomination Scores	NA	1.54
Genre [count (%)]		
Action	10 (13.7)	47 (46.5)
Animation	0 (0)	6 (5.9)
Horror	14 (19.2)	14 (13.9)
Drama	24 (32.9)	36 (35.6)
Comedy	30 (41.1)	29 (28.7)
Romance	12 (16.4)	19 (18.8)
Science Fiction	1 (1.4)	16 (15.8)
Symbolicity [count (%)]	14 (19.2)	41 (40.6)
Distributed by a Major Distributor	63 (86.3)	83 (82.2)
Produced by a Major Producer	30 (41.1)	73 (72.3)
For Age 15 or Older	49 (67.1)	55 (54.5)
Distributed Directly by Foreign Producers	N.A. [1]	57 (56.4)
Released in Summer	26 (35.6)	25 (24.8)
Released in Winter	12 (16.4)	20 (19.8)

[1] NA: Not Applicable

produced by major producers (72.3% vs. 41.1%). On the average, 86.3% of Korean films and 82.2% of US/UK films are distributed by major distributors. Comparing these proportions, more foreign films are released in the winter season (19.8% vs. 16.4%), whereas more Korean films are released in the summer season (35.6% vs. 24.8%). Much more foreign films are sequels or are based on original novels than is the case with Korean domestic films (40.6% vs. 19.2%). For foreign and domestic films both, the top 5 competitors occupied 74% of the screens when they were released. It is interesting to note that the ratio of the total number of viewers over the first week's number of viewers is higher for Korean films than for foreign films (2.92 vs. 2.34). This suggests that herding may affect the performance of Korean films after the first week.
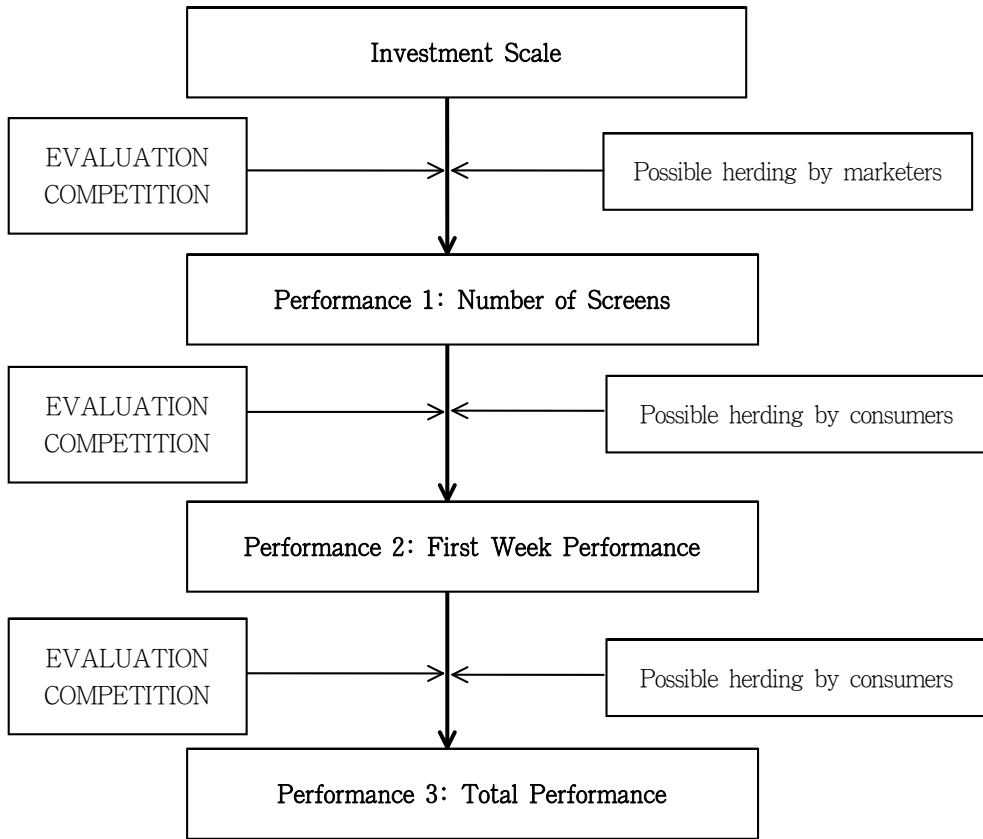
IV. Models

⟨Figure 1⟩ shows the framework of the models utilized herein. The typical movie performance progresses as follows. The investment scale of a movie affects the number of screens on which it is shown (performance 1). The number of screens on which the film is shown (performance 1), in turn, affects the first week's performance or performance 2. The first week's performance (performance 2), in turn,

affects the total performance (performance 3). This process comprises the three stages of a film life cycle-i.e., the decision stage of the number of screens played, first week performance stage, and total performance stage. We refer to the investment-related predictors and the performance in the earlier stages as the scale factor. In each stage, two additional main factors influence the movie performance, i.e., evaluation and competition. Finally, in order to determine whether herding can be observed in each of the stages, we incorporated a herding function into our models. Thus, we categorized the predictors of movie performance into five groups, i.e., scale factor, evaluation factor, competition factor, herding, and covariates. Other predictors unrelated to scale, evaluation, competition, or herding are categorized as covariates. Note that the three stage performances were assessed in the Korean movie market. For foreign films, performance measures in the country in which they were produced were considered covariates, as opposed to performance measures via our framework.

The models of movie performances for the three stages have the same framework, as follows:

$$Performance = a + \beta_s \, Scale \\ + \beta_e \, Evaluation + \beta_c \, Competition \\ + \beta_h \, Herding + \mathbf{Z} \, \mathbf{COVARIATES}.$$

〈Figure 1〉 Framework of the Study

As is shown in 〈Figure 1〉, the performance measure for the first stage is the number of screens on which a film is played (NSCREEN). Theaters make decisions as to the number of screens to be played, based primarily on the scale, evaluation, competition, and other information available at this stage. In the second stage, we utilize the number of viewers during the first week (NVWEEK1) as the performance. In this period, consumers decide to view movies on the basis of the information available to them at this stage. The number of screens played for a movie released is a piece of information that is available to consumers at this stage. In the third stage, the performance measure is the total number of viewers (NVTOTAL). After the first week, the number of viewers during the first week becomes available to movie consumers.

In the equation, **COVARIATES** is a vector of all the covariates and Z is the corresponding coefficient vector. For Korean movies, the covariates include information regarding whether the film is released in the summer (SUMMER), winter (WINTER), or in other periods, whether

or not it is produced by a major producer (MAJORPD), whether or not it is distributed by a major distributor (MAJORDT), and whether it is classified in terms of genre as an action (ACTION), horror (HORROR), drama (DRAMA), romance (ROMANCE), comedy (COMEDY), animation (ANIM), or scientific fiction (SF) film. Also included are the MPAA ratings (AGE15) and the symbolicity (SYMBOL). These are all represented as dummy variables.

For foreign films, the covariates also include the first week's revenue (FWEEK1), viewer evaluation (FVIEWERE), and nomination scores for awards (FNOMIN) in the country in which the movie is produced. However, two additional predictors are included: the time gap between the release in the country of production and in Korea (TIMEGAP), and whether a movie is distributed directly by the distributor of the country in which it was produced (DIRECTD). Among the covariates for foreign movies, DIRECTD is a dummy variable, but the others are not.

We operationalized the herding behavior as an effect deriving from the interaction of the scale factor and the evaluation factor in the movie market. In a study of herding in online customers, Huang and Chen (2006) empirically demonstrated that sales volume and customer reviews are drivers of herding behavior. Specifically, we considered four different functional specifications to represent herding behavior.

Herding model 1 (Simple Interaction Model):
$$Herding = \beta_h \; Scale \; \text{x} \; Evaluation$$

Herding model 2 (Exponential Interaction Model):
$$Herding = \beta_h \; Exp \; (Scale \; \text{x} \; Evaluation)$$

Herding model 3 (Hyperbolic Sine Interaction Model):
$$Herding = \beta_h \; Sinh \; (Scale \; \text{x} \; Evaluation)$$
$$= \beta_h \; (1/2) \; [Exp \; (Scale \; \text{x} \; Evaluation)$$
$$- Exp \; (- \; Scale \; \text{x} \; Evaluation)]$$

Herding model 4 (Asymmetric Hyperbolic Sine Interaction Model):
$$Herding = \beta_{h1} \; Exp \; (Scale \; \text{x} \; Evaluation)$$
$$+ \beta_{h2} \; Exp \; (- \; Scale \; \text{x} \; Evaluation)$$

For the scale and evaluation in the herding models, we used factor scores of the scale factor and the evaluation factor, respectively, and then added 3. Because factor scores have a range of -3 to 3, we make them positive by adding 3. Otherwise, signs of the factor scores make multiplications of the two factor scores invalid for investigating herding effects. By making the scale and evaluation scores positive, the multiplied scores of the two factors can evidence a monotonically increasing pattern.

We applied all four of the herding models in our empirical analysis. However, in this article, we have reported only the results of the application of herding model 2 (exponential interaction model). Herding model 1 is the most

parsimonious model. However, when we applied this model, serious multicollinearity problems arose between the herding and the evaluation factor and between the herding and the scale factor. In assessing multicollinearity, we checked the variance inflation factor. We also applied the two stage process of checking the condition index and inspecting the regression coefficient-decomposition matrix, as suggested by Hair *et al*. (1998).

Herding model 2 reflects the exponentially increasing pattern of the herding effect coming from the interaction of scale and evaluation factors in the movie market. This model is conceptually sound, in that it meets our anticipated herding pattern, which may appear in the movie market. Additionally, it was shown to be free of multicollinearity problems in our empirical applications.

Herding model 3 can show negative and positive herding behavior simultaneously. It can also show patterns of extremely poor performance for movies that are perceived as very poor on both the scale and evaluation factor assessments. This model can be used to evaluate whether movies get exceptionally few viewers when consumers share the feeling that they "should-never-see" them. The hyperbolic sine model has been previously applied for analyses of the pricing effect in marketing (Simon 1979) to incorporate consumers' inelastic responses to relatively minor changes and elastic responses to relatively profound changes in

price. The strength of this model is in its parsimony. With only one additional coefficient to estimate, we can assess both positive and negative herding behavior simultaneously. The weakness of this model is that it shows only the symmetric pattern of positive and negative herding behavior, which is not realistic. In actuality, when we applied this model, the herding coefficient was not significant in any of the performance stages, although no multicollinearity problems were detected.

Herding model 4 extends herding model 3 to show asymmetric patterns of positive and negative herding. Conceptually, it is the most general functional specification that can include herding functions 2 and 3 as special cases. However, we encountered two major problems in our empirical applications of this model. First, we came up with invalid coefficient estimates. Theoretically, this model is valid only when the coefficient of the positive herding term (β_{h1}) is positive and that of the negative herding term (β_{h2}) is negative. There were, however, cases in which β_{h2} was estimated to be positive. Second, the negative herding term was correlated highly with evaluation factor scores, resulting in severe multicollinearity problems in several estimation results. In the remainder of this article, our presentation focuses on our application of the exponential interaction model, i.e., herding model 2.

V. Empirical Analysis

5.1 Identifying Scale, Evaluation, and Competition Factors

For each of the three stages, scale, evaluation, and competition factors were identified via factor analysis of related variables for which information was available at each stage. First, principal component analysis (PCA) was applied to the predictor variables, and three factors were extracted. Then, Varimax rotation was applied to obtain the factor loading matrix. The factor scores were utilized as data for further regression analyses. For the total performance model, factor analysis was applied to the number of viewers in the first week (NVWEEK1), number of screens on which the film was shown (NSCREEN), production and marketing expenditures (PMEXP), director power (DIRECTORP), star power (STARP), critic rating (CRITICR), viewer evaluation (VIEWERE), and percentage of screens occupied by competitors (COMPSCREEN). For the first week's performance model, the same predictors, with the exception of NVWEEK1, is analyzed as NVWEEK1, and is not available at this stage. In the number-of-screens model, NSCREEN and VIEWERE also were not available (in addition to NVWEEK1), leaving PMEXP, DIRECTORP, STARP, CRITICR, and COMPSCREEN as predictor variables to be subjected to factor analysis.

⟨Table 3⟩ summarizes the results of our factor analysis for the three stages. The factor loadings confirmed our *a priori* expectation that the scale factor was correlated highly with the number of screens on which the film was shown (NSCREEN), production and marketing expenditures (PMEXP), star power (STARP), and director power (DIRECTORP) in stage 2. In stage 3, the first week's performance (NVWEEK1) was also correlated highly with this factor, as anticipated. In both stages, the evaluation factor is correlated with the critics' rating (CRITICR) and viewer evaluations (VIEWERE). The table also shows that the factor loadings of production and marketing expenditure (PMEXP), number of screens (NSCREEN), and star power (STARP) were higher for foreign films as compared to domestic films. However, the factor loadings of director power (DIRECTORP) were higher for domestic films. The competition factor is correlated with the percentage of screens occupied by the five main competitors (COMPSCREEN). These results are consistent for both Korean and US/UK movies. The same pattern can be observed in stage 1 for foreign movies.

However, this pattern differs somewhat for Korean movies in the first stage. The production and marketing expenditures (PMEXP) variable is not only correlated with the scale factor, it is also correlated with the evaluation factor. It appears that the amount of production and marketing expenditure (PMEXP) signals not only the investment size, but also

Factors and Variables	SCREEN stage		WEEK1 stage		TOTAL stage	
	Korean Films	Foreign Films	Korean Films	Foreign Films	Korean Films	Foreign Films
SCALE factor	(1.02) [1]	(1.93)	(2.73)	(2.74)	(3.47)	(3.58)
Production & Marketing Expenditure (PMEXP)	.57	.84	.71	.85	.69	.83
Director Power (DIRCTORP)	.87	.64	.71	.57	.67	.52
Star Power (STARP)	.39	.76	.66	.73	.67	.72
Number of Screens (NSCREEN)	N.A. [2]	N.A.	.75	.80	.80	.85
Week 1 Performance (NVWEEK1)	N.A.	N.A.	N.A.	N.A.	.85	.90
EVALUATION factor	(1.67)	(.88)	(1.25)	(1.02)	(1.30)	(1.02)
Critic Ratings (CRITICR)	.84	.99	.87	.80	.86	.81
Viewer Evaluation (VIEWERE)	N.A.	N.A.	.83	.75	.83	.74
Production & Marketing Expenditure (PMEXP) [3]	.51					
Star Power (STARP) [3]	.59					
COMPETITION factor	(.94)	(.95)	(.98)	(.93)	(.98)	(.95)
Percent of Screens for Competitors (COMPSCREEN)	.98	.96	.97	.95	.96	.95

[1] Numbers in parentheses are eigen-values.
[2] N.A. stands for Not Available implying that the information cannot be utilized at the stage.
[3] PMEXP and STARP are correlated to both the Scale and Evaluation factors for Korean movies in the Screen stage.

the quality or evaluation of the movie in the screen decision stage. This tendency can be seen even more prominently for star power (STARP). Unlike in other stages, in the screen decision stage, star power is rather more highly correlated with the evaluation factors than with the scale factors. Star power appears to signal the evaluation rather than the scale of a movie at this stage to those making screen decisions. For consistency's sake, we will discuss the results of the models that utilize these three factors to analyze the performances for all three stages. However, for the screen decision stage, owing to the unexpected results in our factor analyses, we also discuss the regression results that used original predictors rather than scale, evaluation, and competition factors.

5.2 Analysis of the Three Stage Movie Performances

The models were estimated by the OLS regression for each of the three stages using Korean and US/UK movie data separately. In order to be consistent, because we added 3 to the scale and evaluation factors in the herding function, we also added 3 to the scale, evaluation, and competition factors here, rendering them all positive. For foreign movies, the first week performances (FWEEK1), viewer evaluation (FVIEWERE), and number of nominations (FNOMIN) in the country in which they were produced, and the time gap between a movie's release in Korea and its release in the country in which it was produced (TIMEGAP) were all standardized prior to the analysis. These standardizations alleviate effects due to using different measurement units for different variables.

⟨Table 4⟩ summarizes the estimation results. It shows the estimated regression coefficients, standardized beta coefficients, adjusted R^2, and the significance of the predictors. As previously noted, the results do not suffer from serious multicollinearity issues. None of the variance inflation factors exceeded 10. Additionaly, investigation of the condition index and regression coefficient variance-decomposition matrix showed no multicollinearity problems (Hair *et al.* 1998).

⟨Table 4⟩ shows that herding is significant for Korean films in the total performance model, but not in other models. Herding is not significant for foreign films. Thus, herding occurs prominently after the first week for Korean films. Note that we have operationalized herding as an exponential function of the interaction between scale and evaluation factors. A large-scale Korean film in terms of its investment amount, star power, director power, number of showing screens, and/or the first week performance evidences an exponential pattern of herding among consumers when it scores excellent evaluation ratings from viewers and/or critics. Once a blockbuster film getting excellent evaluation ratings shows an exceptional first week's performance, it may be perceived among Koreans as a film that every Korean should see, thus resulting in herding behavior. Such an effect is observed only for Korean films, and is not the case with foreign films.

As anticipated from our framework as presented in ⟨Figure 1⟩, the scale factor is significant for all three stage performances for both the domestic and US/UK films. In general, the estimated beta coefficients demonstrate that it is the most important determinant of movie performances in all the stages for both the domestic and foreign films. When compared to the effects of evaluation and competition, the relative importance of scale on movie performances is greater for foreign films than for domestic films. Additionally, the estimated beta coefficients differ in an interesting way in terms of the effect of scale on movie performances in different stages. Compared to its

	Number of Screens		First Week Performance		Total Performance	
	Korean Films	Foreign Films	Korean Films	Foreign Films	Korean Films	Foreign Films
Constant	24	69	-267	-653	-553	-2299
SCALE factor	37***(.45) [1]	37***(.45)	224***(.76)	238***(.78)	576***(.45)	766***(.83)
EVALUATION factor	38***(.46)	2.9(.04)	87***(.30)	85***(.28)	351***(.28)	333***(.36)
COMPETITION factor	-30***(-.36)	-13**(-.16)	-94***(-.32)	-42***(-.14)	-390***(-.30)	-143***(-.16)
Herding	2(.09)	0(.01)	2(.03)	3(.06)	85***(.36)	-6(-.03)
Covariates						
MAJORDT	16(.07)	33(.16)	-26(-.03)	53(.07)	-109(-.03)	109(.05)
MAJORPD	-12(-.07)	-41*(-.22)	-40(-.07)	-106**(-.16)	-70(-.03)	-284(-.14)
SYMBOL	9(.04)	15(.09)	56(.08)	43(.07)	492**(.15)	-59(-.03)
AGE15	-16(-.09)	-3(-.02)	-25(-.04)	60*(.10)	-219(-.08)	125(.07)
WINTER	5(.02)	-19(-.09)	31(.04)	20(.03)	241(.07)	-134(-.06)
SUMMER	-17(-.10)	-8(-.04)	82(.14)	-25(-.04)	210(.08)	-174(-.08)
ACTION	-3(-.01)	13(.08)	-86(-.10)	18(.03)	12(.00)	137(.08)
HORROR	21(.10)	-9(-.04)	38(.05)	33(.04)	23(.01)	192(.07)
DRAMA	17(.10)	-32*(-.19)	18(.03)	32(.05)	60(.02)	119(.06)
COMEDY	13(.08)	-18(-.10)	62(.10)	-2(-.00)	261(.10)	28(.01)
ROMANCE	17(.08)	28(.13)	67(.08)	34(.04)	25(.01)	192(.08)
SF	10(.02)	26(.11)	-89(-.04)	128***(.15)	-60(-.01)	300*(.12)
ANIM	N.A. [2]	62**(.18)	N.A.	-9(-.01)	N.A.	184(.05)
DIRECTD	N.A.	-13(-.08)	N.A.	16(.03)	N.A.	107(.06)
FWEEK1	N.A.	14(.17)	N.A.	12(.04)	N.A.	40(.04)
FVIEWERE	N.A.	12(.14)	N.A.	-13(-.04)	N.A.	-107(-.12)
FNOMIN	N.A.	-2(-.03)	N.A.	-26(-.08)	N.A.	-38(-.04)
TIMEGAP	N.A.	-10(-.12)	N.A.	-5(-.02)	N.A.	22(.02)
Adjusted R^2	.59	.61	.73	.82	.74	.76

[1] Standardized Beta scores are in the parentheses.
[2] N.A. stands for Not Available information.
[3] There was no domestic animation film released during the period of analysis.
[4] Units: Thousand for Total and First Week Performance and One for Number of Screen.
* Significant at α=.10. ** Significant at α=.05. *** Significant at α=.01

effects on the number of screen performances, scale is far more critical for the first week and for the total performance of US/UK films released in the Korean movie market. For domestic films, the scale factor is critical for the first week's performance. However, the importance of the scale factor decreases in the total performance model in the case of domestic films. Similarly to US/UK films, the scale factor is less important for the number of screen performances.

The evaluation factor is significant for all three of the performance stages, too, except for the screen decisions of US/UK films. The beta coefficients indicate that the evaluation factor is as important as the scale factor in terms of the screen decisions of domestic films. Unlike movie viewers, screen managers may consider the evaluation information to be as important as the scale information for domestic films. The competition factor is also significant for all three performance stages. However, the beta coefficients demonstrate that competition affects Korean films more sensitively than US/UK films.

In regard to the number of screens, whereas all three factors-scale, evaluation, and competition-affect the performance of domestic films, only the scale and competition factors affect the performance of foreign films. Scale is particularly important for the screen performance of US/UK films. Screen managers tend to be very generous in allocating screens to block-buster foreign movies. This is in contrast with the case of Korean films, for which screen managers consider evaluation equally important as scale in terms of screen allocation decisions. This interpretation should be accepted with some caution. In the case of Korean films, the evaluation factors were found to be correlated strongly not only with critic ratings but also with star power and production and marketing expenditures. Later in this work, we will discuss the result of a regression that used original predictors rather than the factors to analyze screen performance. In the case of foreign films, coefficients of MAJORPD, DRAMA, and ANIM are significant for screen perfo- rmance, also. More screens tend to be allocated to animation films. Also, fewer screens tend to be allocated to films in the drama genre, and to those produced by major producers.

In the case of the first week's performance, all the estimates of the scale, evaluation, and competition factors are significant for both domestic and foreign films. Among them, the scale factors are the most important for both the Korean and US/UK films. This is to be expected, as the scale factors at this stage include the number of screens. For Korean films, unlike in the screen decision stage, star power and production and marketing expenditure are correlated only with the scale factors, and not the evaluation factors. At this stage, consumers have more direct and reliable sources of information by which they can eva-

luate movies. They now have access directly to the assessments of actual movie viewers. However, the scale factors still play a much more important role in consumer choices than the evaluation factors. The first week's performance model for foreign films demonstrates that estimates of MAJORPD and SF are significant. This implies that, for foreign films, consumers tend to respond favorably to science fiction films and negatively to films produced by major producers during the first week of the movie release.

Estimation of the third performance stage model shows that total performance is quite sensitive to the scale factors for foreign films. Thus, consumers consistently favor blockbuster foreign films over the film life cycle. For Korean films, the scale factor is less important for total performances than for foreign films. Rather, Korean films are affected significantly by the herding behavior of consumers. Also, in the case of Korean films, symbolicity has a positive influence on total performance. In the case of foreign films, science fiction films are related positively to the total performance.

5.3 Analysis of Number of Screens Model using the original variables

In the case of Korean films, factor analysis yielded an unexpected result in the screen performance stage. Star power was more correlated with the evaluation factors than the scale factors. Additionally, production and marketing expenditures were correlated both with the scale and evaluation factors. Here, we present the empirical results of estimating the screen performance model for Korean and foreign films, which utilizes original variables rather than the factors. In this analysis, in an attempt to mitigate the effects of using different units of measurements, we used z-scores of PMEXP, DIRECTORP, STARP, CRITICR, and COMPSCREEN. Also, for the herding model, we applied the exponential interaction model to the interaction of PMEXP and CRITICR, which represent the scale and evaluation factors, respectively, at this stage. ⟨Table 5⟩ shows the regression results.

The table shows similar results to those factor model analyses, shown in ⟨Table 4⟩. Whereas the production and marketing expenditure (PMEXP), director power (DIRECTORP), and star power (STARP) variables are all significant for Korean films in determining the number of screens, only the production and marketing expenditure (PMEXP) and star power (STARP) are significant for foreign films. Additionally, the critics' rating (CRITICR) variable is significant for Korean films, but not for foreign films. The decision regarding number of screens is more sensitive to competition (COMPSCREEN) in the case of Korean films than in the case of US/UK films. Again, this result implies that screens are more generously allocated to blockbuster movies in the case of US/UK films.

<Table 5> Regression Result of the Screen Model When Original Variables are Used

	Korean Films	Foreign Films
Constant	-30.7	32.0
PMEXP	23.3** (.28) [1]	32.6*** (.39)
DIRECTORP	21.1*** (.25)	4.8 (.06)
STARP	26.4*** (.32)	17.7*** (.21)
CRITICR	14.6* (.18)	-.2 (-.00)
COMPSCREEN	-23.0*** (-.28)	-12.2** (-.15)
HERDING	1.15 (.13)	-1.8 (-.11)
MAJORDT	17.5 (.07)	29.3 (.14)
MAJORPD	-13.1 (-.08)	-42.4** (-.23)
SYMBOL	8.3 (.04)	18.0 (.11)
AGE15	-14.3 (-.08)	-4.6 (-.03)
WINTER	7.4 (.03)	-23.6 (-.11)
SUMMER	-17.7 (-.10)	-5.2 (-.03)
ACTION	-.3 (-.00)	2.3 (.01)
HORROR	26.0 (.12)	.08 (.00)
DRAMA	20.0 (.11)	-30.5* (-.18)
COMEDY	16.8 (.10)	-15.2 (-.08)
ROMANCE	20.7 (.09)	23.1 (.11)
SF	29.2 (.04)	28.2 (.13)
ANIM	N.A. [2]	55.7* (.16)
DIRECTD	N.A.	-11.46 (-.07)
FWEEK1	N.A.	13.8 (.17)
FVIEWERE	N.A.	14.4* (.17)
FNOMIN	N.A.	-3.4 (-.04)
TIMEGAP	N.A.	-9.4 (-.11)
Adjusted R^2	.58	.63

[1] Standardized Beta scores are in the parentheses.
[2] N.A. stands for Not Available information.
* Significant at α=.10. ** Significant at α=.05. *** Significant at α=.01

Furthermore, blockbuster movies are typically identified by the production and marketing expenditures (PMEXP) and the star power (STARP) of the films. Consistent with the results shown in Table 4, fewer screens tend to be allocated to foreign films produced by a major producer (MAJORPD). Additionally, fewer screens are allocated to foreign drama

films (DRAMA). A greater number of screens are allocated to animation films (ANIM). Unlike in ⟨Table 4⟩, the analysis in ⟨Table 5⟩ demonstrates that favorable evaluations by viewers in the country in which the films were produced (FVIEWERE) have positive effects in terms of a movie being shown on more screens.

Ⅵ. Discussion

We reported an empirical study of movie performances in which we analyzed a database containing 73 Korean films and 101 US/UK films released in the Korean movie market between May 2004 and August 2005. The database includes ratio-scaled data regarding star power, director power, and competition. Star power and director power were measured by viewer attraction power. Competition was measured by the percentage of screens occupied by the top five competing movies at the time of a movie release. We applied three stage models that assumed that scale, evaluation, and competition are the primary determinants of the screen performance, the first week's performance, and the total performance. Additionally, the models incorporated herding as an exponential function of the interaction between scale and evaluation.

We noted herding behavior in the total performance model for Korean films but not for foreign movies. We propose three conjectures for this finding. We can conjecture that the patriotism of Korean consumers may moderate herding behavior in the Korean movie market. This patriotism may, in turn, be related to the pride Korean consumers have in their cultural heritage and social values. If this is the case, herding will be observed primarily for Korean films that reflect or affirm their cultural heritage or social values. The second conjecture is that it is easier for Korean consumers to participate in herding behavior in viewing Korean films than foreign films. The details of Korean films can be more readily grasped and appreciated by Korean consumers than details of foreign movies, largely as a function of the language used. Korean consumers are also more familiar with the content, stars, and directors of domestic movies. Furthermore, owing to consumers' familiarity with the language used and the people involved, there may be more potential viewers for Korean films than foreign films overall in the Korean movie market. Thus, there may simply be more people who are able and willing to participate in herding. The third conjecture is that the diversity of Korean movies moderates herding behavior. Typically, blockbuster foreign films are in the action genre. On the other hand, excellent Korean films are produced in many different genres. Actually, 46.5% of foreign films included in our database are in the action

genre, but only 13.7% of Korean films are in this genre. A well-made film in a different genre from recent hit films may have an advantage in garnering extraordinary support from Korean movie consumers.

Herding behavior may or may not be related to the network externality effect. Network externality arises in cases in which the consumer utility of using a product or service increases with the number of users of that product or service (Chun and Hahn 2007, 2008; Farrell and Saloner 1985; Katz and Shapiro 1985). The most popular and very compelling example is that of a telephone network. The more people own telephones, the more valuable the telephone becomes to each owner. Network externality may arise for a movie if the utility of the movie is dependent on the number of viewers. For example, viewing a popular movie may increase the perceived utility of a consumer, by allowing that consumer to enjoy enhanced social relationships with others. As the number of viewers increases, the perceived utility of watching that movie also increases. However, if a consumer simply gets a quality signal from the popularity of a movie, herding may not be related to the network externality. In this case, the number of viewers may not affect the perceived utility of the movie. Further studies should be conducted in the future in order to determine the actual drivers of the herding behavior observed in association with Korean films.

The three factors, i.e., scale, evaluation, and competition, affected movie performance differently for Korean and foreign films. Scale was shown to be the most important factor for both Korean and foreign movies for all three stage performances. However, as compared to foreign films, scale was generally less important for domestic films. For foreign films, scale was a particularly important factor in the first week and total performance stages. Scale factors were identified as the most critical determinant of the success of a foreign film. The same does not hold true for Korean films. The scale is critical for the first week's performance, but not for other performance stages. In selecting a domestic film to view, consumers rely not only on the scale information but also on the evaluation and competition information, and this is especially true after the first week. As they gain access to more and better evaluation information from other viewers in the later stages of a movie's life cycle, they may rely less on scale information. Consistent with this finding, Korean marketers are increasing their efforts to utilize the evaluation of film previews in making marketing decisions, as can be gleaned from the recent success of the movies "Speed Scandal" and "Takeoff (National Team)." Even though these films were not considered blockbusters, the implementation of proactive marketing strategies with a long-term perspective after obtaining excellent preview evaluations enabled them to be highly

successful in the end.

While evaluation factors affect the performance of domestic films more strongly at the screen choice stage, they affect the performance of foreign films more strongly in the later stages of the life cycle. After a film is released, evaluation information is found to be important for consumers with regard to both Korean and foreign films. However, the evaluation information is all the more important for screen managers, who must make decisions as to how many screens are allocated for Korean films. Apparently, theater managers have a more balanced view between the scale and the critic ratings of a film when determining the number of screens. The same is not true of foreign films. In case of foreign films, blockbuster films have the clear advantage in getting screens. At this stage, the effects of evaluation are insignificant. As many of the imported films are tested in the country in which they are produced, screen managers may have less need to consider evaluation factors at the screen decision stage.

Competition is also important for all the movie performance stages. Compared to foreign films, however, the performance of domestic films is more sensitive to competition factors. One conjecture regarding this result is that Korean consumers may apply a two-stage process when they select a film to view. First, they decide whether they will view a Korean or a foreign film. When they select a Korean

film category in the first stage, they may only consider Korean films in the next stage. Similarly, if they choose a foreign film category in the first stage, they may choose only among foreign films in the second stage. If this is the case, consumers are likely to have a greater number of alternatives in their consideration sets when they consider watching Korean films. Typically, there are more talked-about Korean films than foreign films at any given time in the Korean movie market. It may prove to be of benefit for marketers of relatively small scaled films to avoid summer or winter when choosing a release time for their films. Additionally, they may need to improve their positioning in order to reduce the number of competing films in the consumers' consideration sets.

Further investigations into this subject could take any number of directions. Herding is an intriguing topic, particularly as it relates to the Korean movie market. Kang (2006) has even claimed that herding is one of the basic characteristics of the Korean people. Korean people readily participate in the dissemination of popular topics throughout the society. Typically, information regarding films is among the hot topics promulgated within the Korean community. Many movie viewers, in general, are highly emotionally involved with movies they favor. Additionally, most Korean homes are now wired for broadband Internet access. Information about movies can be communicated

quickly and easily over the Internet. Thus, it should prove quite interesting to academically investigate the determinants and outcomes of such herding behaviors in the Korean movie market. For example, we conjectured that the patriotism of Korean consumers, the ease with which herding arises in relation to Korean films, and the diversity of Korean films may all have been moderating factors in the herding behavior of Korean consumers with regard to domestic films. Further study into mathematically-specified herding models will also be necessary to ensure the success of future empirical studies. In this work, we attempted four different specifications, but ultimately discarded three of them—this was largely due to multicollinearity problems.

Another interesting direction for future studies would be to focus on explaining why there are differential effects of scale, evaluation, and competition factors on the performances of Korean and foreign films at different performance stages. For example, for a typical Korean blockbuster film, a well-planned marketing campaign is implemented for a long time, both prior to and after the release of the film. On the other hand, marketing campaigns for foreign films are typically executed for significantly shorter time periods. The differences in the length and depth of marketing campaigns may also affect the differential effects on performances. Additionally, Korean films released in the Korean market are far more diverse than the set of foreign films that make their way to Korea. In the future, it would be interesting to address the issue of whether or not this greater diversity of Korean films affects the differential effects on performances observed in this study.

Finally, there is a clear need for better operationalization of key determinants of film performance. For example, we utilized improved measurements for star power and director power. Unlike previous studies that employed nominal scales, we used ratio scales for the important determinants. However, we also made the arbitrary decision to use average viewers of three recent films to acquire the ratio scales. More creative definitions of these variables would be expected to ameliorate measurement errors, leading to more accurate empirical results.

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한국 시장에서 상영한 한국영화와 외국영화의
3단계 성과와 군집행동(Herding behavior)현상의 분석

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요 약

본 연구에서는 영화 수명 주기 상의 세 단계(개봉 당시 스크린 수, 첫 주 관객수, 전체 관객 수) 모형을 바탕으로 한국시장에서 영화의 흥행성과를 비교 분석하였다. 제작비 같은 규모(scale) 요인, 관객 평가, 전문가 비평 같은 평가(evaluation) 요인, 상영 당시의 경쟁(competition) 요인, 그리고 군집행동(herding behavior)이 각 단계에서 어떻게 다른 영향을 미치는 지 알아보았다. 또한 한국 시장에서 상영된 한국영화와 외국영화를 따로 분석함으로써 이러한 영향들이 이 두 그룹의 영화의 흥행에 어떤 차이를 보이는지를 분석하였다. 본 연구에서 군집행동(herding behavior) 현상은 국내 영화의 전체 관객 수 결정 단계에서만 유의한 것으로 나타났다. 이는 평가가 좋고 첫 주 흥행성적이 좋은 국내 영화의 경우 개봉 일주일 이후에 관객들이 현저히 늘어나는 경향이 있음을 의미한다. 각 단계에서 국내 영화와 외국 영화 간 영향요인들의 영향력 차이를 분석한 결과 규모요인은 모든 단계 모든 영화의 성과에 중요한 역할을 하지만 특히 외국영화의 첫 주 성과와 전체 성과에 결정적인 영향을 주는 것으로 나타났다. 마찬가지로 한국영화의 첫 주 성과에는 규모요인이 결정적 역할을 하였다. 경쟁요인은 모든 단계에서 외국영화보다는 국내영화에 더 중요한 영향을 미치는 것으로 나타났다. 평가요인도 한국영화의 경우 모든 단계에서 영향력이 유의했지만 특히 스크린 결정에 중요한 영향을 미치는 것으로 나타났다. 외국영화의 경우, 스크린 결정에는 평가요인의 영향이 유의하지 않았으나 전체 성과를 예측하는 데에는 중요한 역할을 하는 것으로 나타났다. 이 외에 스토리 배경 (속편여부/원작유무), 장르, 제작사 등 다른 변수들의 영향력 또한 분석되었다.

핵심개념: 한국 영화시장의 성과, 군집행동, 3 단계 성과모형, 규모요인, 평가요인, 경쟁요인

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