



UNIVERSITY OF
CAMBRIDGE
Judge Business School



Working Paper Series

1/2013

*Cultural Agenda Setting and the Role of Critics:
An Empirical Examination in the Market for Art-house Films*

P.C. Symeou, P. Bantimaroudis and S.C. Zyglidopoulos

Cambridge Judge Business School Working Papers

These papers are produced by Cambridge Judge Business School, University of Cambridge. They are circulated for discussion purposes only. Their contents should be considered preliminary and are not to be quoted without the authors' permission.

Cambridge Judge Business School author contact details are as follows:

Stelios Zyglidopoulos
Cambridge Judge Business School
University of Cambridge
s.zyglidopoulos@jbs.cam.ac.uk

Please address enquiries about the series to:

Research Manager
Cambridge Judge Business School
Trumpington Street
Cambridge CB2 1AG
UK

Tel: 01223 760546
Fax: 01223 339701
Email: research-support@jbs.cam.ac.uk

**Cultural Agenda Setting and the Role of Critics: an Empirical
Examination in the Market for Art-house Films**

Pavlos C. Symeou
Faculty of Management and Economics
Cyprus University of Technology
Limassol, Cyprus
Tel.: 357-25-002185
Email: pavlos.symeou@cut.ac.cy

Philemon Bantimaroudis
Dept. of Cultural Technology and Communication
University of the Aegean
P.O. Box 108
Mytilene, Greece
T.K. 81100
Tel.: 30-22510-36620
Fax: 30-22510-36609
Email: pbantima@ct.aegean.gr

Stelios C. Zyglidopoulos
Judge Business School
University of Cambridge
Trumpington Street
Cambridge, CB 2 1AG, UK
Tel.: 44(0) 1223-760589

**Cultural Agenda Setting and the Role of Critics: an Empirical
Examination in the Market for Art-house Films**

ABSTRACT

In this project, we investigate and expand agenda-setting theory in the context of the market for art-house films. First, we test first- and second-level agenda setting hypotheses, according to which higher media visibility and favorable media valence of a particular film are expected to have positive effects on public salience. Second, we expand agenda setting theory by adding critical valence as an important influencer of public salience within cultural contexts. Our findings suggest that while higher media visibility, favorable media valence and critical valence have positive effects on public salience, they are also independent of one another in carrying salience over to the public.

Keywords: Cultural Agenda Setting Theory, Media visibility, Media valence, Critical valence, Movie industry

Cultural Agenda Setting and the Role of Critics: an Empirical Examination in the Market for Art-house Films

Agenda setting theory, introduced by McCombs and Shaw (1972) in their seminal Chapel Hill study, is without doubt one of the most important theories to emerge in the field of mass communication within the last forty years (Bryant & Miron, 2004; Strömbäck & Kioussis, 2010). First-level agenda setting theory states that the media is successful in transferring salience regarding a particular ‘issue’ or ‘object’ to the public; whereas second-level agenda setting theory claims that the media also succeeds in transferring the salience of the attributes associated with these ‘issues’ or ‘objects’ (Ghanem, 1997).

In the first three decades since its inception, researchers applied agenda setting theory to political issues (Funkhouser, 1973; McCombs & Shaw, 1972), the ‘civic arena’ according to McCombs (2004: 53). However, in the last decade, certain ‘centrifugal trends’ (McCombs, 2004) have occurred as some researchers have started to apply agenda setting theory in other areas outside politics. For example, Carroll and McCombs (2003) argued that both first- and second-order agenda setting should be applicable in determining business reputation; whereas Meijer and Kleinnijenhuis (2006) found empirical evidence that both first- and second-level agenda setting theory “are valuable for understanding the effects of issues in business news” (2006: 543). Furthermore, in the context of museums, two recent studies showed that both

first- and second-level agenda setting theory applies in cultural settings, as the media visibility and media valence particular museums received were associated with levels of public salience (Author citations).

In this project we expand this application of agenda setting theory in cultural contexts (cultural agenda setting theory) by investigating first- and second-order agenda setting within the context of the market for art-house films. First, following first- and second-level agenda theory, we hypothesize that films receiving higher media visibility and favorable media valence will have higher levels of public salience. Second, given the importance that critics have within the various markets for cultural products (Basuroy, Chatterjee, & Ravid, 2003; Cameron, 1995; Eliashberg & Shugan, 1997), we expand cultural agenda setting theory by adding critical valence as an important factor positively affecting public salience within cultural contexts.

Cultural Agenda Setting

The main idea behind cultural agenda setting theory is that the transfer of salience by the media to the public also applies to the case of cultural products or, more broadly, cultural objects such as works of art, artists and cultural organizations (Author citation). For the first level of agenda setting, this implies that cultural objects that receive high levels of media visibility or media coverage acquire public salience as the public talks about them. For the second level, cultural agenda setting suggests that the media also influences the attributes of various cultural objects. For example, through media valence,

the positive, neutral or negative tone the media adopts regarding a particular cultural object is then transferred to the public. To understand why we expect agenda setting theory to apply in the case of cultural objects, we must first briefly discuss the theoretical rationale behind agenda setting phenomena in general.

Previous agenda setting research has identified the need for orientation (NFO) as the main reason behind the transfer of salience from the media to the public and in turn, that the NFO depends on the uncertainty and relevance of a particular object. NFO “refers to the tendency of an individual to seek information about an issue in the news media” (Matthes, 2006: 423) and according to McCombs (2004), it constitutes “the most prominent of the contingent conditions for agenda-setting effects” (2004: 67). This position has been confirmed through empirical work by Matthes (2006, 2008). Therefore, the greater the NFO that a particular public has regarding an object, the greater will be the transfer of salience from the media to the public. The NFO, however, is not the “lowest” concept that agenda setting theorists have identified as driving agenda setting phenomena. McCombs (2004: 54) identifies two “lower-order concepts”, uncertainty and relevance, which he sees as determining the public’s NFO. Relevance refers to the perceived importance of a given object or issue (McCombs, 2004; Weaver, 1980), whereas uncertainty refers to the information that one needs about the particular issue (Weaver, 1980).

Agenda setting theory applies to cultural contexts because in dealing with cultural objects, individuals have a high level of NFO, driven both by uncertainty and relevance and also by the experiential nature of cultural products (Duan, Gu, & Whinston, 2008; Moon, Bergey, & Iacobucci, 2010; Yang, Kim, Amblee, & Jeong, 2012). First, uncertainty is inherent in the evaluation of cultural objects. Second, many cultural objects have great relevance for everyday life. Third, particularly within cultural contexts, the experiential nature of cultural products further enhances the NFO by individuals.

First, uncertainty is inherent in both the production and the consumption of cultural products. There is no guarantee that producers of successful cultural products will continue to do so. For example, Mott and Saunders (1986) point out that even famous producers like Steven Spielberg have over the years produced ‘expensive flops’ and Hesmondhalgh (2002) reports that eight out of nine music products fail and that just one out of fifty books reaches wide acceptance. Moreover, the uncertainty about the value of cultural objects is further enhanced by the multiplicity of individual tastes, the varying degrees of refinement of different individuals and the change of these individuals’ taste throughout their lifetime (DiMaggio, 1987). As Holbrook and Schindler (1994) point out, “reliance on creative intuition in the design of cultural offerings remains difficult, expensive, and prone to error” (1994: 412), which makes them highly uncertain and gives their consumers an acute need for guidance.

Second, many cultural objects or goods have great relevance for people's lives. We can see this from the fact that substantial private and public resources are allocated for the production, distribution and consumption of cultural goods. For example, in 2008 alone, Canadian consumers spent \$27 billion on cultural goods (Hill Strategies Research Inc., 2011), whereas in Europe, 77% of the respondents in a recent 27-country survey claimed, "culture was important to them" (Eurostat Pocketbooks, 2011: 143).

Finally, because cultural goods are experience goods, their consumers cannot evaluate them before the actual purchase. Experience goods, according to Nelson (1970, 1974) are goods with attributes that consumers cannot easily verify before their actual purchase. In other words, in the case of cultural goods, consumers cannot evaluate their experience before they have them. According to Siegel and Vitaliano (2007: 780) experience goods, have "a high degree of information asymmetry between sellers and buyers." Particularly in the case of cultural goods, their "multidimensionality" (Holbrook & Schindler, 1994: 412) makes it even harder to reliably evaluate them before the purchase (Mott & Saunders, 1986). It is hard, for example, to know the entertainment value of a new movie or a new theatrical performance before one has actually seen the performance. As Hill, O'Sullivan and O'Sullivan (2003: 155) put it, "potential consumers cannot inspect an artistic performance before purchase in the same way as they might, for example, test-drive a car." We therefore make the following hypotheses:

H1: Media visibility has a positive effect on the public salience of cultural goods.

H2: Favorable media valence has a positive effect on the public salience of cultural goods.

Critical Valence

Critics play an important role within any cultural “system” (Hirsch, 1972) or field (Scott, 1995). As Debenedetti (2006: 30) reports: “their complex links with creators and managers upstream and with the public downstream put critics at the centre of a system of material and symbolic relations that make them key actors in the cultural industries.” Critics, according to Shrum (1991), provide the public with factual, technical and evaluative guidance regarding cultural goods. In other words, they inform the public about the specifics of timing and content of a particular cultural good; they provide the “discursive apparatus” (Becker, 1984) needed to evaluate and appreciate it, and they evaluate its value using this apparatus (Wyatt & Badger, 1990). Critics are able to provide such services to the public for two reasons. First, they are closely connected with the producers of cultural goods, which gives them privileged access to information (Debenedetti, 2006). Second, given their expertise, they are able to position and evaluate a cultural good within its particular genre (Cameron, 1995).

Given the role of critics, it is reasonable that members of the public turn to them for guidance to satisfy their NFO regarding cultural goods.

Several studies have found evidence for the influence that critics have over the reception of a cultural good by the public. For example, in the film industry, the importance of critics in influencing box office performance is beyond dispute and has triggered extensive research (Basuroy, et al., 2003; Eliashberg & Shugan, 1997; Zuckerman & Kim, 2003), even though the nature of this relationship is not completely confirmed (King, 2007). For example, while most studies report a positive relationship between positive critical reviews and box office performance (Litman & Ahn, 1998; Litman & Kohl, 1989; Prag & Casavant, 1994; Sochay, 1994), a few report no relationship at all (Ravid, 1999; Zufryden, 2000), or even a negative relationship (Hirschman & Pieros, 1985). In another cultural setting, the theatre, Shrum (1991) found that positive reviews were associated with greater audience participation.

Thus, from a cultural agenda setting perspective assessing the influence of critics on the public's reception of a cultural good, we can expect critical valence, the positive, neutral or negative tone that critics adopt when they review a particular cultural good, to play an important role in determining its public salience. This leads us to the following hypothesis:

H3: Favorable critical valence has a positive effect on the public salience of cultural goods.

METHOD

Research Setting

Our research setting is the art-house film industry. We situated our study in the art-house film industry for several reasons. First, the uncertainty of the film industry is well documented; a characteristic which would allow us to more readily observe agenda setting phenomena, as uncertainty leads to higher levels of a NFO. For example, De Vany and Walls (1999), after conducting a large scale empirical study of 2000 movies, found that box office revenues follow a Levy distribution exhibiting high skewness, heavy tails, infinite variance and, often, infinite mean. These findings led them to conclude that the producers' prior experience and success cannot safeguard future success or even allow a close estimate of anticipated revenues; and more colorfully that "this explains precisely why no one knows anything in the movie business" (De Vany & Walls, 1999: 315). Second, we chose this research setting because professional film critics have a long tradition in the industry. According to Ravid, Wald, and Basuroy (2006), approximately one third of film viewers not only read film reviews, but also decide which film to watch based on film critics' professional recommendations. The impact of film reviews within the film industry is so important that "in recent years, the desire for good reviews on the part of the studios has even prompted some people to engage in deceptive practices" (Ravid, et al., 2006: 202). Third, we particularly chose the art-house film industry because of its significantly lower advertising budgets, which would make influence from the media and the critics more visible.

Data

We derived our data from the art-house film industry of Greece. Greece has a rich cinematic history (Karalis, 2012), which makes it suitable for our research. The first Greek cine-theater opened in Athens in 1907. In 1944 Katina Paxinou was honored with the “Best Supporting Actress” Academy Award for *For Whom the Bell Tolls*. The 1950s and 1960s are considered as the Greek ‘Golden Age’. Directors and actors of this era gained international acclaim, including Mihalis Cacoyiannis, Alekos Sakellarios, Melina Mercouri, Nikos Koundouros, and Irene Papas. In 1960, Melina Mercouri was nominated for an Academy Award for *Never on Sunday* while the film’s music score, composed by Greek Manos Hatzidakis, received an Oscar in the “Best Music, Original Song” category. In 1964, Cacoyiannis directed *Zorba the Greek* with Anthony Quinn, which received 3 Oscars. During the 1970s and 1980s, Theo Angelopoulos directed a series of notable and well-regarded movies. His film *Eternity and a Day* won the Palme d’Or and the Prize of the Ecumenical Jury at the 1998 Cannes Film Festival. In 2009 *Dogtooth* by Yorgos Lanthimos won the Prix Un Certain Regard at the Cannes Film Festival and in 2011 was nominated for Best Foreign Language Film at the 83rd Academy Awards. Moreover, the Thessaloniki and Athens International Film Festivals established in 1960 and 1995, respectively, have become two of the Balkans’ primary showcases for the work of new and emerging filmmakers.

Our data sample includes all 311 art-house, domestic and international films, which appeared in Greek cinemas, between January 2006 and January

2012. We excluded from the data collection process all blockbuster movies made in the USA¹, which in comparison with films produced outside the USA have substantially bigger production budgets and deploy extensive and prolonged advertising and promotion campaigns that are important influencers of both media visibility and revenue (Gemser, Van Oostrum, & Leenders, 2007). Moreover, substantial differences in budgets and promotion practices between blockbuster US and art-house films are very likely to mask the underlying process of transfer of salience. Therefore, it was paramount that the empirical setting of the current inquiry was not flooded with heavy promotion and advertising expenditure. We collected movie data primarily from *Box Office Mojo* as well as from the IMDB².

Dependent variable

Following previous studies of the effects of media salience on public salience in cultural contexts (Author citations), we measure public salience through a behavioral construct. Whereas the typical measures of public salience in the agenda setting literature have revolved around perceptions, early public opinion research identified behavior as a separate category of audience salience (Hovland, Lumsdaine, & Sheffield, 1949) and several later studies in

¹ We define a movie as a blockbuster if it was a top 10 revenue performer in the USA during the first month of its release. Information about blockbuster movies was extracted from the Internet Movies Database (IMDB).

² *Box Office Mojo* (www.boxofficemojo.com) is an online movie publication and box office reporting service and a subscription-free subsidiary of *IMDB* (www.imdb.com), the #1 movie website in the world with a combined web and mobile audience of more than 150 million unique monthly visitors.

the fields of politics examined behavior as a form of public salience (e.g. McCombs, 2004; Roberts, 1992). We operationalize public salience as the film's weekly box office revenue. The logic behind our measure is that the amount of ticket sales and thus box office revenue signifies object importance because a movie, an experienced cultural good (Neelamegham & Jain, 1999), is less likely to receive verbalized preference by the audience unless it has already been watched.

Independent variables

Media visibility: Following existing practice (Author citation, 2010; Kioussis, 2004), we measure media visibility through the presence of unpaid media mentions in major newspapers. We created an aggregate measure of media visibility through adding the mentions a film received for a given week, in which the film appeared in a cinema, in three major Greek daily newspapers (*Kathimerini*, *Ta Nea*, and *To Vima*). We chose these newspapers because of their easy-to-access digital archive and their extensive readership (more than 26% market share combined³) and distribution throughout Greece. Overall, our search of these three newspaper databases resulted in 898 articles, where at least one of the sample movies was mentioned.

Media valence: To develop our measure of media valence, we drew on prior work by Deephouse (2000) to classify the media tone of an article as

³ Their combined market share remained relatively stable between 2006 and 2011 at 28% and 26%, respectively. Estimates by authors. Data source: Athens Daily Newspaper Publishers Association, http://www.eihea.gr/default_en.htm, last visited 06/02/2013.

‘positive’, ‘negative’, or ‘neutral’. From the population of 898 newspaper articles, 541 were coded as positive, 208 were coded as negative and 150 were coded as neutral⁴. An experienced research assistant, under the supervision of one of the authors, coded all articles. To assess inter-coder reliability of media content, another of the authors recoded newspaper recommendations for 34 movies (approximately 10% of the total movie population). We assessed the reliability for each movie separately, as in some cases, an article discussed more than one movie. The two coders displayed a high level agreement in regards to media valence. The level of agreement was 0.882 based on the Holsti measure (Holsti, 1969) and 0.731 on Scott’s pi measure (Scott, 1955), which also accounts for agreement by chance. We aggregated the coded articles into a weekly measure of media valence using the Janis-Fadner coefficient of imbalance (Janis & Fadner, 1965) that measures the relative proportion of favorable to unfavorable articles while controlling for the overall volume of articles. The variable was calculated as follows:

⁴ Coders were instructed to use the following general guidelines in the classification of articles:

- Positive tone: The article contains positive remarks in regard to the storyline, the book from which the scenario is derived, the cast, the acting, the directing, or other film attribute. There are positive catch-phrases such as “you must see this film.” The article entails any form of prompt to prospective audience to watch based on comparison with related works of known value.
- Negative tone: The article contains negative remarks with regard to the storyline, the book from which the scenario is derived, the cast, the acting, the directing, or other film attribute. The film is considered mediocre, lacking quality or repeats or copycats elements from other films. The article uses catch-phrases such as: “this film is a waste of time and money” or recognizes the sacrifice of quality over commercial purposes.
- Neutral tone: The newspaper article mentions the film without portraying a favorable or an unfavorable recommendation. The article simply reports the place, date, and time of the performances and makes no quality and attribute evaluations.

$$Media\ Valence = \begin{cases} (f^2 - fu) / (total)^2 & \text{if } f > u; \\ 0 & \text{if } f = u; \\ (fu - u^2) / (total)^2 & \text{if } u > f; \end{cases}$$

where f is the number of favorable articles for a film in a given week; u is the number of unfavorable articles for a film in that week; and $total$ is the total number of articles for the film in that week. The range of this variable is $(-1, 1)$, where 1 indicates all positive coverage, -1 indicates all unfavorable coverage, and 0 indicates a balance between the two over the week.

Critical valence: We gathered critics' review data from *Athinorama*⁵, a specialized entertainment publication and the major online movie guide in Greece. According to *Alexa.com*, an online traffic monitoring service, *Athinorama* is the most popular domestic site for movies and cinemas. Professional critics' reviews are available before the movie is released in theaters and their reviews remain unchanged afterwards. Beyond an elaborate review for each movie, the critics at *Athinorama* use a scale ranging from 0 to 5 with half-point intervals to assign a recommendation score, with higher scores being more favorable.

Controls

Given the number of variables that could influence the public salience of a film, we included a number of relevant controls in our models.

⁵ www.athonorama.gr

Star power: Consistent with the motion picture literature (e.g. Elberse, 2007; Smith & Smith, 1986), we included the variables *Cast* and *Director*, which measure the number of major awards and nominations received by cast members or the director of the movie prior or during its appearance in cinemas, respectively. In addition to the Academy Awards, we included in this measurement the three major international film awards of Cannes, Venice and Berlin.

Distributor size: Movie distributors play an important role in the movie industry and movie performance (Gemser, et al., 2007; Zuckerman & Kim, 2003). For example, viewers can associate their level of satisfaction with a particular movie with the movie's distributor, which is likely to influence their future choices. During the period examined, there were 24 active movie distributors in Greece. To account for the effects of distributors' effects on box office revenue we incorporate in the analysis a variable that measures the total number of movies represented by a distributor in a given year.

Budget: Movies with generous production budgets, which translate into lavish sets and costumes, expensive digital manipulations, and special effects along with heavy advertising, achieve box office success (Basuroy & Chatterjee, 2008; Ravid, 1999). We control for these effects on box office by including in our analysis the logarithm of the movie's budget.

Premiere gap: The time gap between a movie's premiere in the country of origin and its premiere in the Greek market may allow the accumulation of higher media attention and the creation of more international awareness than

domestic movies or movies with shorter time gaps. Therefore, we control for the impact of this time gap on box office revenue by including in the analysis a variable that measures the number of days between the international and Greek openings.

Movie trailers: Showcase movie trailers (short previews that act as advertisements for a feature film to be exhibited in the future at a cinema) create awareness, prepare their target audience and receive comments, which often allows movie producers to project movie revenues. Since these movie trailers impact box-office performance, we account for their effect by including a dummy variable (*YouTube*) that indicates whether a movie trailer appeared on YouTube (<http://www.youtube.com>), the most important video-sharing website worldwide, prior to its release or during its performance in Greece.

Screens: Movies that appear in more theater screens are expected to have higher revenues. We therefore control for the number of screens each movie appeared on during the sample period.

Genre: Viewer preferences can develop into a stable and established preference for viewers, such as favorite genres (Moon, et al., 2010). Therefore, genres are likely to attract varying volumes of viewers and therefore influence

movies' revenues differently. We control for the effect of genre on box office revenue by including in the analysis genre dummy variables⁶.

Sequels: A movie sequel is a follow-up work, which continues the story from the point where an earlier movie left off. Sequels carry lower levels of risk, as returning to a story with known popularity is less risky than developing new and untested characters and settings. They also appeal to public audiences, which view the quality of the initial movie as a signal for the quality of a sequel, thus making the production of sequels financially attractive (Moon, et al., 2010). Sequels usually achieve box office success, even if they do not meet the levels attained by the parent movies (Basuroy, et al., 2003). We control for this effect by including in the analysis a dummy variable that denotes whether a film is a sequel or not.

Competition: Other similar cultural goods offered during the same period pose significant challenges to box office revenue by influencing the audience's decision on how to allocate its finite time and money. To control for the effects of competition between alternative movies during the same period, we include in our analysis two variables that measure the number of other art-house films (*Alternative competition*) and the number of US blockbuster films (*Blockbuster competition*) in a given week.

Macro-economic Environment: Since 2010, Greece has been facing a severe economic crisis that undoubtedly has had a strong impact on consumers'

⁶ Our sample data include films in the following genres: action, adventure, animation, biography, comedy, crime, documentary, drama, fantasy, horror, mystery, romance, and thriller.

behavior and possibly preferences. To account for such changes attributed to the macro-economic environment of our industry, we incorporate in our analysis a variable that controls for the average level of prices in the economy, i.e. the consumer price index (*CPI*), a variable that controls for the purchasing power of consumers, i.e. gross domestic product per capita (*GDP per capita*), and a dummy variable that indicates whether the year of the observation is 2010, 2011, or 2012 (*Crisis*), namely the financial crisis period. Macro-economic data were obtained from the World Bank's Indicators database.

Seasonality effects: We expect movies appearing in theaters during holiday periods to enjoy a higher attendance than others. We therefore control for seasonality effects by including in the analysis a variable that denotes the *Christmas* period (from mid-December to mid-January), a variable denoting the *Easter* period (though this is a moving holiday, during our sample period it fell in April), and a variable accounting for the summer period (from July to August).

Analysis

For the analysis of the multitudinal data comprising 311 cross-sections (movies) with an average of 3.6 weeks in theaters and a total of 790 movie-week observations, we used a multiple regression model, with the following form:

$$y_{it} = \alpha_i + \beta_k x_{it} + e_{it} + u_i,$$

where $i = 1, 2, \dots, 311$ is the subscript for the cross-sectional dimension and $t = 1, 2, \dots, n$ is the subscript for the time-series dimension. y_{it} represents box office revenue; α_i is a constant; β is a series of coefficients corresponding to x_{it} series of independent variables; u_i is a $T \times 1$ vector of the effects of omitted time-invariant movie-specific variables; and ε_{it} is a random disturbance variable assumed to be distributed identically and independently with zero mean and finite, constant variance. To use an estimation method that was most appropriate for our data, we consulted the Hausman test (Baltagi, 2005), which suggested the use of the Random Effects transformation ($\chi^2=0.91$). Moreover, as the countries of origin of the sample movies can signify different levels of familiarity of viewers with various cultural products, it was possible that our estimates could be biased due to a country of origin effect. We explicitly accounted for this effect by deploying a clustered estimator in our analysis using the country of origin to cluster the data. This method allowed the derivation of results that are robust to the country of origin effect.

RESULTS

Table 1 reports summary statistics and pairwise correlations between our sample variables. It is noteworthy that the pairwise correlations between media

visibility, media valence and critical valence are quite low, ranging between 0.08 and 0.28, thus lending support to discriminant validity.

- Insert table 1 about here -

The examination of the role of media visibility, media valence and critical valence in the transfer of salience implies that the three mechanisms have precedence over our behavioral operationalization of public salience. In statistical terms, this condition suggests the use of time lags. Because 157 movies in our sample were in theaters for only one week, the use of a one-week lag would consume 311 observations (one observation for each movie) and also drop all single-observation movies from the estimated model. This would give rise to a selection bias that might render the model estimates biased and inefficient (Baum, 2006). To gain deeper insight from our sample, satisfy the prerequisite of precedence for the proper examination of our hypotheses, while accounting for the implications of selection bias, we estimated a first set of models without time lags that involved the complete sample and allowed an initial exploration of the relationships in question. Second, we estimated a second set of models using lags and correcting for the presence of selection bias in the estimates.

The regression outputs are presented in Table 2⁷. The first model presents the output from the regression of box office revenue on the control variables only. The results suggest a positive relationship for movies with an

⁷ For purposes of paper length we only present the unstandardized regression coefficients. The models with standardized coefficients are available from the authors.

online trailer on YouTube, a larger number of screens, when the movie has been in theaters in the Christmas holiday period and during the crisis period, considering all other effects constant. On the other hand, the results suggest a negative relationship for movies that encounter more stringent competition from other art-house movies, belong to the animation genre, and when the CPI is higher. Surprisingly, the movie's budget does not have any statistically significant relationship with box office revenue, suggesting that art-house movies' audiences are not sensitive to prolific sets and costumes, expensive digital technology, and special effects, nor to the heavy advertising attained by bigger production budgets.

The Baseline model incorporates in the analysis the media visibility and media valence variables. Including the two variables contributes to the model's explanatory power, reflected in an increase in the Chi^2 statistic and the R^2 . The relationships of the two variables with the dependent are positive and statistically significant, suggesting that films that receive greater media visibility and more favorable media recommendations are more likely to exhibit better box office performance.

The Extended model also incorporates the variable of critical valence. Incorporation of this variable further improves the explanatory power of the model and maintains the existing relationships qualitatively the same. The relationship between critical valence and box office performance is positive and statistically significant, suggesting that professional reviewers exhibit a separate relationship with public salience in the form of consumer behavior.

- Insert table 2 about here -

Our results suggest that the three concepts of media visibility, media valence and critical valence manifest independent relationships with public salience. It is highly possible that the coexistence of these concepts may reinforce their relationships with public salience. To explore this possibility, we incorporated in the Interactions model the variables' pairwise interactions. Inclusion of these variables did not contribute to the model's power, as the new variables are statistically insignificant. This finding suggests that media visibility, media valence and critical valence are three independent mechanisms that have distinct relationships with public salience.

To test our hypotheses we reestimated the above models with a one-week lag for the main independent variables. The new estimation resulted in the loss of 315 observations and the drop of 157 movies from the models. To account for non-random inclusion effects, i.e. whether the reasons behind the shorter appearance of the excluded movies in theaters also affect the dependent variable in our models, we followed a two-stage Heckman selection estimation process (Heckman, 1979). In the first stage we employed a probit model to estimate the probability that a movie appears both in the complete and the reduced sample. In the second stage, we included in the model the inverse Mills ratio as a correction term that was derived from the first stage's estimated probabilities and represents the selection hazard for participation in both samples for a given movie in a given week. In all three models, the inverse Mills ratio is positive and statistically significant, suggesting that there

is a positive selection effect in the data that would yield biased results if the model were estimated with uncorrected OLS. Namely, movies kept in the analysis exhibit higher public salience than a randomly selected sample of movies with a comparable set of characteristics.

The results for the second set of models do not differ qualitatively from the full-sample results. Therefore, based on the positive relationships we find in the first set of models and the relationships of antecedence we find in the second set of models, we can suggest that media visibility, media valence, and critical valence have positive effects on public salience, therefore supporting all our hypotheses. Moreover, these effects are independent of one another.

DISCUSSION

In this project, we expand the application of agenda setting theory in cultural contexts (cultural agenda setting) by investigating first- and second-order agenda setting within the Greek market for art-house films. Our findings indicate that first- and second-level agenda setting effects apply within this cultural market, as higher media salience (visibility and valence) induces higher public salience. Also, given the importance of art critics for the markets for cultural goods (Cameron, 1995; Debenedetti, 2006; Eliashberg & Shugan, 1997), we expand cultural agenda setting theory by including the concept of critical valence, the positive, neutral or negative opinion of the critics regarding a particular cultural good (a movie in our case), in our models. As hypothesized, we found that critical valence affects public salience.

Our contribution towards the development and expansion of agenda setting theory is twofold. First, we expand the applicability of cultural agenda setting theory by applying and testing it in a new area, the cultural market for art-house films. Second, we expand cultural agenda setting theory through incorporating the notion of critical valence as an influencer of public salience within cultural contexts.

We expand the applicability of cultural agenda setting in two ways. First, given that previous work has applied and tested first- and second-level cultural agenda setting theory in the context of museums (Author citations), our work adds to this line of inquiry by applying and testing agenda setting phenomena within a novel cultural context, the market for art-house films. Second, given that prior work investigated the transfer of salience in the context of cultural organizations (museums), we add to its generalizability by applying agenda setting theory in a different cultural context, the market for cultural goods (Boatwright, Basuroy, & Kamakura, 2007).

We also expand cultural agenda setting theory by introducing critical valence as an important concept influencing public salience. The importance that critics have in cultural contexts is unparalleled and within the agenda setting theory they can play a distinct role in the process of salience transfer to the public. Our empirical examination suggests that critical valence exists along media valence as an independent influence on public salience and does not interact with other types of salience, which is indicative of its distinctive nature. By including and investigating the role of critical valence, we refine

agenda setting theory so that it is more applicable within what we might call the 'cultural arena,' to paraphrase McCombs (2004).

Moreover, within the film industry literature (Eliashberg & Shugan, 1997; Gemser, et al., 2007), our findings contribute as follows. First, we confirm and add to the findings of many researchers within this literature that critics play an important and positive role in box-office performance (Basuroy, et al., 2003; Eliashberg & Shugan, 1997; Zuckerman & Kim, 2003)). Second, our findings indicate that the impact of the critics is independent of the impact of the media. In other words, at least in our research setting, critical valence does not significantly interact with media visibility and media valence. Third, our findings indicate that the financial crisis had a marginal positive relationship with box-office performance, contrary to our expectations. On the first hand, this may indicate that cultural industries might not be particularly vulnerable during severe recessions but on the other hand, this finding may indicate that other macro-economic variables included in the model capture the negative effect on box office performance attributed to the deterioration of economic conditions in Greece. This is not reflected in the statistically insignificant effect of GDP fluctuations but is indicated in the negative effect of CPI increases, which suggest that changes in overall consumer prices may lead consumers to restructure their expenditure. This is manifested in a decrease in movie consumption. Fourth, an interesting finding pertains to the positive relationship between YouTube and box office performance and therefore, public salience. This finding indicates that future research should

investigate in more depth the role of the Internet as a communications channel in influencing box-office performance and that producers of art house films could take advantage of the Internet services to make up for their usually low promotional budgets. Fifth, our finding that a recognized cast with previous awards is correlated to public salience is not surprising. What is rather surprising, however, is that the 'director award' variable did not register as significant. This finding might be interpreted in the context of the art-house segment, as arguably audiences could be willing to give a chance to new directors.

Although our research contributes to the expansion of cultural agenda setting theory, it has a number of limitations that future research should address. First, we applied agenda setting theory in a new kind of cultural object, a cultural good. However, cultural agenda setting theory could also apply in the case of artists or cultural producers, an area we do not investigate in this paper. Future research should investigate cultural agenda setting phenomena in the case of cultural producers such as painters, sculptors and authors. Second, given the potential importance of the Internet, as our finding concerning the importance of YouTube indicates, and the many online blog sites where professional and other viewers can act as critics, further research should investigate the importance of the Internet and new media on the transfer of salience for cultural objects.

References

- Baltagi, H. B. (2005). *Econometric analysis of panel data* (3rd ed.). West Sussex: John Wiley & Sons, Ltd.
- Author Citation
- Basuroy, S., & Chatterjee, S. (2008). Fast and frequent: Investigating box office revenues of motion picture sequels. *Journal of Business Research*, 61(7), 798-803. doi: 10.1016/j.jbusres.2007.07.030
- Basuroy, S., Chatterjee, S., & Ravid, S. A. (2003). How critical are critical reviews? The box office effects of film critics, star power, and budgets. *Journal of Marketing*, 103-117. doi: 10.1509/jmkg.67.4.103.18692
- Baum, C. F. (2006). *An introduction to modern econometrics using stata*. College Station, Tex.: Stata.
- Becker, H. S. (1984). *Art worlds*. Berkeley ; London: University of California Press.
- Boatwright, P., Basuroy, S., & Kamakura, W. (2007). Reviewing the reviewers: The impact of individual film critics on box office performance. *Quantitative Marketing and Economics*, 5(4), 401-425. doi: 10.1007/s11129-007-9029-1
- Bryant, J., & Miron, D. (2004). Theory and research in mass communication. *Journal of Communication*, 54(4), 662-704. doi: 10.1093/Joc/54.4.662
- Cameron, S. (1995). On the role of critics in the culture industry. *Journal of Cultural Economics*, 19(4), 321-331. doi: 10.1007/BF01073994

- Carroll, C. E., & McCombs, M. (2003). Agenda-setting effects of business news on the public's images and opinions about major corporations. *Corporate Reputation Review*, 6(1), 36-46. doi: 10.1057/palgrave.crr.1540188
- De Vany, A., & Walls, W. D. (1999). Uncertainty in the movie industry: Does star power reduce the terror of the box office? *Journal of Cultural Economics*, 23(4), 285-318.
- Debenedetti, S. (2006). The roles of media critics in the cultural industries. *International Journal of Arts Management*, 8(3), 30-42.
- Deephouse, D. L. (2000). Media reputation as a strategic resource: An integration of mass communication and resource-based theories. *Journal of Management*, 26(6), 1091-1112. doi: 10.1177/014920630002600602
- DiMaggio, P. (1987). Classification in art. *American Sociological Review*, 440-455. doi: 10.2307/2095290
- Duan, W., Gu, B., & Whinston, A. B. (2008). The dynamics of online word-of-mouth and product sales: An empirical investigation of the movie industry. *Journal of Retailing*, 84(2), 233-242.
- Elberse, A. (2007). The power of stars: Do star actors drive the success of movies? *Journal of Marketing*, 71(4), 102-120. doi: 10.1509/jmkg.71.4.102
- Eliashberg, J., & Shugan, S. M. (1997). Film critics: Influencers or predictors? *The Journal of Marketing*, 68-78. doi: 10.2307/1251831

- Eurostat Pocketbooks. (2011). Cultural statistics. Luxembourg: European Commission.
- Funkhouser, G. R. (1973). The issues of the sixties: An exploratory study in the dynamics of public opinion. *Public Opinion Quarterly*, 37(1), 62-75. doi: 10.1086/268060
- Gemser, G., Van Oostrum, M., & Leenders, M. A. A. M. (2007). The impact of film reviews on the box office performance of art house versus mainstream motion pictures. *Journal of Cultural Economics*, 31(1), 43-63. doi: 10.1007/s10824-006-9025-4
- Ghanem, S. (1997). Filling in the tapestry: The second level of agenda-setting. In M. E. McCombs, D. L. Shaw & D. H. Weaver (Eds.), *Communication and democracy*. Mahwah, NJ: Lawrence Erlbaum.
- Heckman, J. J. (1979). Sample selection bias as a specification error. *Econometrica*, 153-161. doi: 10.2307/1912352
- Hesmondhalgh, D. (2002). Popular music audiences and everyday life. In D. Hesmondhalgh & K. Negus (Eds.), *Popular music studies* (pp. 117-130). New York: Oxford University Press.
- Hill, E., O'Sullivan, C., & O'Sullivan, T. (2003). *Creative arts marketing*. Amsterdam: Butterworth-Heinemann.
- Hill Strategies Research Inc. (2011). Consumer spending on culture in 2008. *Resources on the Arts* Retrieved 20 Sep. 2012

- Hirsch, P. M. (1972). Processing fads and fashions: An organization-set analysis of cultural industry systems. *American Journal of Sociology*, 639-659. doi: 10.1086/225192
- Hirschman, E. C., & Pieros, A. (1985). Relationships among indicators of success in Broadway plays and motion pictures. *Journal of Cultural Economics*, 9(1), 35-63. doi: 10.1007/BF02267487
- Holbrook, M. B., & Schindler, R. M. (1994). Age, sex, and attitude toward the past as predictors of consumers' aesthetic tastes for cultural products. *Journal of Marketing Research*, 412-422. doi: 10.2307/3152228
- Holsti, O. R. (1969). *Content analysis for the social sciences and humanities*. Reading, Mass. ; London: Addison Wesley.
- Hovland, C. I., Lumsdaine, A. A., & Sheffield, F. D. (1949). *Experiments on mass communication*. Princeton: Princeton University Press.
- Janis, I. L., & Fadner, R. (1965). The coefficient of imbalance. In H. Lasswell, N. Leites & Associates (Eds.), *Language of politics* (pp. 153–169). Cambridge, MA: MIT Press.
- Karalis, V. (2012). *A history of greek cinema continuum*. New York: The Continuum International Publishing Group.
- King, T. (2007). Does film criticism affect box office earnings? Evidence from movies released in the us in 2003. *Journal of Cultural Economics*, 31(3), 171-186. doi: 10.1007/s10824-007-9041-z
- Kiousis, S. (2004). Explicating media salience: A factor analysis of New York Times issue coverage during the 2000 US presidential election. *Journal*

of Communication, 54(1), 71-87. doi: DOI 10.1111/j.1460-2466.2004.tb02614.x

Litman, B. R., & Ahn, H. (1998). Predicting financial success of motion pictures. In B. R. Litman (Ed.), *The motion picture mega-industry*. Needham Heights, MA: Allyn & Bacon.

Litman, B. R., & Kohl, L. S. (1989). Predicting financial success of motion pictures: The '80s experience. *Journal of Media Economics*, 2(2), 35-50. doi: 10.1080/08997768909358184

Matthes, J. (2006). The need for orientation towards news media: Revising and validating a classic concept. *International Journal of Public Opinion Research*, 18(4), 422-444. doi: 10.1093/Ijpor/Edh118

Matthes, J. (2008). Need for orientation as a predictor of agenda-setting effects: Causal evidence from a two-wave panel study. *International Journal of Public Opinion Research*, 20(4), 440-453. doi: 10.1093/Ijpor/Edn042

McCombs, M. E. (2004). *Setting the agenda: The mass media and public opinion*. Cambridge, UK; Malden, MA: Polity; Blackwell Pub.

McCombs, M. E., & Shaw, D. L. (1972). The agenda-setting function of mass media. *Public Opinion Quarterly*, 36(2), 176-187. doi: 10.1086/267990

Meijer, M. M., & Kleinnijenhuis, J. (2006). Issue news and corporate reputation: Applying the theories of agenda setting and issue ownership in the field of business communication. *Journal of*

Communication, 56(3), 543-559. doi: 10.1111/j.1460-

2466.2006.00300.x

Moon, S., Bergey, P. K., & Iacobucci, D. (2010). Dynamic effects among movie ratings, movie revenues, and viewer satisfaction. *Journal of Marketing*, 74(1), 108-121.

Mott, D. R., & Saunders, C. M. A. (1986). *Steven spielberg*. Boston: Twayne publishers.

Neelamegham, R., & Jain, D. (1999). Consumer choice process for experience goods: An econometric model and analysis. *Journal of Marketing Research*, 36(3), 373-386. doi: 10.2307/3152083

Nelson, P. (1970). Information and consumer behavior. *Journal of Political Economy*, 78(2), 311-329. doi: 10.1086/259630

Nelson, P. (1974). Advertising as information. *The Journal of Political Economy*, 82(4), 729-754. doi: 10.1086/260231

Prag, J., & Casavant, J. (1994). An empirical study of the determinants of revenues and marketing expenditures in the motion picture industry. *Journal of Cultural Economics*, 18(3), 217-235. doi: 10.1007/BF01080227

Ravid, S. A. (1999). Information, blockbusters, and stars: A study of the film industry. *The Journal of Business*, 72(4), 463-492. doi: 10.1086/209624

- Ravid, S. A., Wald, J. K., & Basuroy, S. (2006). Distributors and film critics: Does it take two to tango? *Journal of Cultural Economics*, 30(3), 201-218. doi: 10.1086/209624
- Roberts, M. S. (1992). Predicting voting behavior via the agenda-setting tradition. *Journalism & Mass Communication Quarterly*, 69(4), 878-892. doi: 10.1177/107769909206900408
- Scott, W. A. (1955). Reliability of content analysis: The case of nominal scale coding. *Public Opinion Quarterly*, 19(3). doi: 10.1086/266577
- Scott, W. R. (1995). *Institutions and organizations*. Thousand Oaks: SAGE.
- Shrum, W. (1991). Critics and publics: Cultural mediation in highbrow and popular performing arts. *American Journal of Sociology*, 347-375. doi: 10.1086/229782
- Siegel, D. S., & Vitaliano, D. F. (2007). An empirical analysis of the strategic use of corporate social responsibility. *Journal of Economics & Management Strategy*, 16(3), 773-792. doi: 10.1111/j.1530-9134.2007.00157.x
- Smith, S. P., & Smith, V. K. (1986). Successful movies: A preliminary empirical analysis. *Applied Economics*, 18(5), 501-507. doi: 10.1080/00036848608537445
- Sochay, S. (1994). Predicting the performance of motion pictures. *Journal of Media Economics*, 7(4), 1-20. doi: 10.1207/s15327736me0704_1
- Strömbäck, J., & Kiousis, S. (2010). A new look at agenda-setting effects—comparing the predictive power of overall political news consumption

and specific news media consumption across different media channels and media types. *Journal of Communication*, 60(2), 271-292. doi: 10.1111/j.1460-2466.2010.01482.x

Weaver, D. H. (1980). Audience need for orientation and media effects. *Communication Research*, 7(3), 361-373. doi: 10.1177/009365028000700305

Wyatt, R. O., & Badger, D. P. (1990). Effects of information and evaluation in film criticism. *Journalism & Mass Communication Quarterly*, 67(2), 359-368. doi: 10.1177/1077699090006700213

Yang, J., Kim, W., Amblee, N., & Jeong, J. (2012). The heterogeneous effect of wom on product sales: Why the effect of wom valence is mixed? *European Journal of Marketing*, 46(11-12), 1523-1538. doi: 10.1108/03090561211259961

Zuckerman, E. W., & Kim, T. Y. (2003). The critical trade-off: Identity assignment and box-office success in the feature film industry. *Industrial and Corporate Change*, 12(1), 27-67. doi: 10.1093/Icc/12.1.27

Zufryden, F. (2000). New film website promotion and box-office performance. *Journal of Advertising Research*, 40(1/2), 55-64.

Author Citation

Table 1: Summary statistics and correlation matrix

	Mean	Min	Max	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1. Weekly Revenue (logs)	10.59	5.93	14.55	1.49	1																			
2. Media visibility	1.14	0	19	1.94	0.13	1																		
3. Media valence	0.13	-1	1	0.48	0.07	0.28	1																	
4. Critical valence	2.43	0.50	5	0.93	-0.15	0.08	0.24	1																
5. CPI	111.72	103	130	4.37	0.21	0.07	0.00	-0.11	1															
6. GDP per capita (quarterly)	4990.74	4276.93	5475.89	334	-0.18	-0.09	-0.09	0.11	-0.27	1														
7. Crisis	19.94*	0	1	0.40	0.29	0.05	-0.03	-0.13	0.89	-0.20	1													
8. Director awards	54.98*	0	1	0.49	-0.22	0.07	0.10	0.49	-0.19	0.20	-0.21	1												
9. Cast awards	39.55*	0	1	0.49	-0.13	-0.01	-0.01	0.14	-0.10	0.20	-0.07	0.41	1											
10. Distributor size	12.37	1	26	8.81	-0.16	-0.17	-0.08	0.06	-0.33	0.32	-0.38	0.05	0.14	1										
11. Alternative competition	4.41	0	11	3.13	-0.34	-0.09	0.03	0.08	-0.46	-0.09	-0.58	0.11	0.01	0.25	1									
12. Blockbuster competition	4.17	0	8	1.72	-0.17	0.03	0.02	-0.07	0.02	-0.12	-0.04	-0.16	-0.07	-0.06	0.30	1								
13. Sequel	4.82*	0	1	0.27	0.11	-0.10	-0.06	-0.22	0.03	0.06	0.05	0.01	0.03	0.07	-0.16	-0.20	1							
14. YouTube	83.60*	0	1	0.33	0.21	-0.03	-0.05	-0.10	0.09	-0.07	0.11	-0.01	-0.06	-0.05	-0.17	-0.13	0.11	1						
15. Screens	18.51	5	124	23.4	0.75	0.00	-0.05	-0.33	0.17	-0.18	0.21	-0.35	-0.28	-0.06	-0.22	-0.13	0.23	0.17	1					
16. Budget (logs)	16.18	10.82	18.28	1.13	0.15	-0.05	-0.10	-0.22	0.06	-0.04	0.07	-0.04	0.04	0.00	-0.04	-0.02	0.27	-0.05	0.24	1				
17. Summer	16.08*	0	1	0.33	-0.13	-0.04	-0.13	0.04	0.08	0.43	0.10	0.02	0.13	0.02	-0.14	-0.01	0.06	-0.04	-0.22	-0.13	1			
18. Christmas	19.94*	0	1	0.42	0.22	0.07	0.14	-0.05	0.07	-0.30	0.08	-0.11	-0.18	-0.13	0.04	0.19	-0.02	0.09	0.21	0.08	-0.22	1		
19. Easter	7.72*	0	1	0.25	0.02	-0.01	0.00	0.01	0.06	0.09	0.07	0.00	0.09	0.00	-0.19	-0.31	-0.02	-0.02	-0.01	0.08	-0.11	-0.15	1	
20. Premiere gap	21.23	0	816	56.75	-0.18	-0.03	0.08	0.39	-0.12	0.25	-0.13	0.23	0.14	0.15	0.10	0.04	-0.09	-0.27	-0.21	-0.22	0.26	-0.12	-0.07	1

Note:

* Value represents the percentage of sample movies that take a value of 1; e.g. 19.94% of the sample movies were on theaters during the Greek financial crisis (2010-2011)

Table 2: Regression models

	Controls	Baseline	Extended	Interactions	Baseline (lags)	Extended (lags)	Interactions (lags)
	Coef./SE	Coef./SE	Coef./SE	Coef./SE	Coef./SE	Coef./SE	Coef./SE
Media visibility		0.088*** (0.01)	0.088*** (0.01)	0.087*** (0.01)	0.111*** (0.01)	0.112*** (0.01)	0.104*** (0.01)
Media valence		0.185** (0.07)	0.162* (0.07)	0.170* (0.07)	0.129† (0.07)	0.122† (0.07)	0.137† (0.08)
Expert valence			0.142* (0.07)	0.142* (0.07)		0.064** (0.02)	0.042** (0.01)
Media valence X Expert valence				-0.006 (0.06)			-0.033 (0.13)
Media valence X Media volume				0.008 (0.04)			-0.122 (0.09)
Media volume X Expert valence				-0.009 (0.02)			-0.023 (0.14)
Premiere gap	0.000 (0.00)	0.000 (0.00)	-0.000 (0.00)	-0.000 (0.00)	0.000 (0.00)	-0.000 (0.00)	-0.000 (0.00)
CPI	-0.082*** (0.02)	-0.093*** (0.03)	-0.092*** (0.03)	-0.092*** (0.03)	-0.125*** (0.02)	-0.126*** (0.02)	-0.126*** (0.02)
GDP per capita	-0.000 (0.00)	-0.000 (0.00)	-0.000 (0.00)	-0.000 (0.00)	0.000 (0.00)	0.000 (0.00)	0.000 (0.00)
Crisis	0.703* (0.28)	0.781** (0.29)	0.756** (0.29)	0.756** (0.29)	0.962*** (0.28)	0.967*** (0.29)	0.989*** (0.29)
Director awards	0.100 (0.11)	0.051 (0.11)	-0.024 (0.11)	-0.025 (0.11)	0.181 (0.16)	0.132 (0.16)	0.145 (0.16)
Cast awards	0.080 (0.11)	0.092 (0.11)	0.109 (0.11)	0.108 (0.11)	-0.137 (0.15)	-0.127 (0.15)	-0.123 (0.15)
Distributor size	-0.009 (0.01)	-0.006 (0.01)	-0.007 (0.01)	-0.007 (0.01)	-0.008 (0.01)	-0.009 (0.01)	-0.008 (0.01)
Alternative competition	-0.068*** (0.02)	-0.061** (0.02)	-0.060** (0.02)	-0.061** (0.02)	-0.052* (0.02)	-0.051* (0.02)	-0.050* (0.02)
Blockbuster competition	-0.028 (0.03)	-0.026 (0.03)	-0.024 (0.03)	-0.024 (0.03)	-0.060† (0.04)	-0.058 (0.04)	-0.059 (0.04)
Sequel	-0.259 (0.17)	-0.188 (0.18)	-0.132 (0.19)	-0.132 (0.19)	-0.396† (0.23)	-0.372 (0.24)	-0.377 (0.26)
YouTube	0.350* (0.14)	0.374** (0.14)	0.362* (0.14)	0.363* (0.14)	0.218 (0.32)	0.217 (0.32)	0.213 (0.32)
Screens	0.046*** (0.00)	0.045*** (0.00)	0.045*** (0.00)	0.045*** (0.00)	0.044*** (0.01)	0.044*** (0.01)	0.044*** (0.01)
Budget (logs)	0.027 (0.05)	0.031 (0.05)	0.045 (0.05)	0.044 (0.05)	0.030 (0.05)	0.036 (0.05)	0.037 (0.05)
Genre dummies: Adventure	-0.018 (0.24)	-0.015 (0.25)	-0.041 (0.26)	-0.043 (0.26)	-0.396 (0.52)	-0.413 (0.52)	-0.417 (0.52)
Animation	-0.598* (0.27)	-0.553* (0.27)	-0.526† (0.28)	-0.525† (0.28)	-0.608* (0.29)	-0.576† (0.31)	-0.560† (0.31)
Biography	0.221 (0.27)	0.229 (0.27)	0.183 (0.27)	0.177 (0.27)	0.036 (0.13)	0.018 (0.14)	-0.000 (0.15)
Comedy	0.115 (0.19)	0.105 (0.20)	0.104 (0.20)	0.099 (0.20)	0.157 (0.20)	0.154 (0.21)	0.151 (0.20)
Crime	-0.005 (0.24)	0.018 (0.25)	-0.027 (0.24)	-0.030 (0.24)	-0.267 (0.30)	-0.284 (0.29)	-0.290 (0.28)
Documentary	0.123 (0.30)	-0.008 (0.33)	-0.132 (0.33)	-0.130 (0.33)	-0.362 (0.23)	-0.406† (0.21)	-0.402† (0.22)
Drama	-0.079 (0.19)	-0.144 (0.20)	-0.193 (0.20)	-0.194 (0.20)	-0.216 (0.20)	-0.237 (0.19)	-0.251 (0.18)

Fantasy	-0.186 (0.26)	-0.287 (0.27)	-0.430 (0.27)	-0.412 (0.28)			
Horror	-0.205 (0.22)	-0.190 (0.24)	-0.238 (0.23)	-0.246 (0.23)	-0.793* (0.34)	-0.829** (0.30)	-0.816** (0.31)
Mystery	- (0.22)	-0.108 (0.22)	-0.131 (0.22)	-0.132 (0.22)	-0.492* (0.22)	-0.495* (0.21)	-0.501* (0.19)
Romance	0.054 (0.30)	-0.043 (0.30)	-0.107 (0.31)	-0.108 (0.32)			
Thriller	-0.355 (0.52)	-0.366 (0.62)	-0.550 (0.57)	-0.553 (0.57)	-0.272 (0.35)	-0.367 (0.34)	-0.385 (0.41)
Summer	0.111 (0.13)	0.139 (0.13)	0.152 (0.13)	0.154 (0.13)	-0.026 (0.22)	-0.024 (0.22)	-0.014 (0.21)
Christmas	0.319* (0.14)	0.283* (0.14)	0.279* (0.14)	0.279* (0.14)	0.286* (0.14)	0.283* (0.13)	0.288* (0.14)
Easter	-0.039 (0.17)	-0.030 (0.17)	-0.032 (0.17)	-0.032 (0.17)	-0.281 (0.18)	-0.283 (0.18)	-0.277 (0.18)
Inverse Mills Ratio					0.184*** (0.05)	0.184*** (0.05)	0.222* (0.09)
Constant	19.157*** (2.39)	19.909*** (2.42)	19.327*** (2.46)	19.346*** (2.47)	22.905*** (1.80)	22.718*** (1.97)	22.921*** (1.88)
Observations	790	788	787	787	475	475	475
Films	311	311	310	310	154	154	154
Chi ²	1105.54	2536.76	3102.49	3002.77	2421.12	2431.32	2430.71
R ² (Between)	0.56	0.60	0.61	0.61	0.66	0.68	0.68

Notes:

† p<0.1, * p<0.05, ** p<0.01, *** p<0.001

The base movie genre is "Action"

We use a cluster estimator to obtain unbiased estimates for country-correlated data.