

The impact of film reviews on the box office performance of art house versus mainstream motion pictures

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Abstract Critics and their reviews can play an important role in consumer decision making in general, and film choice in particular. In this study, we propose that consumers of art house movies are being led by film reviews when making a film choice (influence effect), whereas consumers of mainstream movies are hypothesized to rely mainly on other sources of information. Thus, in the latter case the review does not influence the moviegoer, but may still be a reflection of the ultimate success of the movie (predictor effect). Using the Dutch film industry as our empirical setting, we study the effects of reviews on the opening weekend and on the cumulative box office revenue. Our research shows that the number and size of film reviews in Dutch newspapers directly influence the behavior of the art-movie-going public in their film choice. The number and size of film reviews of mainstream movies, on the other hand, only predict movie performance.

Keywords Dutch art house movies · Dutch mainstream movies ·
Film critics · Film performance

1 Introduction

When dealing with products of which the quality is difficult to ascertain prior to purchase, one may expect a greater reliance on secondary cues that help consumers in their selection process. One important mechanism for transmitting this type of information about products of uncertain quality is product reviews written by experts (Reinstein & Snyder, 2005). Experts can be defined as actors who are neither producers nor

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consumers, but can still influence the selection process of consumers by virtue of specific knowledge or abilities attributed to them (Wijnberg & Gemser, 2000).

There are different studies examining the impact of expert reviews on the performance of experience products, particularly those offered in cultural markets, such as the theater and the performance arts (e.g., Hirschman & Pieros, 1985; Reddy, Swaminathan, & Motley, 1998), books (e.g., Verdaasdonk, 1987), and movies (e.g., Eliashberg & Shugan, 1997; Basuroy, Chatterjee, & Ravid, 2003; Reinstein & Snyder, 2005).

According to the current literature, film reviews can play two basic roles. First, film reviews can actively influence consumers in their selection process. This is the *influence effect* of film reviews. Second, film reviews can forecast whether a movie will become a success or not. This is the *prediction effect* of film reviews. In the movie industry there seems to be a strong belief in the role of film critics as the influencers of movie success; negative film reviews are considered to be harmful to movie performance, whereas positive reviews are perceived to be instrumental in enhancing box office revenues. This belief is exemplified by the efforts of movie distributors to shape or even “manipulate” critical opinion (e.g., Lovell, 1997) and the incorporation of quotes from film reviews in their advertising.

In empirical studies on the role of film critics and their reviews, both influence and prediction effects of reviews on film demand have been established (Eliashberg & Shugan, 1997; Basuroy et al., 2003; Reinstein & Snyder, 2005). This raises the question, which factors determine whether film reviews produce influence and/or prediction effects? In this paper, we hypothesize that the nature of the film, art house, or mainstream, may be an important factor in this respect. The findings of Reinstein and Snyder (2005), who explored differences on the basis of a sample split in terms of number of screens, give a first indication that the nature of the film may indeed be a relevant determinant.

In this study, we will examine whether the impact of film reviews of mainstream movies differs from those of art house films. We argue that consumers of art house movies are actually being led by film reviews when making their particular movie choice. Consumers of mainstream movies, on the other hand, are hypothesized to rely mainly on other sources of information to make their choice. These sources are, for example, word-of-mouth, the participation of movie stars, and/or movie advertising. Film reviews of art house movies are therefore hypothesized to directly influence the art-movie-going public, whereas film reviews of mainstream movies are assumed to merely predict movie performance.

Apart from its theoretical underpinning, this study makes an empirical contribution to the literature in several ways. So far, empirical studies determining the impact of film reviews have mainly focussed on U.S. film critics writing on mainstream movies produced and distributed by major Hollywood studios. Studies on the impact of film reviews on movies that can be characterized as “art house” are scarce, as are studies on the impact of film reviews in other countries than the U.S. Our empirical setting is the Dutch movie market: we collected data on films first released in the Netherlands as well as on their reviews, which were published in 13 different types of Dutch newspapers (in the period 1998–2003). Finally, our study is valuable because it examines the impact of both the size and the number of reviews on film demand as well as the tone (nature) of the reviews.

The structure of the article is as follows – we will start with a review of the key literature on film criticism and formulate our hypotheses. We will then describe the data, the measures and the model, after which we will discuss our findings. We will

conclude this article with a summary of our key findings, the managerial implications, and some suggestions for further research.

2 Literature review

2.1 Art house and mainstream movies

In this research, we distinguish two basic types of films in the industry: art house and mainstream movies. Mainstream movies are also labeled “major” and art house movies “independent” films (e.g., Zuckerman & Kim, 2003). This notion already implies that mainstream movies are the dominant species in the film industry, aimed at the mass market, whereas art house movies are in general focussed on a niche market.

In the existing literature, different definitions are used to characterize art house versus mainstream movies. Typically, definitions tend to refer to the degree of “artistic” versus “commercial” qualities (e.g., Bagella & Becchetti, 1999; Baumann, 2002), the available production and/or marketing budget (e.g., Geer, 1998), the participation of movie stars or the occurrence of special effects (e.g., Geer, 1998; Bagella & Becchetti, 1999), the share of screens (e.g., Reinstein & Snyder, 2005), or the content, genre, or narrative structure of the movie (e.g., Bordwell & Thompson, 2001). In this article, we will adopt the approach of Zuckerman and Kim (2003) who make the distinction between art house and mainstream movies in the U.S. film industry visible by studying the “market identity” or “market role” of U.S. film distributors. These distributors tend to have established identities in the eyes of the audience and distribute either mainstream or art house films. In this paper, we adopt a similar approach by splitting our sample into art house and mainstream films based on the market identity of the film theatres in which the film is released: if the film is released in film theatres that predominantly show art house films, the film is classified as art house and if the film is released in film theatres that show above all mainstream films, it is coded as mainstream.¹ As we will discuss more in-depth in the results section, our distinction between mainstream and art house captures a significant variance in a film’s share of screens.

2.2 Film critics: influencers or predictors?

Film critics, in general, adopt “evaluative journalism”, providing the consumer with basic, descriptive information about a movie (such as the genre, the cast, and the plot) and a personal evaluation, an either positive or negative judgment of the quality of the film in question (about the functions of film critics, see e.g., Brown, 1978; Wyatt & Bager, 1990; Cameron, 1995).

There are different studies that examine the impact of film reviews on movie performance. Most of these studies have utilized film reviews as one of the co-variables in a regression model with cumulative box office performance as the

¹ We do not study the market role of film distributors, as Zuckerman & Kim (2003) do, because the Dutch film distribution companies do not tend to be specialized in one type of film; in general, they distribute *both* art house and mainstream movies. Dutch film production organizations also tend not to have established identities in the eyes of the audience, since many of them are set up for one film project only. Dutch film theatres on the other hand, do have a clear market profile: they either predominantly show mainstream or art house movies.

dependent variable. Many of these studies have found a positive relationship between favorable movie reviews and movie performance (e.g., Litman & Kohl, 1989; Wyatt, 1991; Wallace, Seigerman, & Holbrook, 1993; Sochay, 1994; Litman & Ahn, 1998). The results of a number of other studies indicate, however, that positive film reviews are not significantly related to movie performance (Ravid, 1999; Zufryden, 2000), or even negatively correlated with movie success (Hirschman & Pieros, 1985).

There are a few studies that have employed data on weekly rather than on cumulative revenues to determine the impact of film reviews on movie success (Eliashberg & Shugan, 1997; Basuroy et al., 2003; Reinstein & Snyder, 2005). This latter approach allows for testing whether film critics act as influencers, predictors, or both, as we intend to do in this article.

As noted in the Introduction section, the influencer perspective implies that film critics and their reviews directly influence the consumers' decision making, whereas the predictor perspective suggests that film critics merely predict the consumers' decisions. To determine influence and/or prediction effects, the impact of film reviews on early, late, and cumulative box office revenue have been examined (Eliashberg & Shugan, 1997; Basuroy et al., 2003; Reinstein & Snyder, 2005). It has been argued that, if critics are influencers, they should exert the greatest impact on early box office revenue and after that their role should diminish with each passing week as other information sources, in particular word-of-mouth, become available to the consumer (Eliashberg & Shugan, 1997). In contrast, if critics predict a film's ultimate fate, their reviews should correlate with late and cumulative box office revenue, not necessarily with the early weeks (Basuroy et al., 2003). Thus, if the relation between reviews and box office revenue is the strongest in the first week and after that it diminishes, the reviews have an influence effect. If however, the relation with late and cumulative box office receipts is the most significant, a prediction effect is present.

Eliashberg and Shugan (1997), who were the first to introduce and test these concepts, find that film reviews are positively related to late and cumulative box office receipts, but do not correlate significantly with early box office revenue. Their findings thus indicate that film critics can only predict the likely response of the audience, but are not capable of shaping the preferences of the audience. Reinstein and Snyder (2005) find a similar pattern of an increasing correlation between reviews and box office revenue during the period when a movie is shown, which suggests that reviews have a prediction effect. Basuroy et al. (2003), on the other hand, demonstrate that critics may act both as influencers and predictors. They find that for the first 8 weeks, both positive and negative reviews are significantly related to box office receipts. However, after that the impact of negative reviews (but not that of positive reviews) diminishes, a pattern that is more consistent with the critics' role as influencers.

The apparent divergence in findings on the role of film critics may, in part, be a result of not making a difference between the type of film involved: mainstream or art house.² In this article, we hypothesize that reviews of art house movies will have an influence effect on film demand, whereas reviews of mainstream movies do not influence film demand, but predict it. Some results of Reinstein and Snyder (2005)

² Another explanation may be found in method used. Eliashberg and Shugan (1997), for example, only include movies in their sample that were shown in the movie theaters for at least 8 weeks. By doing so, their results may be biased toward more successful movies, thereby downplaying the possible impact of negative reviews (we thank one of the anonymous reviewers for pointing this out to us).

also point into this direction; when they break their sample into widely and narrowly-released films, they find no influence effect for widely-released films but a positive influence effect for narrowly-released ones. Anecdotal evidence on the role of film reviews in the decision-making process of consumers also suggests an influence effect in the case of art house films: 50% of the movie-going public that visited a particular European art film festival indicated to have chosen a particular movie after reading its review (EFA, 1997, p. 24).

Hirschman and Pieros (1985) suggest that the audience of art house movies apply evaluative criteria similar to those of professional critics, which will most probably lead to similar judgments concerning movies. The evaluative criteria of the audience of mainstream movies, on the other hand, diverges from, or may even conflict with those of the critics (Hirschman & Pieros, 1985). Austin (1984) reports that the art film audience sampled consciously selected the movies they intended to watch, and were interested in and enjoyed reading about the films they attended. Conscious film selection and reading interest may translate itself into a heightened interest in published film reviews, while similarity between the evaluative criteria of film critics and the art house-film consumers may stimulate the influence effect of these reviews on art house film demand.

Another indication that reviews of art house movies have an influence effect on film demand, whereas mainstream movie reviews at best have a prediction effect, is the lack of strong “signaling properties” (Lampel & Shamsie, 2000) of art house movies compared to those of mainstream movies. Mainstream movies tend to have a high-profile cast (popular stars and directors with mass appeal), special effects, exotic locations and/or elaborate sets. These signaling properties may reduce consumer uncertainty about the quality of a movie. Art house movies, on the other hand, generally have poor “signaling properties” and thus lack the ingredients that can be used to “sell” the movie to the public. The empirical results of Lampel and Shamsie (2000) indicate that positive reviews play a pivotal role in generating the consumers’ interest in movies that are lacking strong signaling properties. In the case of movies with strong signaling properties, on the other hand, positive reviews of movie critics were found to be useful but not indispensable for good movie performance.

In general, the advertising budgets of art house movies are much lower than those of mainstream movies and, as a result, the first cannot rely heavily on promotional devices, such as previews, trailers and advertisements to mold consumer preferences. Marketing utterances are thus a less important information source for the audience of art house movies, simply because there are fewer marketing expressions. Furthermore, word-of-mouth information regarding art house movies is more scarce simply because the audience of art house movies is much smaller than that of mainstream movies.³ Reviews are therefore hypothesized to be a more important information source for the art house movie consumer than they are for the mainstream movie consumer.

2.3 Film reviews and visibility

Studies that examine the impact of film reviews on film performance in general only examine the nature of the review (positive or negative). However, the “visibility” provided by film reviews can also account for box office performance. Hirsch (1972)

³ In the Netherlands, only about 14% of all moviegoers visit art house movies (Borsboom, 2001).

already pointed out that, to be selected by the distributors and, ultimately, the final consumers, coverage, or the absence of coverage in the mass media is what counts, rather than a favorable or unfavorable interpretation of the product involved. In the words of Shrum (1991, p. 368): “(...) even mediocre or negative reviews are better than no review at all.” The empirical results of Wyatt and Badger (1990) also support this line of reasoning. Their results indicate that potential movie audiences respond less to the evaluative component of film reviews than to their descriptive component. In his empirical study on the performing arts, Shrum (1991) finds that the number of reviews has a stronger correlation with audience size than the content of the reviews. Similar results are reported in (Ravid, 1999): while the relationship between the number of published reviews and the success of movies is positive and significant, no such relationship between the nature of film reviews and movie performance is found. It therefore seems that the effect of reviews may be determined by their number, and not necessarily by their evaluative nature.

Next to the number of reviews published in media outlets such as newspapers and magazines, the size of the review may also be of influence on movie success. A film review that covers half a newspaper page and includes one or more photos will provide more visibility than a film review of only 100 words without a photo. Nik Powell, a film producer from the U.K. states, for example: “... it’s better to have an OK review but have the lead [...] than it is to have a great review which is only two paragraphs at the end of Page Six [of the newspaper] which maybe most readers never reach” (cited in: EFA, 1997, p. 11).

To recapitulate, we expect the effect of reviews to differ when comparing art house with mainstream movies: while reviews on art house movies are hypothesized to have an influence effect, reviews of mainstream movies are expected to have a prediction effect. Our hypothesis is based on extant empirical results (in particular the results from Reinstein & Snyder, 2005) and rooted in theory. Research has shown that the audience of art house movies reads film reviews relatively often and that, contrary to the mainstream film audience, there is similarity between the evaluative criteria of film critics and art house-film consumers (Hirschman & Pieros, 1985). Furthermore, reviews seem to play a crucial role in helping the art house film audience to assess the quality of movies, because, contrary to mainstream films, these movies lack strong signaling properties (Lampel & Shamsie, 2000) and because there are, in general, fewer promotional devices, such as previews, trailers and advertisements, to mold consumer preferences. To study the impact of film reviews, we have to examine not only their evaluative nature (positive or negative), as is usually done, but also examine the number and/or size of the reviews published.

3 Method

3.1 Data and variables

Our empirical study focusses on assessing the effects of film reviews on the box office performance of Dutch movies. Dutch movies are defined as movies that have their premieres in the Netherlands. Our sample consists of **all non-documentary movies released in Dutch theaters between early 1998 and late 2003 ($n = 84$ movies).**

3.2 Box office data

The box office performance of the movies is our dependent variable. Since the data cover several years, the box office performance has been **corrected for inflation by using the consumer price index**.⁴

The box office performance is divided into two variables: the box office revenue of the opening weekend (OPENREV) and the cumulative box office (TOTREV). The Thursday, Friday, Saturday, and Sunday during a movie's first week constitute its opening weekend. The **required data on opening weekend revenue were obtained by contacting the distributors of the movies sampled and the Dutch Association of Movie Distributors**. Figures on **cumulative box office revenue were collected from three on-line databases: www.imdb.com, www.film totaal.nl, and www.denederland-sespeelfilm.com**. In our regression analyses, the dependent variables **OPENREV and TOTALREV have been logged** to correct for a skewed distribution resulting from a small number of outliers.

3.3 Film critics' in Dutch newspapers

We examined film reviews published in 13 daily newspapers: 7 national newspapers (of which 2 are distributed for free) and 6 regional newspapers. In Appendix 1, we supply a list of all the newspapers included and describe them more elaborately: we provide the yearly circulation figures of each newspaper in the sample, the target group of the journal (either the "cultural elite" or the mass public), and the geographic focus (regional or national), and we briefly describe the editorial policies with regard to the publication of film reviews. There are three main reasons why we focus on newspapers rather than on other media outlets, which also review films. First, it appears that for moviegoers, newspapers are an important source of information (Austin, 1984). Second, the circulation of Dutch newspapers is very high. In the period 1998–2003 (our sampling time frame), on average 79 daily newspapers were available per 100 Dutch households (www.persmediamonitor.nl).⁵ In the Netherlands, there are no specific weekly magazines devoted to film that are widely read nor a well-watched weekly television show in which film critics discuss newly released films. There is, on the other hand, a monthly magazine, distributed for free at most of

⁴ All amounts are based on 2003 (2003 = 100). The conversion rate between the Dutch guilder and the Euro as established in 2002 has been used to convert all amounts to Euros. We used the following Price Index (source: Dutch Central Bureau of Statistics) :

Year	Index
2003	100
2002	98.0
2001	94.8
2000	90.7
1999	88.4
1998	86.5

⁵ The figure given (79 newspapers per 100 households) includes households that are subscribed to a newspaper, households that regularly buy a newspaper, and households whom the newspaper is passed on to. This figure does *not* include the circulation of national newspapers that are distributed for free (i.e., *Metro* and *Spits*). Thus, the figure given is a rather conservative one.

the film theatres, that does have a relatively high circulation rate, but this magazine includes reviews that are summaries of the reviews that appeared in Dutch national and regional newspapers. Third, in order to assess the influence effects of reviews, we considered newspapers to be a better source than weekly or monthly magazines, since Dutch newspapers in general publish their reviews on the exact date of a film's release or one day before or after. And assuming that the daily newspapers are actually read on a daily basis, we can thus conclude that the reviews may indeed influence demand during the opening weekend of a film. On the other hand, it is much more difficult to assess the influence effects of reviews in weekly or monthly magazines, because they might just as well be read *after* a film's opening weekend.

To be able to assess the possible influence effects of film reviews, we have **only sampled reviews published on the release date of the movie or one day before or after**. Generally, a Dutch movie is released on Thursdays.

Most Dutch newspapers do not apply star ranking to indicate the quality of the film. However, **in a particular monthly magazine, distributed for free at most of the Dutch film theatres, star ratings are provided by the critics of national and regional newspapers on the basis of the reviews they already published (0 = poor evaluation, 5 = high evaluation)**. In 50% of the cases, no star ranking by film critics could be found. In such cases, the reviews were rated by two researchers, working independently of each other. **If occasionally the scores did not match, they were averaged**. The standard deviation between the scores as given by two raters was low (.23), indicating an adequate inter-rater reliability. Thus, the **NATURE REVIEW** variable expresses the average of the star ratings given by the film critics and the two independent raters. To control for newspaper circulation, we included the **NATURE REVIEW WEIGHTED** variable. **This variable was calculated as follows. For each film in the sample, we multiplied the star rating obtained in a particular newspaper by the yearly circulation of that specific newspaper; we subsequently added up the figures obtained from each of the 13 newspapers sampled. The SIZE REVIEW variable was determined by measuring the relative size of the review (in cm²) on a newspaper page. To be more precise, we measured the review in cm², also including possible photos, and divided the resulting cm² by the total size in cm² of one newspaper page. We again controlled for circulation (SIZE REVIEW WEIGHTED), using the same method as described above for the nature of the review. The NUMBER REVIEW variable expresses the number of reviews published in the 13 Dutch newspapers sampled. Here, we once again controlled for circulation (NUMBER REVIEW WEIGHTED).**

3.4 Type of movie

As noted before, to determine whether a film can be identified as an **art house or mainstream movie**, we adopted an **approach similar to that of Zuckerman and Kim (2003); we examined the "market identity" or "market role" of the Dutch theaters in which the movie was released**. We coded the type of movie by using a dummy variable (**MOVIE TYPE**); the dummy variable has a value of 1 if the movie is classified as art house and a value of 0 if otherwise.

3.5 Control variables

Next to data on movie type, the visibility provided by the film reviews and their nature, we also used control variables. Unless indicated otherwise, the data with

respect to these control variables came from three one-line movie databases: www.imdb.com, www.denederlandsspeelfilm.com, and www.nfd.com.

Star power. As a control variable we have included the participation of star actors, actresses and/or directors of a film's cast. Several studies have examined whether star power is associated with movie success. The empirical evidence is mixed. In some studies, a positive effect of stars on film performance has been found (e.g., Wallace et al., 1993; Sochay, 1994; Albert, 1998; Litman & Kohl, 1989; Bagella & Becchetti, 1999). In contrast, other studies show no significant relationship between star power and film revenues (e.g., Litman & Ahn, 1998; Zufryden, 2000). In our analysis, we have adopted the approach of Bagella and Becchetti (1999) and used the opinion of film experts to determine whether cast members have star power or not.⁶ We created the STAR dummy variable, whose value is 1 if at least one star actor, actress, or director features in a film, and 0 if otherwise. Of the 84 movies in our sample, 39 have star power. Of these 39 star-featuring films, 10 are art house movies.

Production budget. Different researchers have shown that the production budget influences movie performance (e.g., Litman & Kohl, 1989; Wallace et al., 1993; Litman & Ahn, 1998; Ravid, 1999; Zufryden, 2000). It is common industry knowledge that art house movies in general have smaller production budgets than major films. Hence, the production budget is used as a control variable in our analysis.⁷ If no data could be found in on-line movie databases, the relevant film production companies were contacted to provide us with the necessary information. The budget variable was logged to correct for a skewed distribution and labeled $\ln(\text{BUDGET})$.

Distribution. It has been found (e.g., Litman & Kohl, 1989; Wyatt, 1991) that a film distributed by a major film distributor yields significantly higher revenues. This can be explained by the fact that the resources of the major film distributors allow "superior distribution and marketing practices" (Wyatt, 1991, p. 99; cf. Litman & Kohl, 1989). However, Sochay (1994) and Litman and Ahn (1998) find that the size of the distributor is not significantly correlated with movie performance. In this study, we have controlled for the size of the film distributor by means of the DISTRIBUTOR dummy variable. In the Dutch film industry, a difference can be made between the large U.S. distribution companies active in the Netherlands and the relatively small Dutch distribution companies. Whereas the U.S. distributors mainly distribute Dutch mainstream movies, the Dutch distributors may distribute both Dutch art house and Dutch mainstream movies. The DISTRIBUTOR variable is 1 if the film is distributed by a major U.S. distributor, and 0 if otherwise. In total, 30 films are distributed by major U.S. distributors, 5 of which are art house films.

Number of screens. The number of screens or theaters allocated to a film has proven to be a very powerful predictor of movie success (e.g., Litman & Kohl, 1989; Sochay, 1994; Zufryden, 1996; Eliashberg & Shugan, 1997; Litman & Ahn, 1998; De Vany & Walls, 1999; Zufryden, 2000; Elberse & Eliashberg, 2003; Basuroy et al., 2003). Indeed, the empirical results of Elberse and Eliashberg (2003) indicate that variables such as movie attributes and advertising expenditures, which are usually assumed to influence revenues directly, mostly influence revenues indirectly, namely

⁶ We use the findings of a research by the Dutch Film Fund (reported in Durie & Pham, 2002). In total, 37 industry insiders (movie distributors, operators of movie theaters, and movie producers) were asked which actors, actresses, and directors have star power.

⁷ The production budget (BUDGET) is expressed in constant Euros (2003 = 100) according to the table in endnote 4.

through their impact on the theater owners' screen allocations. The number of screens is a dynamic variable that can be adapted to demand during the period when a film is shown (DeVany & Walls, 1999). Hence, to capture the influence of screens on box office revenues, we have focussed on **the number of screens to which the movie was originally released**. The screen variable has been logged to correct for a skewed distribution, and it is labeled $\ln(\text{SCREENS})$.

Release date. The particular point in time when a movie is released can have an important impact on its performance (e.g., Litman & Kohl, 1989; Wyatt, 1991; Sochay, 1994; Litman & Ahn, 1998; Zufryden, 2000). In line with previous studies (e.g., Litman & Kohl, 1989; Sochay, 1994; Litman & Ahn, 1998), we have created a dummy variable that denotes films that have been released during the Christmas or summer time, which are high-attendance periods, attracting greater audiences. This measure shows that 16 of the 84 films in our sample were **released in a high-attendance period** (i.e., $\text{RELEASE} = 1$), of which 5 are art house films.

Building on prior work. Our last control variable is **whether or not the film is a sequel of an existing film or based on a well-known book, theatre production, or television series**. These prior works offer clues that enable consumers to perceive and evaluate a film in advance (Hennig-Thurau, Walsh, & Wruck, 2001) and may result in more media attention whenever the film is released. Of the sampled films, 24 are based on prior works (i.e., $\text{PRIOR WORK} = 1$), of which 5 are art-house films.

4 Analysis

4.1 Overview of the sample

The most expensive film in the sample cost 14.4 million Euros (*The Discovery of Heaven*). The film *Kruimeltje* yielded the highest total revenue (6.7 million Euros). The average rating of a film was 2.6 on a scale from 0 to 5 and the number of film reviews fluctuated from a minimum of 6 to a maximum of 13 (mean: 10.5). The average size of reviews published in the newspapers sampled was 15.3% on one newspaper page. When multiplying the size of the review by the distribution of the newspaper in which it appeared, we learn that an average art house movie obtains 47,548 full-page-equivalents (FPEs) and mainstream movies 63,943 FPEs.

Table 1 provides the descriptive statistics of the two subgroups: art house and mainstream movies.

The ANOVA results show that art house and mainstream movies differ significantly in many ways. Art house movies have, for example, smaller budgets, are released on fewer screens, often do not have a high-profile cast, and have on average a much smaller audience at the box office. Interestingly, the average critics' ratings of films classified as art house (mainstream) are not significantly different from the other movie type. The size and the number of reviews, however, differ significantly between the two groups: mainstream movies are most visible in the printed press. To explore the differences between newspapers, we tested whether sampled newspapers that focus on the "cultural elite" pay more attention to art house movies and/or whether reviews of art house movies in this type of newspaper are more positive in nature than those in newspapers focussing on a mass public. The results in Table 2 show that newspapers with a focus on the cultural elite publish lengthier film reviews, but

Table 1 Descriptive statistics and ANOVA results

	Art House movies		Mainstream movies		ANOVA results
	Mean	S.D.	Mean	S.D.	<i>F</i>
TOTALREV	0.10 million	186.727	1.2 million	1.774.392	12.58**
OPENREV	0.01 million	14.933	0.12 million	150.591	12.57**
BUDGET	1.5 million	1.840.453	3.19 million	3.251.631	6.15*
NATURE REVIEWS	2.61	0.55	2.54	0.76	0.18
NATURE REVIEWS (WEIGHTED)	7978	1889	8161	2423	0.13
SIZE REVIEWS	13.64	6.09	18.52	7.30	9.81**
SIZE REVIEWS (WEIGHTED)	47548	21101	63943	27676	8.11**
NUMBER REVIEWS	9.32	1.78	11.28	1.65	26.17**
NUMBER REVIEWS (WEIGHTED)	2571	337	2945	385	20.19**
SCREEN	7.61	5.64	44.79	38.86	27.90**
DISTRIBUTOR (dummy)	0.16	0.37	0.49	0.51	12.53**
RELEASE (dummy)	0.16	0.37	0.21	0.41	0.27
STAR POWER (dummy)	0.29	0.46	0.57	0.50	6.28**
PRIOR WORK (dummy)	0.16	0.37	0.36	0.48	3.81*

* $p < .05$ level (2-tailed); ** $p < .01$ level (2-tailed)

generally contain fewer reviews, and are overall less positive in their evaluation than newspapers aimed at the mass public (all significant at $p < .01$ level).

4.2 Regression results

We have used multiple regression analyses to test the hypotheses. The correlations between the variables are presented in Table 3. There is a relatively strong correlation between the type of film theatre in which the film is shown and the number of screens on which the film is shown ($r = .65$, significant at $p < .01$ level) where the art house movies are shown on significantly fewer screens than the mainstream movies (see also Table 1). The control variables SCREEN, BUDGET, DISTRIBUTOR, PRIOR WORK, and STAR POWER have a positive and significant correlation with the box office measures. The bivariate correlations between the three review variables (NUMBER REVIEW, SIZE REVIEW and NATURE REVIEW) and the two performance variables (OPENREV and TOTALREV) are all positive and, with the exception of one correlation, significant, indicating that the following multivariate tests will in fact show the potential influence and/or prediction effects of reviews.

Since the number and size of the reviews are highly correlated ($r = .65$, significant at $p < .01$ level, see Table 3) and both measure visibility, we decided to include only one of these variables per model tested. To further reduce multicollinearity, the variables in the interaction have been mean-centered (Baron & Kenny, 1986).

In order to comprehensively test the hypothesis, we first pooled the data and checked the general model, which included assessing the interactions between the review variables and the type of movie together with the control variables. This had the advantage that we could test whether art house movies significantly differed

Table 2 Nature, size and number of the film reviews per newspaper type sampled (in the period 1998–2003)

	Newspapers for mass public		Newspapers for cultural elite		T-Test results
	Mean	S.D.	Mean	S.D.	<i>t</i>
NATURE REVIEWS	2.66	.73	2.48	.76	2.94**
SIZE REVIEWS	15.33	8.13	19.83	8.77	4.61**
NUMBER REVIEWS	6.60	1.92	3.96	.243	-12.45**

** $p < .01$ level (2-tailed)**Table 3** Variables and correlations ($n = 84$)

	1	2	3	4	5	6	7	8	9	10	11
1. STAR POWER											
2. lnSCREEN	0.42**										
3. RELEASE	-0.03	0.21									
4. MOVIE TYPE	-0.27*	-0.65**	-0.06								
5. DISTRIBUTOR	0.10	0.42**	0.08	-0.36**							
6. ln(TOTALREV)	0.43**	0.84**	0.19	-0.50**	0.30**						
7. ln(OPENREV)	0.45**	0.88**	0.13	-0.58**	0.31**	0.94**					
8. ln(BUDGET)	0.20	0.55**	0.23*	-0.39**	0.31**	0.48**	0.47**				
9. NATURE REVIEW (WEIGHTED)	0.11	0.24*	0.06	-0.04	-0.10	0.36**	0.22	0.13			
10. SIZE REVIEW (WEIGHTED)	0.47**	0.69**	0.15	-0.30**	0.31**	0.71**	0.65**	0.44**	0.49**		
11. NUMBER REVIEW (WEIGHTED)	0.42**	0.83**	0.21	-0.49**	0.30**	0.70**	0.78**	0.56**	0.19	0.65**	
12. PRIOR WORK	0.10	0.48**	0.16	-0.21	0.08	0.55**	0.49**	0.39**	0.27*	0.46**	0.42**

* $p < .05$ level (2-tailed); ** $p < .01$ level (2-tailed)

from mainstream movies with respect to the relationship between reviews and performance.

Different interactions between the type of movie and the review variables are significant. With regards to opening weekend, the interaction between the size of the review and the movie type is significant at $p < .05$ level ($t = 2.25$) (see Table 4a); the interaction between the number of reviews and the movie type is marginally significant ($t = 1.79$, $p < .10$) (table not shown). With regards to cumulative box office revenue, the interaction between the size of the review and the movie type is marginally significant at $p < .10$ level ($t = 1.69$) (see Table 4b), while the interaction between the number of reviews and movie type is significant at $p < .05$ level ($t = 1.95$) (table not shown). So the effect of reviews (influence effect or prediction effect) indeed seems to differ according to the type of movie involved. In addition, it is interesting to note that the SCREEN variable is the most important variable in explaining movie performance, as is usually the case in this type of study.

Table 4 Regression analyses: dependent variables: $\ln(\text{OPENREV})$ and $\ln(\text{TOTALREV})$

Variables	Model 1		Model 2	
	Beta	<i>t</i>	Beta	<i>t</i>
<i>ln(OPENREV)</i>				
Constant		5.06**		5.45**
STAR POWER	0.12	1.41	0.11	1.38
$\ln(\text{SCREEN})$	0.43	4.33**	0.50	4.96**
DISTRIBUTOR	-0.03	-0.35	-0.05	-0.59
RELEASE	0.01	-0.16	-0.05	-0.68
PRIOR WORK	0.12	1.39	0.10	1.20
$\ln(\text{BUDGET})$	0.03	0.39	0.01	0.10
SIZE REVIEW (WEIGHTED)	0.24	2.15*	0.30	2.68**
NATURE REVIEW (WEIGHTED)	-0.62	-0.75	-0.06	-0.66
MOVIE TYPE	-0.23	-2.76**	-0.17	-2.04*
MOVIE TYPE * SIZE REVIEW (WEIGHTED)	–	–	0.19	2.25*
MOVIE TYPE * NATURE REVIEW (WEIGHTED)	–	–	-0.01	-0.14
<i>F</i>	17.62		15.78	
Sig. <i>F</i>	.00		.00	
<i>R</i> ²	.71		.74	
Adj. <i>R</i> ²	.67		.69	
<i>N</i>	76		76	
<i>ln(TOTALREV)</i>				
Constant		5.46**		5.70**
STAR POWER	0.10	1.32	0.09	1.28
$\ln(\text{SCREEN})$	0.41	4.52**	0.45	4.87**
DISTRIBUTOR	-0.02	-0.31	-0.03	-0.43
RELEASE	0.03	0.51	0.01	0.20
PRIOR WORK	0.14	1.76t	0.13	1.71t
$\ln(\text{BUDGET})$	0.03	0.38	0.01	0.19
SIZE REVIEW (WEIGHTED)	0.28	2.78**	0.31	3.06**
NATURE REVIEW (WEIGHTED)	0.07	0.95	0.07	0.95
MOVIE TYPE	-0.15	-1.97*	-0.11	-1.49
MOVIE TYPE * SIZE REVIEW (WEIGHTED)	–	–	0.11	1.69t
MOVIE TYPE * NATURE REVIEW (WEIGHTED)	–	–	0.04	0.59
<i>F</i>	22.08		18.65	
Sig. <i>F</i>	0.00		0.00	
<i>R</i> ²	0.73		0.75	
Adj. <i>R</i> ²	0.70		0.71	
<i>N</i>	81		81	

t $p < .10$; * $p < .05$ level (2-tailed); ** $p < .01$ level (2-tailed)

To further explore the interactions, we split our sample into art house and mainstream films.⁸ The results from the regression analyses (see Table 5) show, first, that for art house movies, the coefficient of the SIZE REVIEW WEIGHTED

⁸ We did not include all our control variables in the regressions presented in Table 5 due to the limited number of observations per film type. Excluded are the control variables STAR POWER, PRIOR WORK, and $\ln(\text{BUDGET})$. These control variables are significantly correlated ($p < .01$) with the variable $\ln(\text{SCREEN})$, which we did include. When replacing the control variable $\ln(\text{SCREEN})$ for $\ln(\text{BUDGET})$ or for STAR POWER, these excluded variables were insignificant, while their inclusion/exclusion did not substantially alter the other coefficients. When replacing the control variable $\ln(\text{SCREEN})$ for PRIOR WORK, this control variable was significantly correlated with early and cumulative box office revenue in the case of mainstream films ($t = 2.34$, $p < .05$ and $t = 2.93$, $p < .01$, respectively), and the SIZE REVIEW WEIGHTED variable increased in significance in the cumulative box office regression ($t = 3.86$, $p < .01$).

Table 5 Art House movies versus Mainstream movies

Variables	Art House movies				Mainstream movies			
	ln(OPEN-REV)		Ln(TOTAL-REV)		ln(OPEN-REV)		ln(TOTAL-REV)	
	Beta	<i>T</i>	Beta	<i>t</i>	Beta	<i>t</i>	Beta	<i>t</i>
Constant		9.21**		9.48**		11.65**		11.86**
ln(SCREEN)	0.40	2.01t	0.33	1.82t	0.82	8.36**	0.68	7.07**
RELEASE	0.08	0.53	0.07	0.44	-0.13	-1.65	0.01	0.01
DISTRIBUTOR	-0.06	-0.37	-0.05	-0.37	-0.11	-1.34	-0.08	-0.96
SIZE REVIEW (WEIGHTED)	0.45	2.25*	0.39	1.96t	0.16	1.43	0.26	2.46*
NATURE REVIEW (WEIGHTED)	-0.05	-0.34	0.16	1.03	-0.09	-0.96	0.04	0.44
<i>F</i>	6.79		6.47		23.85		26.55	
Sig. <i>F</i>	0.00		0.00		0.00		0.00	
<i>R</i> ²	0.63		0.56		0.73		0.74	
Adj. <i>R</i> ²	0.54		0.48		0.70		0.71	
<i>N</i>	26		31		50		53	

t $p < .10$ level; * $p < .05$ level (2-tailed); ** $p < .01$ level (2-tailed)

variable is positive and significant with respect to opening weekend revenue ($t = 2.25$, $p < .05$) and only marginally significant ($t = 1.96$, $p < .10$ level) with respect to cumulative box office revenue.

Replacing the SIZE REVIEW WEIGHTED variable with NUMBER REVIEW WEIGHTED, we find similar results: the coefficient of the latter mentioned variable is positive and significant with respect to opening weekend revenue ($t = 2.77$, $p < .01$) and marginally significant with regard to cumulative box office revenue ($t = 1.87$, $p < .10$) (table not shown). In sum, reviews seem to have the following effects on art house film demand:

- No influence and prediction effects with respect to the nature of film reviews
- Influence effects with respect to the number and size of reviews

It is interesting to observe that in the case of art house movies, only the coefficients of the SIZE REVIEW WEIGHTED and NUMBER REVIEW WEIGHTED variables are significant for opening weekend revenue, and less so the coefficients of the NATURE REVIEW WEIGHTED variable. Thus, it seems that with respect to art house film demand, it is primarily mass media coverage that counts but not the favorable or unfavorable tone of the reviews of the film involved.

For mainstream movies, the pattern is different. No significant effects of reviews have been observed on the opening weekend. Reviews thus seem to have no influence effect on mainstream film demand. There is, however, a prediction effect: the SIZE REVIEW WEIGHTED variable is significant for the cumulative box office ($t = 2.46$, $p < .05$). When replacing the SIZE REVIEW WEIGHTED variable with NUMBER REVIEW WEIGHTED, we find similar results: the NUMBER REVIEW WEIGHTED variable has a significant effect on cumulative box office revenue ($t = 2.01$, $p < .05$ level) but not on the opening weekend (table not included). The NATURE REVIEW variable does not explain any variance in any of the regressions. In sum, reviews have the following effects on mainstream film demand:

- No influence effects with respect to the nature, size, or number of reviews
- Prediction effects with respect to the number and size of the film reviews.

Overall, we find support for our basic hypothesis that the effects of reviews differ depending on the type of movie involved. We can conclude that reviews have an influence effect on art house film demand, whereas no such effect occurs in the case of mainstream movies. This, however, only holds true for the size and number of the reviews, but not for their nature.

5 Conclusions

5.1 Summary

In this article, we hypothesized that the nature of the movie may be an important determinant of the effect of reviews on film demand. From a managerial perspective, it seems important to know when influence and/or prediction effects of film reviews are to be expected, so film production companies and distributors can adjust their strategy accordingly. From a theoretical viewpoint, examining explicitly the impact of the “type of movie” on the effect of film reviews on film demand fills a gap in the existing literature.

In this study, we have started from the premise that the nature, the number and the size of film reviews would influence the demand of art house movies, whereas these three factors would only produce a prediction effect in the case of mainstream movies. We tested our hypothesis by assessing the effects of film reviews on the box office performance of mainstream and art house movies, which had their premieres in The Netherlands between early 1998 and late 2003 ($n = 84$). We studied the reviews published in 13 Dutch newspapers during a film’s opening weekend.

As we hypothesized, our regression results show that with respect to mainstream movies, film reviews only have a prediction effect on demand. In the case of art house movies, film critics act as influencers. In particular, the number and size of the film reviews seem to be important variables that influence the early box office revenue of these movies. Since art house movies often have poor signaling properties at their disposal, such as a lack of star power (no popular stars and directors) and a relatively low marketing budget, “selling” the movie to the public can be hard. Getting media coverage by means of film reviews, irrespective of their nature, seems however to play a pivotal role in generating the consumers’ interest in art house movies.

5.2 Implications and limitations

Both Eliasberg and Shugan (1997) and Basuroy et al. (2003) point out that major film studios sometimes forgo advance screenings for critics or avoid inviting uncooperative critics to previews for fear of negative reviews. This suggests that these studios favor positive reviews and dislike negative reviews. Negative reviews, however, seem better than no reviews at all for art house films since the size and number of reviews on art house films directly influences the consumer decision-making process, as our results indicate. We thus suggest that, rather than adopting strategies to avoid negative criticism, as is recommended by e.g. Basuroy et al. (2003), film studios and distributors of art house films should try to persuade critics to write about their movie in the first place. Our results further indicate that film critics appear to be apt predictors of mainstream movie success. As was already suggested by Eliashberg and Shugan (1997), an effective strategy to improve the chances of mainstream

film success may thus be to gauge the reactions of critics before a film is being finalized.

In our article, we examined whether the nature of the film, art house or mainstream, may be an important factor to determine whether film reviews produce influence or prediction effects. Future research may focus on other relevant factors. An example could be the type of film critics involved (famous or not), as was already suggested by Reinstein and Snyder (2005). We have examined the influence effect of reviews by assessing opening weekend box office revenue. However, a relevant question might be whether the individuals who visit a movie during its opening weekend actually have, or have not made their choice on the basis of the reviews, and whether they differ from those who visit the movie later on. This could be further examined in future research.

Our results on the differential impact of film reviews according to film type are similar to those of Reinstein and Snyder (2005) who performed a study on the impact of film reviews in the U.S. film market. We do not, however, know for sure whether Dutch theatre goers are more or less prone to read and/or act on film reviews. Indeed, a large-scale, cross cultural study on the impact of film reviews would be necessary to determine whether or not there are indeed no differences in the effect of film reviews based on national culture.

Our empirical setting was the Dutch film industry. As a result, the movies in our database, including the mainstream ones, are relatively minor in terms of budget, number of screens, and box office revenue, compared to the major Hollywood productions. However, this does not mean that we could not make a clear distinction between Dutch art house and Dutch mainstream films. Adopting the approach of Zuckerman and Kim (2003), we made the boundary between art house and mainstream movies visible by looking at the market identity of the Dutch film theaters in which the films sampled were released. These Dutch film theaters have a clear market profile: they show either art house or mainstream films. In other countries, however, this may not be the case and using film theatres as a way to distinguish between the two types of film would not be appropriate. However, one of the other main players in the industry, namely distributors and/or film producers, may still have a clear identity and could be used instead. Another important aspect that may be unique for the Dutch film market, is the important role of Dutch newspapers in the diffusion process of film reviews. Dutch newspapers are so important because of the relatively high circulation rate, the lack of weekly film magazines that are widely read, and the lack of well-watched television shows in which film critics discuss newly released films. For the Dutch film market, a study of Dutch newspapers for establishing the role of film reviews thus seems justified, but in other countries other media outlets might be of more importance.

Our research includes different control variables that may affect box office revenue next to film reviews. We were, however, unable to control for advertising expenditure due to lack of data. Although this is a limitation of our study, we would like to point to the findings of Elberse and Eliasberg (2003). They found that the positive relationship between advertising expenditure and opening-week revenues is largely due to a second positive correlation, namely that between advertising expenditures and the screens allocated to a movie in its opening week. This suggests that screens, included as a variable in our study, may act as a crude proxy of advertising expenditure.

Although we tested our hypothesis in one type of industry only, namely the motion picture industry, we believe the results may be applicable to other cultural industries with a two-tiered industry structure in which consumers are unable to assess product quality before consumption. Examples are music recording and book publishing: in both these industries the labels “major” and “independent” appear (e.g., Peterson & Berger, 1975 for the music industry and Miller, 1995 for book publishing) and reviews seem to play an important role in consumer decision making (e.g., Cameron, 1995 for music recording, and Verdaasdonk, 1987 for book publishing).

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6 Appendix 1

6.1 Dutch newspapers sampled

The names of the 13 Dutch newspapers included in our sample and the yearly circulation figures for the period 1998–2003 (the sampled time frame) can be found in Table 6. We included the five largest national (paid) newspapers. The circulation of these (paid) newspapers represents, on average, 95% of the total circulation of (paid) national newspapers in the period 1998–2003. We included six newspapers

Table 6 Circulation of newspapers sampled in 1998–2003^a

Title newspaper	Circulation					
	2003	2002	2001	2000	1999	1998
<i>Nation newspapers (paid)</i>						
De Telegraaf	747	767	779	782	783	777
De Volkskrant	320	326	333	343	350	347
Algemeen Dagblad	296	314	330	353	363	390
NRC Handelsblad	259	265	264	266	268	266
Trouw	117	124	128	125	114	112
<i>National newspapers (free)</i>						
Metro	303	345	370	300	270	^b
Sp!ts	352	325	325	294	245	^b
<i>Regional newspapers (paid)</i>						
Dagblad De Limburger	228	235	239	244	250	255
De Gelderlander	193	190	202	163	165	168
Dagblad van het Noorden	173	180	182	186	188	193
Haagsche Courant	103	108	113	117	121	128
Rotterdams Dagblad	98	101	101	102	104	104
Het Parool	86	87	89	89	89	^c

Sources: www.HOI-online.nl; www.persmediamonitor.nl

^a Circulation figures include: subscriptions and newspaper sales at retail outlets plus distributed free samples

^b Newspaper not yet released on the Dutch market (on the market since 21 June 1999)

^c Circulation not known

Table 7 Film review policy of the 13 Dutch newspapers sampled (in 1998–2003)

Title newspaper	Circulation: paid—free	Target group	Geographic focus	Use of star ranking	Policy on size of film review
De Telegraaf	Paid	Mass public	National	No	Reviews of art house movies are significantly shorter in size (see Table 8)
Algemeen Dagblad	Paid	Mass public	National	Yes	No minimum or maximum number of words pre-determined by chief film editor The size of the film review is mainly dependent on the perceived commercial value of the film
De Volkskrant	Paid	“Cultural elite”	National	No	Reviews of art house movies are significantly larger in size (see Table 8) No minimum or maximum number of words pre-determined by chief film editor The size of the film review is in part dependent on the perceived quality of the film and in part on the perceived commercial value
NRC Handelsblad	Paid	“Cultural elite”	National	No	Reviews on art house movies are not significantly larger in size (see Table 8)
Trouw	Paid	“Cultural elite”	National	No	No minimum or maximum number of words pre-determined by chief film editor The size of the film review is mainly dependent on the perceived quality of the film
Metro	Free	Mass public	National	No	Reviews on art house movies are significantly shorter in size (see Table 8)
Sp!ts	Free	Mass public	National	No	No minimum or maximum number of words pre-determined by chief film editor
Dagbl. De Limburger	Paid	Mass public	Regional	No	The size of the film review is mainly dependent on the perceived commercial value of the film.
Haagsche Courant	Paid	Mass public	Regional	No	
Rotterdams Dagblad	Paid	Mass public	Regional	No	

Table 7 continued

Title newspaper	Circulation: paid—free	Target group	Geographic focus	Use of star ranking	Policy on size of film review
De Gelderlander	Paid	Mass public	Regional	No	Reviews on art house movies are significantly shorter in size (see Table 8)
Dagblad v/h Noorden	Paid	Mass public	Regional	No	No minimum or maximum number of words pre-determined by chief film editor The size of the film review is in part dependent on the perceived quality of the film and in part on the perceived commercial value
Het Parool	Paid	“Cultural elite”	Regional	From mid 2000 onwards	Reviews on art house movies are not significantly different in size (see Table 8) No minimum or maximum number of words pre-determined by chief film editor The size of the film review is in large part dependent on the perceived quality of the film

Table 8 Average size of the film reviews per movie type and per newspaper sampled (in 1998–2003)

	Average size of the films reviews (cm ²)				
	Art House movies		Mainstream movies		ANOVA results
	Mean	S.D.	Mean	S.D.	<i>F</i>
<i>Nation newspapers (paid)</i>					
De Telegraaf	17.16	13.27	23.72	17.51	3.25†
De Volkskrant	26.52	20.26	18.83	10.42	5.28*
Algemeen Dagblad	13.15	10.14	20.77	16.51	5.41*
NRC Handelsblad	21.47	10.03	18.56	10.65	1.53
Trouw	17.69	11.24	17.00	9.77	0.88
<i>National newspapers (free)</i>					
Metro	3.23	5.05	13.98	16.47	12.47**
Sp!ts	5.02	9.27	12.40	14.15	6.72**
<i>Regional newspapers (paid)</i>					
Dagblad De Limburger	4.39	12.02	12.51	14.44	6.97**
De Gelderlander	15.70	11.49	21.14	13.03	3.72*
Dagblad van het Noorden	11.84	14.33	20.27	15.5	6.10**
Haagsche Courant	7.68	9.96	20.61	12.12	25.30**
Rotterdams Dagblad	14.10	13.25	19.35	10.39	4.07*
Het Parool	19.42	13.65	21.57	13.17	.506

† $p < .10$ level; * $p < .05$ level (2-tailed); ** $p < .01$ level (2-tailed)

with a regional focus. We randomly sampled these regional newspapers from a list representing the top 15 regional newspapers in terms of circulation. The circulation of these regional (paid) newspapers represents, on average, 39% of the total circulation of the (paid) regional newspapers in the period 1998–2003. Finally, we included the two national newspapers distributed for free.

In Tables 7 and 8 we describe the film review policies of the 13 Dutch newspapers sampled. The source of the information in the tables is twofold: (1) our own observations by studying the relevant film pages in the period 1998–2003 and (2) telephone interviews with film critics working for the newspapers sampled. The fifth column of Table 8, presenting the ANOVA results, shows that in the case of 10 of the 13 newspapers sampled, there is a significant difference in the size of the reviews of art house versus mainstream movies.

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