

Full Length Research Paper

Mediating effect of word-of-mouth in movie theatre industry

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This study examines the role of word-of-mouth in the movie theatre industry. Word-of-mouth is tested as a mediator between pre-release studio actions (stars, production budget, and number of screens) and box office revenue. The results suggest that word-of-mouth fully mediates the relationship between stars and box office revenue. A partial mediation of word-of-mouth occurs in case of production budget and number of screens as pre-release actions leading to box office revenue. This study emphasizes the importance of word-of-mouth in contributing and maintaining movie revenue, and also helps movie makers to take decisions on investing on word-of-mouth after releasing a movie.

Key words: Word-of-mouth, pre-release, post-release, movie theatre industry, stars, box office revenue, product budget, number of screens.

INTRODUCTION

Word-of-mouth (WOM), which is a form of exchange between two or more customers regarding information about different products or services, has become an issue of interest for marketers and researchers as potential substitute for traditional commercial advertisements, which are no longer that attractive and appealing because of the rising competition.

WOM is different from the traditional advertising due to the reason that it imparts more credibility to customers as customers trust other customers more than any other sources of information. Customers are influenced by WOM for their purchasing decisions because they perceive WOM as guidance from other customers who are also dealing with similar situations (Beck, 1992).

Researchers in the past (Mahajan et al., 1984) have found WOM to be mainly powerful when customers are making buying decisions about the products/services that are new in the marketplace and customers are only aware of those products/services but do not know well about them.

By nature, movies are a type of service that display characteristics much alike those of products/services that are newly released. For example, a newly released product/service is campaigned by ads so that the customers have some set expectations about the product/service performance before using them, but they do not know how those products/services are going to perform in reality after using/experiencing them.

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In the same way, audience have some set expectations from a movie developed through its trailer, and in some cases because of the known actors, directors, etc. working in/for the movie, but they do not know what is exactly in the movie unless they watch it. Several studies also have shown in the past that WOM has a notable effect on the selection of movies that customers make to watch (Bayus, 1985; Faber and O'Guinn, 1984; Neelamegham and Chintagunta, 1999). WOM information is spread easily amongst customers these days due to the availability of social networks (Benerjee, 1992; Brown and Reingen, 1987; Murray, 1991), and hence attainability of WOM has immensely increased because of the brisk development of internet and its use. WOM is accessible nowadays through diverse channels like social networking sites, blogs, online forums, or purchase reviews available on respective online buying websites. Customers not only use a lot of websites to gather information about different products/services, but also use them as forums to exchange information, which in turn influences buying decisions of other customers. In the past, online product ratings have been shown as a tool for revenue forecasting of new experience goods (Dellarocas et al., 2005). Existing studies have inferred WOM as an independent construct affecting box-office revenue (Bae and Kim, 2013; Moul 2007).

However, a more pragmatic situation is that the box-office revenue is generated by studio (pre-release) actions, and mediated by WOM. Alternatively, several studies have been conducted in the movie industry to study the sources of box office revenue, initiated by the studio itself. Even when extant research shows that there are various factors (like star power, movie buzz, advertising, production budget) that are significantly associated with performance of movies, it becomes hard to determine the direction of causality since the studies do not take into consideration the pre and post release factors at the same time while obtaining causality.

Current study focuses on pre-release, and post-release factors as they relate to box office revenue. The main objective of the study is to examine the potential role of WOM (post-release) as a mediator between pre-release actions and box office revenue. The findings of this study will provide movie-makers with an additional platform to focus on, while advertising their movie.

Theory and hypotheses

Word-of-mouth (WOM)

Definitions of WOM have always been adopted differently by different researchers, but all of them accept that WOM consists of oral interpersonal communication. According to Zaltman and Wallendorf (1979), WOM communication is a non-profit interpersonal exercise that involves an explicit transfer and attainment of information through

discussion or conversation.

WOM has also been defined as a form of advertising communication where the recipient of the advertisement becomes sender of the information for others looking for such information (Aaker and Myers, 1982). According to Ritchins (1983), WOM is a practice in which exchange of information about a product, that is available in the marketplace, takes place.

Communication through WOM is regarded as a more credible information source as compared to the traditional commercial advertisements. This is due to the reason that in case of WOM, the information about products and services is provided by someone who just wants to share his/her thoughts and judgement about the products/services, rather than promoting corporate interests (Silverman, 2001).

In particular, for using newly-released products/services, which can be riskier due to deficiency of information, WOM plays an important and larger role than any other situation (Mahajan et al., 1984). The reason behind this is again the credibility of information that WOM provides that reduces the risks accompanying the customer's buying decisions.

It is well known that movie industry is a highly risky but high return generating industry. Numerous studies have confirmed that 6 to 7 out of 10 movies released yield returns less than profitable (Liu, 2006; Vogel, 2014). Majority of profits, for even big production and distribution organizations, are attained from a very few blockbuster movies, due to which, they are forced to increase their investment on advertisement (Eliashberg et al., 2006). Due to the nature of the movie industry, a lot of studies have been done on numerous aspects that impact movies success, and WOM has been found to be an important factor for the success of a movie. Various researchers have studied the volume and valence of WOM, and have been regarded as its most important characteristics (Mahajan et al., 1984; Neelamegham and Chintagunta, 1999).

Duan et al. (2008) in their study, used panel data from two weeks of a movie release to analyze the relationship between audience scores and box office revenue. They found that the volume of WOM had a significant impact on box office revenue whereas the audience scores did not.

In a similar study, Liu (2006) showed that when the expectations from a movie are higher before release, the valence of WOM is higher before release as compared to after the release. He found out that the valence of WOM did not have a significant impact on box-office revenue.

On the contrary, Moon et al. (2010) found box-office revenue to be expending a positive impact on the valence of the WOM provided by regular customers, whereas when advertisements were operated at the same time, the effect of WOM, provided by professional critics and audience scores combined, had a significant impact on box office revenue.

According to Chintagunta et al. (2010), the valence of WOM is the factor that influences the box office revenue and not the volume. Figure 1 shows the model of WOM as a mediator between pre-release actions and box office revenue.

Stars

Stars have been defined in numerous ways in the literature. Bing (2002) holds that stars are required to guarantee a strong theatrical opening. However, Goettler and Leslie (2004) suggest a star to have one out of the following two conditions:

1. One who has acted with “top 4 billing in more than 12 films earning \$5 million or more in US box office since 1970”.
2. One who has “directed, produced, or wrote more than 20 films earning \$5 million or more, since 1970.”

On the other hand, Ravid (1999) suggests that the stars can be categorized on the basis of two types of reputation which can be considered as the source of star power. One of them would be economic reputation, which can be attained from the box office success of those stars, and the other would be artistic reputation, which can be attained from the appreciation of critics or their associates, for example, having been nominated for or having won an Academy Award or having participated in a top-grossing movie last year (Delmestri et al., 2005).

Movie stars’ future potential is reflected in their historical box office record (Lampel and Shamsie, 2003; Ravid 1999), and this record is found to have been used by studio executives as a valued information source (Chisholm, 2004). Movie stars’ reputation is exposed generally through awards and nominations, and the audiences, media, executives, and other parties consider it to be a signal of quality (Wallace et al., 1993), and hence makes it plausible to consider those as a predictor of stars’ future box office performance.

The current study takes into consideration the economic reputation (Ravid, 1999) of the stars based on the total gross for each of the top three leading stars of a movie. We think it is reasonable to contemplate this view because the economic status of an actor speaks about his/her success in the industry, which portrays his/her star power.

Effect of star power on box office revenue has been studied extensively in the past. However, researchers have found conflicting results for the empirical studies of star power on box office revenue. Some of the studies could not detect a relationship between talent involvement and revenues (Austin, 1989; De Vany and Walls, 1999; Litman 1983), and some could prove that depending on the rank of the star associated with a particular movie, its revenues (cumulative, weekly, or opening week) change

(Ainslie et al., 2005; Basuroy et al., 2003; Faulkner and Anderson, 1987).

According to Smith and Smith (1986), getting an award was considered to be negative for a movie back in 1960s, whereas it was/is considered positive from 1970s. Prag and Casavant (1994) showed that in some of their samples, stars had a positive impact on a movie’s financial success, but not in others.

De Silva (1998) found stars to play an important role in audiences’ decision of watching a movie but did not find them to have an impact on a movie’s financial success. Despite the fact that star power is considered to be an ambiguous construct, current study takes into account this variable, with an expectation to find the solution as it is supposed that something is missing in the relationship considered in the past between stars and box office revenue, which is believed to be WOM. On the basis of above arguments, the following is proposed:

H1: WOM mediates the positive relationship between value of stars working in a movie and its box office revenue.

Production budget

Most of the movies are released only after thorough advertising efforts. Production budget takes into account the advertising required for a movie, commonly through television or/and newspaper, and it generally accounts for 50% of the total budget (Vogel 2014).

Advertising provides information to audiences about the release date, brief storyline, main cast, and the place of movie release. Though production budget, leading to advertising, may generate revenue in the beginning of movie release, but once a few audiences watch the movie, WOM comes into play. Since WOM is generated by others who have watched the movie previously, it may be thought to be as more accurate than traditional advertising (Faber and O’Guinn, 1984).

Hence, though a plenty of information is provided in advertisements of a movie, yet WOM may still be recognized as a useful source of information and thus play the role of a mediator between production budget and box office revenue. Hence, the following is hypothesized:

H2: WOM mediates the positive relationship between production budget and box office revenue for a movie.

Number of screens

In the past, studies have shown the number of screens, on which the movie was initially launched, having an impact on a movie’s financial success (Jones and Ritz, 1991; Neelamegham and Chintagunta, 1999). Elberse

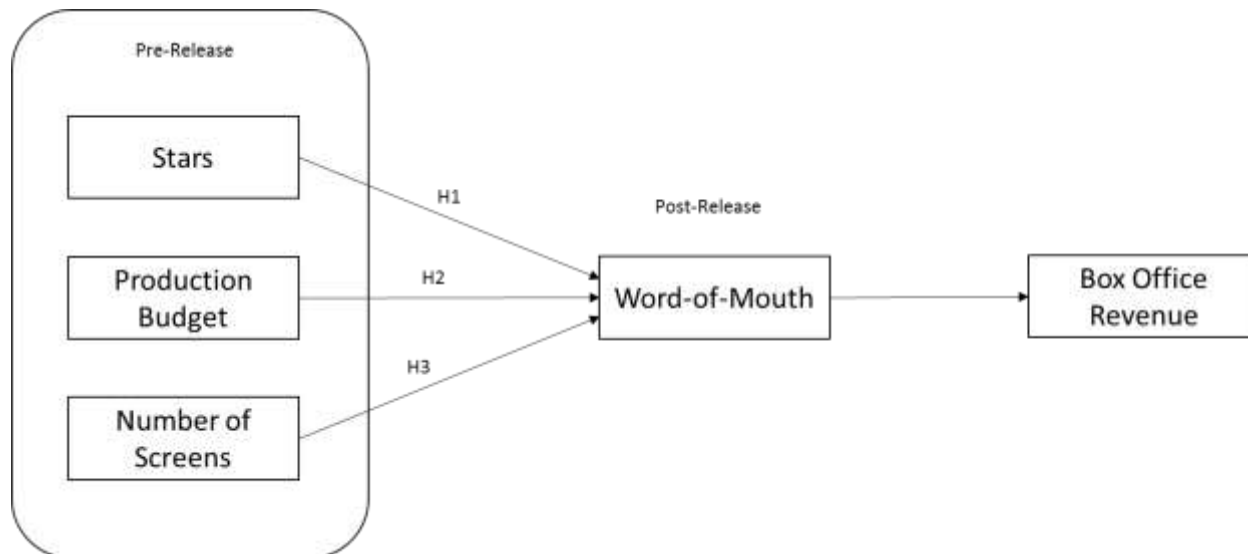


Figure 1. WOM as a Mediator for Box Office Revenue.

and Eliashberg (2003) found out that the number of screens designated to launch a movie heavily influences box office revenue. It seems plausible that the more the number of screens a movie is released on, the more chances are for people to watch the movie and thus the WOM will get spread to a wider audience and quickly.

H3: WOM mediates the positive relationship between number of screens a movie is released on and its box office revenue.

METHODOLOGY

Data and measures

A sample of top 102 domestic movies released in the year 2015 was used. Data for the following variables was collected: stars, number of screens, production budget, and domestic box office revenue. All these variables were operationalized by converting them into interval scale. The number of screens, production budget (\$), and domestic box office revenue (\$) data was collected from imdb.com and the-numbers.com.

Data for stars was obtained from boxofficemojo.com, and total gross for each of the leading stars (top 3) of a movie was taken and then averaged. For example, for the movie "The Dark Knight", total gross (in million dollars) of the top three leading stars: Christian Bale (\$2207.6), Heath Ledger (\$955.6), and Aaron Eckhart (\$1314.4) was taken and averaged (\$1492.53) for this movie.

To measure word-of-mouth, data for the three following items was collected and averaged: ratings by critics, eWOM, and opening weekend moviegoers poll (OWMP). Data for critic ratings was obtained from metacritic.com, data for eWOM and OWMP was drawn from imdb.com, and cinemascore.com, respectively. OWMP data was obtained in terms of letter scores (that is, a movie's overall score could range from A+ to F). These letter scores were converted into numerical scores ranging from 0 to 100, by dividing them into 17 equal parts. For example, a movie getting a score of A+ was converted into 100, a score of A was converted into

94.12, a score of A- was converted into 88.24, and so on.

RESULTS

A simple linear regression was conducted to predict the mediation effect of WOM, one by one, on the relationship between pre-release actions (stars, production budget, and number of screens) and box office revenue. Also, the complete model was tested using multiple regression, taking WOM as an independent variable with other independent variables, and testing their combined effect on box office revenue. Descriptive statistics are presented in Table 1. Four steps suggested by Baron and Kenny (1986), and Zhao et al. (2010) were followed for each of the variables to test for mediation. Tables 2, 3, and 4 show results of regression analyses for stars, production budget, and number of screens, respectively.

WOM as a mediator between stars and box office revenue

In Step 1 of the stars mediation model, the regression of box office revenue on stars, ignoring the mediator WOM, was significant ($\beta = 0.232$, $t = 2.225$, $p < 0.05$). Step 2 showed that the regression of the mediator, WOM, on stars was also significant ($\beta = 0.274$, $t = 2.660$, $p < 0.05$). Step 3 of the mediation process showed that the mediator, WOM, controlling for box office revenue, was significant ($\beta = 0.568$, $t = 6.286$, $p < 0.05$). Step 4 of the analyses revealed that, controlling for the mediator, WOM, box office revenue was not a significant predictor of stars ($\beta = 0.076$, $t = 0.846$, $p > 0.05$). It was found that WOM fully mediated the relationship between stars and

Table 1. Means, standard deviation, and correlations of all variables.

Variable	Mean	SD	1	2	3	4	5
X1 Box office revenue	23.363	26.240	**	-	-	-	-
X2 Word-of-mouth (WOM)	46.099	10.881	0.561**	**	-	-	-
X3 Numbers of screens	7.127	1.968	0.669**	0.439**	**	-	-
X4 Stars	4.933	2.315	0.232*	0.274**	0.183	**	-
X5 Production budget	22.070	21.165	.712**	0.408**	0.661**	0.212	**

Note: The correlation matrix represents a pairwise correlation matrix (*P <0.05, **p <0.01).

Table 2. Linear regression analysis stars.

Path	Unstandardized coefficients		Standard coefficients		
	B	Std. Error	Beta	t	Sig.
Revenue →stars	2.713	1.219	0.232	2.225*	0.029
WOM→ stars	1.228	0.461	0.274	2.660**	0.009
Revenue→ WOM	1.483	0.236	0.568	6.286***	0.000
Revenue→ WOM x stars	0.893	1.056	0.076	0.846	0.400

*p < 0.05; **p < 0.01***; p < 0.001.

Table 3. Linear regression analysis: Production budget.

Path	Unstandardized coefficients		Standard coefficients		
	B	Std. Error	Beta	t	Sig.
Revenue →production budget	0.887	0.088	0.712	10.042***	0.000
WOM→ production budget	0.211	0.048	0.408	4.422***	0.000
Revenue→ WOM	0.774	0.171	0.321	4.529***	0.000
Revenue→ WOM x production	0.723	0.088	0.581	8.193***	0.000

***p < 0.001.

box office revenue.

WOM as a mediator between production budget and box office revenue

In Step 1 of the production budget mediation model, the regression of box office revenue on production budget, ignoring the mediator WOM, was significant ($\beta = 0.712$, $t = 10.042$, $p < 0.05$). Step 2 showed that the regression of the mediator, WOM, on production budget was also significant ($\beta = 0.408$, $t = 4.422$, $p < 0.05$). Step 3 of the mediation process showed that the mediator, WOM, controlling for box office revenue, was significant ($\beta = 0.321$, $t = 4.529$, $p < 0.05$). Step 4 of the analyses revealed that, controlling for the mediator, WOM, box office revenue was still a significant predictor of production budget ($\beta = 0.581$, $t = 8.193$, $p < 0.05$), but the prediction was relatively less as compared to as it was

before controlling for mediator. It was found that WOM partially mediated the relationship between production budget and box office revenue.

WOM as a mediator between number of screens and box office revenue

In Step 1 of the number of screens mediation model, the regression of box office revenue on number of screens, ignoring the mediator WOM, was significant ($\beta = 0.669$, $t = 8.993$, $p < 0.05$). Step 2 showed that the regression of the mediator, WOM, on number of screens was also significant ($\beta = 0.439$, $t = 4.886$, $p < 0.05$). Step 3 of the mediation process showed that the mediator, WOM, controlling for box office revenue, was significant ($\beta = 0.331$, $t = 4.348$, $p < 0.05$). Step 4 of the analyses revealed that, controlling for the mediator, WOM, box office revenue was still a significant predictor of number

Table 4. Linear regression analysis: Number of screens.

Path	Unstandardized coefficients		Standard coefficients		
	B	Std. Error	Beta	t	Sig.
Revenue → Number of screens	8.914	0.991	0.669	8.993***	0.000
WOM → Number of screens	2.427	0.497	0.439	4.86***	0.000
Revenue → WOM	0.799	0.184	0.331	4.348***	0.000
Revenue → WOM x Number of screens	6.974	1.016	0.523	6.865***	0.000

***p < 0.001.

Table 5. Summary of regression: Complete model.

Variable	B	SE B	β
(Constant)	-44.438	9.436	-
WOM	0.639	0.185	0.265**
Stars	0.232	0.788	0.020
Production budget	0.522	0.112	0.421***
Number of screens	3.600	1.218	0.270**
R ²	-	0.634	-
F	-	35.931***	-

p < 0.01; *p < 0.001.

of screens ($\beta = 0.523$, $t = 6.865$, $p < 0.05$), but the prediction was relatively less as compared to as it was before controlling for mediator. It was found that WOM partially mediated the relationship between number of screens and box office revenue.

Effect of all pre-release variables and post-release variable on box office revenue (complete model)

Multiple regression was calculated to predict box office revenue based on all the pre-release variables (stars, production budget, and number of screens), and post-release variable (WOM). Summary of the analysis is provided in Table 5. A significant regression equation was found ($F(4,83)=35.931$, $p<.05$), explaining 63.4% of variance. Out of the four independent variables, production budget, number of screens, and WOM are predictive of box office revenue; whereas stars are not predictive of box office revenue.

Conclusion

Although prior research has studied the factors leading to box office revenue, and WOM has also been studied as an independent variable impacting the revenue; it remains unclear which pre-release variables have an impact on the post-release variables (WOM here), and what is the sequence that is followed.

Taking a step toward closing the gap, WOM was tested as a mediator between pre-release actions and box office revenue. It was found that WOM acts as a mediator between all the pre-release actions taken into consideration in this study (stars, product budget, and, number of screens) and the box office revenue.

WOM fully mediated the relationship between stars and box office revenue; and partially mediated the relationship between production budget and box office revenue; and also between number of screens and box office revenue. This result was also supported by taking complete model into consideration. Stars showed an insignificant relationship with box office revenue, whereas the other two pre-release factors (production budget, and number of screens), and also post-release action (WOM) showed a significant relationship with box office revenue.

Though 'Hollywood is the land of hunch and the wild guess' (Litman and Ahn, 1998) because it is difficult to have an accurate prediction of the box office revenue, yet numerous researchers have tried to predict the box office revenue after a movie's initial release (Litman, 1983; Litman and Ahn 1998; Sawhney and Eliashberg, 1996).

The current study is an attempt to acknowledge the factors that contribute toward this prediction. The results of this study suggest that there is a need to recognize the importance of WOM as a medium of communication between audience and it is important to manage it more efficiently. Movie industries invest huge amounts of money in advertising and promoting their movies and create awareness through traditional commercial advertising.

However, less (if any) efforts are put by these film studios on WOM as a marketing communication. Since the current study shows that WOM mediates the relationship between pre-release actions and box office revenue, these studios need to target more of their efforts on WOM which might turn out to be more efficient than the traditional advertisements. One way to attain this may be to collect initial audience feedback and focus marketing efforts on those audiences who portray higher levels of WOM activity.

The current study has several limitations. The validity of the results of this study are limited to a very low sample size, and whether the same applies to the complete data is a subject for further research. Also, future studies

should perform analysis taking into account the other pre-release actions such as genre, release time, advertising budget and sequel/prequel too.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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