Still Waiting for Olivia Pope and Wonder Woman: An event data analysis on the effects of emotional contagion in movies starring women and actors of colour

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Abstract  Emotional contagion, also known as word-of-mouth (WOM), is defined as the emotional essence of one person that can be passed on to another person and influence attitudes about an object and/or a product. In the context of motion pictures, how does emotional contagion/WOM travel regarding movies starring women and/or actors of colour? It is observed that Hollywood studios often pull movies out of cinemas before positive WOM/emotional contagion has time to spread, especially regarding those films starring women and actors of colour. Using event data analysis, this paper takes a macro view of this phenomenon by examining the take-offs of movies starring women and actors of colour.

KEYWORDS: emotional contagion, word-of-mouth, movies, women, actors of colour

‘Maybe because I have seven nieces whose dreams matter to me, maybe because I have so many female friends whose talents dazzle me, or maybe just because I think its madness not to encourage and recognize the full potential of half of the human race,
I keep looking to the movies for something better. For something more equitable. For women saving the world or saving the president or at the very least saving themselves.1

INTRODUCTION

Hollywood has yet to embrace women and actors of colour equally as consistent leads in movies. Well-known movie critic, Richard Corliss, believes that Hollywood should embrace the concept of having more women and actors of colour as box office drivers:

‘Women go to see movies about men (because what other kinds are there?) and African Americans buy perhaps a fifth of all film tickets sold in the US. There’s room for modestly budgeted comedies and dramas about the black experience. The Jackie Robinson 42 (US$95 million domestic gross) and Lee Daniels’ The Butler (US$115 million) showed the broad appeal of inspirational biopics. Closer to the Holiday vibe was last year’s Think Like a Man, Steve Harvey’s genial relationship comedy that opened to US$33.6 million and earned US$91.5 million before it was done. If (Best Man) Holiday can match the Harvey picture’s earning, even myopic Hollywood moguls should begin greenlighting more movies to please this underserved audience.2

Movies have very short life cycles in cinemas and movie marketers work tirelessly to promote their projects with the goal of achieving a profitable opening weekend. It is widely accepted in the industry that movies tend to enjoy their highest sales figures during the first week and decline afterwards. An influential variable that has been shown to have a strong effect on sales performance during its opening week is word-of-mouth (WOM).3 Hollywood believes that WOM strongly influences people’s movie selections.4 Moreover, analysis of quantitative research indicates that when including WOM in the forecasting of a movie’s profitability, forecasting errors for a movie’s opening week box office sales are reduced by 31 per cent.5

McKinsey and Co. suggests that WOM is the most disruptive force in marketing.6 According to Keller and Fay, 75 per cent of all consumers’ conversations about brands happen face-to-face, 15 per cent happen over the phone, and 10 per cent take place online. Moreover, 58 per cent of consumers ascribe high credibility to the information they hear from others during a WOM conversation. At the same time, 50 per cent report that they are very likely to buy a product or service as a direct result of that conversation. In the USA alone, it is estimated that around 15 billion brand impressions every week can be attributed to WOM.7

Marketing scholars and practitioners define WOM in various ways. According to Liu, WOM is the ‘buzz’ surrounding the communication of information among consumers about products and services. Similarly, Moul defines WOM as the transmission of information among consumers. There is a clear distinction between WOM between consumers and manufactured WOM, the latter falling under the umbrella of ‘hype’.8

Most literature on the motion picture industry consistently illuminates the fact that WOM plays a significant role in how well a movie performs at the box office. To this end, movie distributors rely on tools such as advertising, promotions, movie reviews by critics, public relations and information transmissions among consumers to influence positive WOM.9 The timing of the deployment of these tools and tactics plays a significant part in the generation of positive WOM. As Moul notes, however, many of the variables that influence WOM hinge upon how consumers share information.10 WOM involves consumers telling a certain number of friends about a movie’s true quality or essence, but such communication is generally
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restricted to the period that the movie is still showing in cinemas, thus placing a special emphasis on the length of the movie’s run.\textsuperscript{11} Given this fact, are Hollywood studios being too hasty in pulling movies starring women and actors of colour from cinemas?

WOM is also known as emotional contagion. Howard and Gengler define emotional contagion as the emotional essence of one person that can be passed on to another person and influence attitudes about an object and/or product.\textsuperscript{12} Moreover, the cues involved in emotional contagion, from the tone, style and articulation of a communications message to the delivery channel of the message (eg online, text message, face-to-face), and the source of the sender, are aspects of WOM that many researchers continue to state need more exploration. The present study therefore serves as the preliminary research for consumer lab experiments to see from a macro perspective whether WOM/emotional contagion has a positive influence on movies that star women and actors of colour. By looking at box office sales numbers, event data analysis can be used to understand better the ‘take-off’ of a movie’s performance when women and/or actors of colour are the key drivers. This exploration will begin with presenting the theoretical framework and literature looking at motion picture influences on the box office, along with support of WOM/emotional contagion. After reviewing the literature, the data sources will be described and the approach for identifying movie take-off times outlined. Finally, the paper will conclude with a discussion of future directions, along with the potential contributions and proposed managerial implications of this research.

LITERATURE REVIEW

Hollywood studio executives and their teams must always forecast how well a movie will perform. These decision makers use historical data, along with information such as the stars of the movie, the genre, etc, in an effort to forecast the market entry and marketing mix for the film.\textsuperscript{13} When it comes to the influence of a movie’s leading man or woman, the literature in this area is mixed. Some scholars recognise the significant financial impact that stars have as box office drivers throughout the motion picture industry.\textsuperscript{14} Ravid, for example, discusses how a movie’s box office performance is influenced by the starring actors’ economic and artistic reputations\textsuperscript{15} — the former measure being based on the historical box office performance of the star’s movies, and the latter referring to the star’s artistic reputation in terms of awards or nominations garnered. In addition, some studies find no correlation between revenues and star involvement.\textsuperscript{16}

According to the literature, the length of time that a distributor will keep a movie in cinemas is highly dependent upon the spread of positive WOM, as well as the timing of the deployment of the advertising and promotional activities.\textsuperscript{17} Nevertheless, it appears that a better understanding of the influences of WOM — ie what is actually being said about a movie, as well as the channels through which the message travels — is ultimately crucial to understanding a movie’s profit potential.

WOM and diffusion theory

When looking at the role that a new movie has in the marketplace, essentially, new entrants are introduced weekly and, at the same time, a new entrant can immediately become an incumbent.\textsuperscript{18} With this type of industry practice and infrastructure, diffusion takes place each week, as information on the innovation (ie the new movie entrant) is being communicated through certain delivery channels over time among members of a social system.\textsuperscript{19} Moreover, diffusion theory involves a special type of communication where messages are concerned with new ideas.\textsuperscript{20}
Within this idea of diffusion theory, emotional contagion can essentially be considered to be part of the communications transmission within the social network. Hatfield et al. define emotional contagion as the tendency to instantly mimic and synchronise movements, expressions, postures and vocalisations from sender to receiver at the same time and come together emotionally. Furthermore, mimicry can serve as a tool for empathic communications or obtaining attention, and is facilitated by the perceived interrelatedness of the relationship. Emotional contagion should then vary as a function of interpersonal liking, as mimicry should similarly vary by liking. It is therefore believed that emotional contagion fundamentally explains the effectiveness of WOM.

In addition, within the diffusion theory framework, communications is defined as a process by which the sender and receiver share information with the goal of achieving mutual understanding. Participants in the communications process can exchange information in a linear manner when one wants to persuade another to adopt an innovation.

**WOM on macro and micro levels: Strong vs weak ties**

Brown and Reingen articulate that WOM is a widely accepted notion in consumer behaviour for its significant role in shaping consumers’ attitudes and behaviours towards products and services. The authors describe how formal studies by Katz and Lazarsfeld found WOM to be an important source of influence in the purchase of household goods and food products, while Feldman and Spencer found that two-thirds of new residents in a particular community relied on WOM to select a physician. Brown and Reingen also describe how research by Ardnt showed that those who received positive WOM regarding food products were more likely to purchase them compared with those who received negative WOM.

Brown and Reingen suggest that within a network analysis, WOM referral behaviour effectively operates at two levels, namely, macro and micro. These levels involve the concepts of relational content and relational forms. Relational content is described as a substantive type of relation represented in the connections among individuals and relates to which messages are transmitted from one consumer to another. Relational forms are the properties of the connections between pairs of actors that exist independently of specific contents. On a macro level, the relational ties are weak and allow for information to travel from senders to receivers in a broader social system. On a micro level, strong and homophilous ties can exist and greatly influence the referral information from sender to receiver.

On each of these levels, the strength of the tie can make a difference regarding how WOM is sent and how WOM is received. Homophily is described as the degree to which pairs of individuals are similar in regards to certain characteristics (eg age, sex, education, social status). A primary tenet of homophily human interaction is that people tend to interact with others who are like themselves. This concept is also known as the ‘me principle’. Hence, the stronger the tie that binds two individuals, the more similar they are.

On the opposite end of the spectrum, weak ties can be defined as heterophilous. This type of communication facilitates the flow of information among diverse segments of a social system. Weak ties can also influence positive WOM.

**EXPLANATION OF MOVIE TAKE-OFFS AT THE BOX OFFICE**

Elberse and Eliashberg have examined the determinants that contribute to the box office performance of a movie. They report that when looking at a movie's
performance, one must significantly consider the simultaneous quality of the behaviour between the audience and the exhibitor and their interdependent nature. Although it is widely believed that a movie’s box office performance is directly affected by advertising, promotional activities and the movie’s attributes, Elberse and Eliashberg found that these variables have an indirect effect on the movie revenues. Elberse and Eliashberg add that movie ‘buzz’ is perishable and the performance of a movie is also greatly affected by the number of screens allocated.31

It is therefore believed that the typical movie model does not work for movies starring women and actors of colour. This paper proposes that this is due to WOM spreading differently among women and communities of colour. In the emotional contagion literature, there is evidence that women are more susceptible to emotional contagion than men.32 Moreover, according to the 2010 ‘Herbinger Women and Word of Mouth Study’,33 women are three times more likely to spread information, especially to friends and family. Further, when it comes to sharing information regarding entertainment, women are 38 per cent more likely to do so. Additionally, according to Nielsen, African Americans make an average of 6.3 trips every year to see movies. They also tend to strongly support movies where there are characters like themselves and to whom they can relate.34 Crucially, however, they often perceive no salient reason or rush to see most films during the opening weekend — perhaps due to the dearth of movies where people of colour or women can see themselves in leading roles. This suggests that by prematurely pulling these movies from cinemas, and not giving sufficient time for WOM to spread, Hollywood studios are potentially leaving millions of dollars on the table. It is therefore proposed that Figure 1 represents the typical movie box office performance model.

It is also proposed that Figure 2 represents the box office performance model for movies starring women and/or actors of colour. It is believed that there will be a second take-off during the fourth weekend once WOM has had time to spread sufficiently among the target audiences for these types of films.

![Graph](image-url)

**Figure 1:** The typical movie box office performance model
The hypotheses for this research are therefore as follows:

H1: Compared with general market movies, WOM/emotional contagion for movies starring women and/or actors of colour, in either the first or second position, have an additional take-off that occurs after the movie opens.

H2: Compared with general market movies, WOM/emotional contagion for films that are in the Top 50 at the box office and star women and/or actors of colour, in either the first or second position, travels at a slower (moderate) pace.

In short, it is believed that this study can uncover some interesting causal relationships to better understand how emotional contagion/WOM travel differently for movies starring women and actors of colour.

**EVENT DATA ANALYSIS OF MOVIE TAKE-OFFS**

**Methodology**

**Description of dataset**

This analysis used data from www.boxofficemojo.com. This website gives extensive details on the performance of a movie, along with analysis of its leading stars. Using global data on the top 50 movies, from 1st January, 2012 through 1st January, 2014, the study selected only those movies where women and/or actors of colour were in the first position (meaning they are in the leading role) and/or in the second position (meaning they are serving as the lead's co-star). The spells for this analysis were the weekly box office performance, while the events were the final box office totals.

**Analysis of the data**

To better understand the interdependent nature of the relationship between emotional contagion/WOM and the exhibitor, the key variables examined were weekly sales, number of cinemas, weekly sales per cinema, lead actor, gender of the actor, and the position of the lead actor. Typically, most additional take-offs in movies occur when the film receives a prestigious nomination or an award (eg Oscars, Golden Globes). However, for this analysis, it is believed that once emotional contagion/WOM has sufficient time to spread, the critical point for the second take-off for movies starring women and actors of colour is during the fourth weekend (see appendix for examples).

Furthermore, it is believed that the event data tool to best use for this analysis is Cox's proportional hazards regression model.
As documented in the literature, this model is often used to study sales take-off times. In addition, the proportional hazards model allows for the determinants of the hazard rate to be estimated. In using Cox, it is also hoped to better understand the curve of how exhibitors increase and/or decrease screens for the life of a film.

The proposed independent variables for this analysis are two-fold: (1) when a movie is discontinued (or withdrawn from cinemas), and/or (2) the second increase in sales (or the second take-off). Using these independent variables, analysis of the event data identified a connection in the chain of reasoning regarding causal determinants for the effects of emotional contagion/WOM on a movie’s performance when the stars are women and/or actors of colour.

The study found that Caucasian women actors and African American male actors saw significance when looking at weekly sales. Supporting this, there was an additional take-off after the opening weekend. (For African American male actors, \( p = 0.049 \).) Marginal significance was also identified with movies starring actresses of colour (\( p = 0.068 \)). This indicates that their movies stayed in cinemas longer. Figure 3 illustrates that movies starring actresses of colour stayed in cinemas for an average of 20 weeks before sales started to drop.

**FUTURE RESEARCH**

Future directions for research on this subject matter can delve into understanding better how emotional contagion/WOM travels among women and communities of colour. It is obvious from the literature that emotional contagion among women is high. Nevertheless, given the tremendous amount of decisions women make every day for themselves and their families, spreading...
information regarding movies may not be so important to them. Emotional contagion among women and movies may also be dependent on age and marital status. Furthermore, it is important to better understand the screen distribution of movies. In the present analysis, there was a great deal of inconsistency regarding how screens were allocated for general market movies versus films starring women and actors of colour.

There remains more work to do, including expansion of the dataset to include top 50 movies from 2015 to 2017, in order to increase its power. Due to Hollywood’s reality, the current database lacks equality, especially starring leading actresses of colour. It would also be interesting to better understand the studio’s rationale behind screen increases and decreases over the life of the film.

At the same time, given the ever-increasing level of multiculturalism in society, it may be beneficial to study further how emotional contagion/WOM travels among communities of colour. Anecdotally, it is known that due to cultural influences as well as economic factors, WOM travels at a different pace for communities of colour. However, it might be beneficial to conduct research to better understand this phenomenon.

CONTRIBUTIONS AND MANAGERIAL RELEVANCE

The initial results from this study should give marketing practitioners in Hollywood better insights into how better to support movies starring women and/or actors of colour. As Hollywood marketers prepare their advertising and promotions strategies for new movie entrants, it is hoped that this study will prove that audiences for such movies behave in a different manner than general market audiences.

Furthermore, regarding Hollywood’s public relations efforts, a new take on utilising earned media should be developed as a result of this research. First, Hollywood’s use of movie reviews by critics no one knows could be replaced by influencers with strong ties within particular communities. Secondly, engaging homophilous social networks and organisations with strong influencers may be worth exploring. Finally, incorporating a healthy balance of online and face-to-face tactics should be considered when targeting women and communities of colour with such movies.

Finally, it is hoped that this study could prove to Hollywood that positive WOM needs appropriate time to spread when it comes to movies starring women and communities of colour. This research also suggests that instead of concentrating their advertising and promotional activities a week or two before the opening of a movie starring women and/or actors of colour, Hollywood marketers should consider leaving the movie in cinemas longer and rolling out their promotional activities over the duration of the release, giving positive WOM time to spread through strong network ties across the appropriate channels. In this way, studios could well reap the financial benefits during the opening weekend and beyond.

REFERENCES


5. Ibid.

The effects of emotional contagion in movies starring women and actors of colour

7. Ibid.
8. Higham, N. (2005) ’Don’t believe the hype, word of mouth is marketing’s holy grail’, Marketing Week, Vol. 28, No. 23, p. 27.
10. Ibid.
11. Ibid.
16. Calantone et al., ref. 3 above.
17. Ibid.
19. Ibid.
20. Ibid.
22. Howard and Gengler, ref. 12 above.
23. Ibid.
24. Rogers, ref. 18 above.
26. Ibid.
27. Ibid.
29. Brown and Reingen, ref. 25 above.
31. Ibid.
32. Hatfield et al., ref. 21 above.
APPENDIX

Table A1: Snapshot of sample movie data

<table>
<thead>
<tr>
<th>Movie</th>
<th>Weekend Gross (US$m)</th>
<th>Rank</th>
<th>Weeks in release</th>
<th>No. sites</th>
<th>US$ per site</th>
<th>Gross to date (US$m)</th>
<th>Star</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr. Peabody &amp; Sherman</td>
<td>21.8</td>
<td>1</td>
<td>2</td>
<td>3,951</td>
<td>5,520</td>
<td>63.3</td>
<td>White males Sherman</td>
</tr>
<tr>
<td>300: Rise of an Empire</td>
<td>19.2</td>
<td>2</td>
<td>2</td>
<td>3,490</td>
<td>5,502</td>
<td>78.4</td>
<td>White males</td>
</tr>
<tr>
<td>Tyler Perry's Single Moms</td>
<td>8.1</td>
<td>5</td>
<td>0</td>
<td>1,896</td>
<td>4,259</td>
<td>8.1</td>
<td>AA/Latino females</td>
</tr>
<tr>
<td>Frozen</td>
<td>2.1</td>
<td>9</td>
<td>17</td>
<td></td>
<td></td>
<td></td>
<td>White female</td>
</tr>
<tr>
<td>Ride Along</td>
<td>1.4</td>
<td>13</td>
<td>9</td>
<td>1,024</td>
<td>1,345</td>
<td>132.1</td>
<td>AA males</td>
</tr>
<tr>
<td>Robocop</td>
<td>0.9</td>
<td>15</td>
<td>5</td>
<td>965</td>
<td>885</td>
<td>56.5</td>
<td>White male</td>
</tr>
<tr>
<td>About Last Night</td>
<td>0.07</td>
<td>16</td>
<td>5</td>
<td>624</td>
<td>1,074</td>
<td>47.8</td>
<td>AA males &amp; females</td>
</tr>
</tbody>
</table>


Table A2: Snapshot of movie sample data — Lone Survivor (white male star)

<table>
<thead>
<tr>
<th>Date</th>
<th>Weekend Gross (US$m)</th>
<th>Ranking</th>
<th>Weeks in release</th>
<th>No. sites</th>
<th>% change</th>
<th>$ per site</th>
<th>Gross to date (US$m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>27–29 Dec</td>
<td>90,872</td>
<td>36</td>
<td>–</td>
<td>2</td>
<td></td>
<td>45,436</td>
<td>153,839</td>
</tr>
<tr>
<td>3–5 Jan</td>
<td>84,857</td>
<td>38</td>
<td>1</td>
<td>2</td>
<td></td>
<td>42,429</td>
<td>326,685</td>
</tr>
<tr>
<td>10–12 Jan</td>
<td>37,849,910</td>
<td>1</td>
<td>2</td>
<td>2,875</td>
<td>+2,873</td>
<td>13,165</td>
<td>38,231,471</td>
</tr>
<tr>
<td>17–19 Jan</td>
<td>22,058,815</td>
<td>2</td>
<td>3</td>
<td>2,989</td>
<td>+114</td>
<td>7,380</td>
<td>72,868,936</td>
</tr>
<tr>
<td>24–30 Jan</td>
<td>25,929,570</td>
<td>2</td>
<td>4</td>
<td>2,989</td>
<td>+114</td>
<td>8,675</td>
<td>76,739,691</td>
</tr>
<tr>
<td>31 Jan – 6 Feb</td>
<td>12,900,960</td>
<td>2</td>
<td>5</td>
<td>3,162</td>
<td>+173</td>
<td>4,080</td>
<td>93,914,921</td>
</tr>
<tr>
<td>14–20 Feb</td>
<td>5,565,860</td>
<td>5</td>
<td>7</td>
<td>2,869</td>
<td>−416</td>
<td>1,940</td>
<td>112,852,146</td>
</tr>
</tbody>
</table>


Table A3: Snapshot of sample movie data — Ridealong (African American male star)

<table>
<thead>
<tr>
<th>Date</th>
<th>Weekend Gross (US$m)</th>
<th>Ranking</th>
<th>Weeks in release</th>
<th>No. sites</th>
<th>% change</th>
<th>$ per site</th>
<th>Gross to date (US$m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>17–23 Jan</td>
<td>54,245,310</td>
<td>1</td>
<td>–</td>
<td>2,663</td>
<td></td>
<td>20,370</td>
<td>54,245,310</td>
</tr>
<tr>
<td>24–30 Jan</td>
<td>26,417,440</td>
<td>1</td>
<td>2</td>
<td>2,759</td>
<td>+96</td>
<td>9,575</td>
<td>80,662,750</td>
</tr>
<tr>
<td>31 Feb – 6 Jan</td>
<td>15,059,840</td>
<td>1</td>
<td>3</td>
<td>2,867</td>
<td>+108</td>
<td>5,253</td>
<td>95,722,590</td>
</tr>
<tr>
<td>7–13 Feb</td>
<td>11,651,205</td>
<td>3</td>
<td>4</td>
<td>2,685</td>
<td>−182</td>
<td>4,339</td>
<td>107,373,795</td>
</tr>
<tr>
<td>14–20 Feb</td>
<td>11,132,005</td>
<td>6</td>
<td>5</td>
<td>2,517</td>
<td>−168</td>
<td>4,423</td>
<td>118,505,800</td>
</tr>
<tr>
<td>21–27 Feb</td>
<td>5,617,600</td>
<td>7</td>
<td>6</td>
<td>2,186</td>
<td>−331</td>
<td>2,570</td>
<td>124,123,400</td>
</tr>
<tr>
<td>28 Mar – 6 Feb</td>
<td>3,840,680</td>
<td>10</td>
<td>7</td>
<td>1,869</td>
<td>−317</td>
<td>2,055</td>
<td>127,964,080</td>
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