

Do Sales of an Extended Brand Affect Popularity of its Original?: Empirical Evidence from Motion Pictures and their Original Books*

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Book adaptation has been considered an effective strategy in filmmaking. This paper examines the relationship between the box office sales and the performance of its original book focusing on category extension, especially investigating reciprocal spillover effect from a movie to the book. With empirical data, two-way causality between performance of the extension brand (i.e., movies) and that of the parent brand (i.e., books) was examined to test the existence of reciprocal spillover effect. In addition, a linear model was used to test the moderating roles of extension characteristics. The results revealed that the higher the movie's box office sales, the higher the original book's sales after movie's release. The authors also found moderation effects such that if the book has high level of brand awareness prior to movie's release, or if there is a movie tie-in version, or when the book is mentioned in movie trailer, or if the movie is released shortly after the book's publication, then the strength of spillover effect is superior. The current empirical investigation is meaningful considering it provides implications to both buyers and sellers of the extension rights, contributing to the literature of reciprocal spillover effects in category extension.

Key words: Category extension, Reciprocal spillover effect, Entertainment products, Simultaneous equation systems

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I. Introduction

Turning the best-selling book into a movie has long been an effective strategy in filmmaking. The movie 'Hobbit: The Battle of the Five Armies' which has the story based on J.R.R. Tolkien's long time bestseller novel *The Hobbit*, was released in 2014 and earned 956 million dollars box office sales worldwide (Boxofficemojo.com). *The Forrest Gump* and *The Harry Potter* series are also successful film adaptations of all time, and there is an abundance of examples showing book-based movies have garnered financial success and received praise from critics. Interestingly, the strategy can be beneficial not only to the movie but also to its original book. It is not difficult to find the cases where the movie itself reciprocally brought great financial benefits to the original book. *Hunger games Trilogy* prints jumped 55% at the beginning of 2012 when the first *Hunger games* movie was released (Lewis 2012). The book *War Horse* had been sold 50,000 copies worldwide for 25 years since it was published in 1982, but when the movie adaptation was released in 2011, the book was sold more than 30,000 copies in UK alone in two weeks (Masters 2012).

In the context of brand extension, "Reciprocal Spillover Effect" is defined as the child brand's influence on parent brand, while "Forward Spillover Effect" refers to the parent brand's influence on the child brand (Balachander and Ghose,

2003). Illustrated in many real world examples, the success of extension brand is important not only for the brand itself, but also for the original brand, because it may have a positive impact on reputations and sales of the original brand. Although the book's reciprocal spillover effects toward movie is rather common, there has been only a few of empirical studies examining such effect in the context of category extension. Most of the previous studies in brand extension primarily focused on the forward spillover effect of extensions within a category (e.g., movie sequel, music album series). To contribute to insufficient literatures, current research explores the reciprocal spillover effect in category extensions with empirical data of movie to novel examples.

The purpose of the current research is two-fold. First, we tried to investigate into the existence of reciprocal spillover effects after controlling for simultaneous influences of forward spillover effects. Second, we sought factors affecting the strength of the reciprocal effect focusing on extension characteristics. Two analyses were conducted in order to examine main and moderating effects. In the first analysis, simultaneous equations were estimated to reflect the interdependency between movie and book sales and prove the existence of reciprocal spillover effects. In the second analysis, a linear model was tested to verify the moderating roles of extension characteristics.

II. Literature Review

Brand extension is regarded as a useful strategy to take advantage of brand name recognition and image to enter new markets (Aaker and Keller 1990). Many researchers have focused on identifying benefits elicited by brand extension strategies, and found the factors that affect consumers' evaluation on brand extension. They showed the evaluations of brand extension is depending on consumers' perceptions toward parent brand, such as perceived quality, and "fit" between the parent and extension brand (Aaker and Keller 1990; Park, Milberg and Lawson 1991).

Regarding brand extension, the forward spillover effect from the parent to the extension brand was mainly investigated in previous literatures. For instance, Hennig-Thurau et al. (2009) provided the framework to measure the economic value of movie sequels. For investigations of moderators, Basuroy and Chatterjee (2008) compared the box office revenue of movie sequels to that of their parent film and found that the shorter the time gap between the original and sequel's release date is, the higher the sequel's sales will be. Hendrics and Sorensen (2009) examined weekly sales of music albums and found the positive influence of an artist's second album's introduction on the preceding album's sales.

On the other hand, the reciprocal spillover

effect, which is also called feedback effect, arises when extension brand has influence on original one (Martinez et al. 2009). Compared to the forward spillover effect, the reciprocal spillover effect received less attention in brand extension literatures. Only a few studies tried to clarify the reciprocal effect and found that consumer's attitude, beliefs, and evaluations of extension had influence and were transferred to the original brand. Specifically, Lane and Jacobson (1997) showed how the reciprocal effect is different across individuals (i.e., Need for cognition) and attribute cues. Balachander and Ghose (2003) measured the spillover effect of advertising and suggested that the probability of choosing the parent brand increased when people were merely exposed to advertisement of child brand. John et al. (1998) focused on the negative side demonstrating that inconsistent brand extension can not only dilute the beliefs in individual products but also the beliefs in the parent brand in general. Another research from Joshi and Mao (2012) examined the elements affecting the book-based movies' revenue, and found that those movies performed better on the opening week than non-book-based movies, but the impact dissipated after that week.

Category extensions mean the brand extension in dissimilar categories (Aaker and Keller 1990). Reciprocal spillover effect in category extensions has been rarely investigated so far. Knapp et al. (2014) exceptively tried to develop a frame-

work for measuring reciprocal spillover of entertainment goods. Based on the extension's probability of being success, the authors focused on evaluating the economic value of extension contract licence. Our research is in line with Knapp et al. (2014), and focuses more on the impact of category specific variables. We differentiated our research by using dynamic simultaneous equation systems and developed new moderators regarding the extension characteristics.

III. Hypotheses

The logic of reciprocal effects in the context of book-based movies is that people might use the knowledge of the movies' brand to evaluate the book. We argue that as the movie becomes successful, people can easily get informed about the brand via advertisements and words of mouth. Furthermore, increased brand awareness can cause the better quality inference (Basuroy et al. 2006), so the positive inference can boost the interest toward the original book. Some studies about brand extension revealed that consumers' brand evaluation and brand equity are transferrable between original and extension brand. If the consumer has positive attitude toward the parent brand, then it will have a positive effect on its extension, and vice versa. Thus, from the positive feedback mechanism, we expect that the higher sales of

the extension movie will positively influence the success of original book.

H1: As the performance of a movie based on book increases, the performance of the original book after the movie's release also increases.

Moderators of reciprocal spillover effects are summarized in four categories as follows.

3.1 Parent Brand awareness

Brand awareness refers to how much one can recognize and recall the brand (Keller 1993). Brand awareness of parent brand was found to be a significant factor that affects the success of brand extension (Balanchander and Ghose 2003). In addition, Hennig-Thurau et al. (2009) used parent brand awareness (PBA) and parent brand image (PBI) as success drivers for brand extension and found that they positively influence the forward spillover effect. Although the effect of parent brand awareness on reciprocal spillover effect in category extension has been rarely investigated, we argue that PBA will have the impact in our case with following reasons. Basically, if PBA was high before the extension, it would have already been known to many people, and then people can easily come up with the parent brand after witnessed the success of the extension brand. Since the high level of PBA causes the higher level of

expectation toward the parent brand, the positive feedback from the extension brand might be gained more easily. In our context, parent brand awareness can be related with the number of reviews in the book. Thus, we propose that the number of previous reviews of the parent brand will positively affect the relationship between box office and book sales.

H2: If the number of reviews of the original book was higher before the extension, reciprocal spillover effect gets stronger.

3.2 Extension fit

The fit between parent and extension brand means the consistency or similarity between two brands. Perceived fit was found to make the perceived quality of a brand readily transferable (Aaker and Keller 1990). Hennig-Thurau et al. (2009) also demonstrated that increased fit between parent and child movie led to more positive spillover effects. In the context of book-based movies, we argue that when the storylines of two products are similar, then perceived fit will increase, and consumers' positive perceptions on a movie will be transferred to the original book. Since the similarity of storylines is determined by writers of two products, we expected that the participation of the book writer in the movie will significantly affect the extent of the reciprocal spillover effect.

H3: If the writer of the original book participated in script writing of the movie, the reciprocal spillover effect gets stronger.

3.3 Association Cue

Association cue indicates the factors that provide the information related to extension to consumers. This can be considered as a clue given to consumers showing the movie is an extension of the book. By acknowledging that the movie is an extension of the book, consumers can more easily connect the film. Letting people know that the movie was created based on the book can be regarded as the marketing effort of both book publishers and film makers (Shown in appendix 1). Knapp et al. (2014) introduced the term "backward integration" which indicates the marketing support from parent brand. For instance, the publisher's comments on the book cover saying it is now made into major motion picture can be considered as backward integration. They asserted this effort can make extension information more accessible, and moderates the reciprocal spillover effect of entertainment products. We argue that there is also a child brand's marketing effort which makes extension information more accessible and salient to consumers. We will use the term "association cue" to encompass marketing efforts from both parent and child brand to give information about the extension. So "association cue" here includes whether the

book has the movie tie-in version, whether the movie trailer mentions about original novel, and whether the movie uses the same title with original book. If this type of information about the extension is more salient, it will be more readily available to consumers when they use such information in searching for the products in the parent's brand category. Hence, we propose that association cues will positively moderate the reciprocal spillover effect.

H4: If the book has a tie-in version, the reciprocal spillover effect gets stronger.

H5: If the movie trailer mentions that it is based on a book, the reciprocal spillover effect gets stronger.

H6: If the movie uses the identical title with the book, the reciprocal spillover effect gets stronger.

the parent film and the sequel as salient as possible. Similarly, how accessible this association between movie and book relies on their strength in memory: if the basis for the recall is presented right after the event, the memory is more easily accessible (Wyer and Srull, 1986). Hence, we expect that the short time interval between film release and book publication helps consumers more easily remember the positive evaluations and link it to the original book.

H7: As the time interval between the publication of the original book and the re-release of the movie is shorter, the reciprocal spillover effect gets stronger.

3.4 Timing of the extension

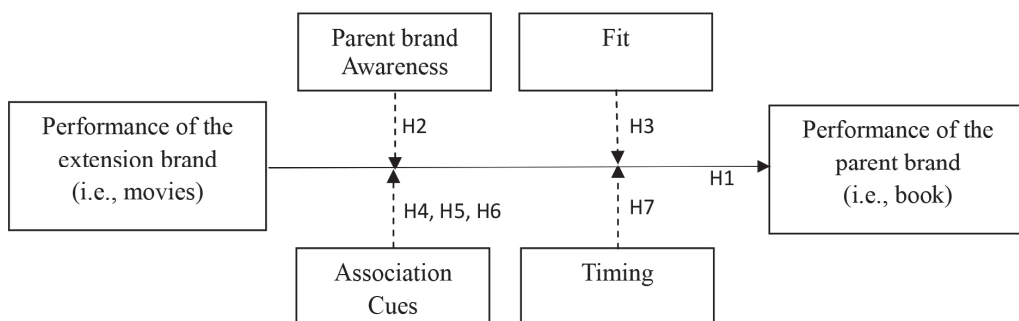
It is reasonable to think that movie makers would like to make favourable relation with

IV. Methods

4.1 Data & Measurement

Two separate studies were designed to test the main and moderation effects respectively.

〈Figure 1〉 Model diagram



For the list of book-based movies, we used IMDb website, the Internet Movie Database owned by Amazon that provides the detailed information about movies such as actors, crews, screenplay writers, running time, release date and so forth. The website also provides the list of book adaptation movies. From the list, we extracted the ones released in the United States after 2005. The movies based on comic books or graphic novels, and movies that combine the story of several books (e.g. *Sisterhood of Traveling pants 2* was excluded from the sample since the story was based on second, third and fourth book of its novel series.) were excluded. Finally, 98 pairs of book and movie were included in our sample list. The list was used in both studies to investigate the main effect and the moderation effect.

4.1.1 Investigation of reciprocal spillover effects

For measuring the reciprocal spillover effect, it is necessary to measure the financial success of the extension brand (i.e., movie) and that of the parent brand (i.e., book). First, as the performance measure of movies, U.S. daily box office sales for 28 days after each movie's release were collected. All the movie sales figures were gathered from 'boxofficemojo.com'. For the performance of books, since it is hard to access books' daily and gross sales, 'Google trends' data was used as a proxy of book sales. *Google*

trends show how often a particular search-term is entered relative to the total search-volume across various regions of the world. By analysing the data, we can observe when interest for certain search term was peaked or hit the bottom from the numbers being daily computed. Since *Google trends* showed almost the same pattern of sales data and can be used to predict sales of products (Choi and Varian 2010), we chose it as a proxy of book sales in the list. Like the movie, we gathered daily *Google trends* measures in U.S., collected during 28 days since the movie's release date.

4.1.2 Moderating role of extension characteristics

Although *Google trends* provides daily measures of relative search volumes regarding the original book, we cannot sum the numbers to infer the total performance during the particular period because of its 'relative' measuring characteristic. Therefore, we exploited another source, *USA today best-selling books* lists, to measure the performance of the original book. The list ranks the 150 top-selling titles each week based on an analysis of sales from U.S. booksellers including a variety of outlets such as bookstore chains, independent bookstores, mass and online merchandisers. To measure the financial performance of books, we counted how many weeks a book stayed on the lists after the movie's release. Then, we divided the number

gained from *USA today* by the count of the weeks after movie's release to reflect the relative ages, and used the ratio as a proxy for sales of the book.

To assess parent brand awareness, we counted the number of book reviews before the movie's release. The number of reviews can indicate how much the book might be known, since it reflects the number of people who have already read. We collected the information of reviews from 'Amazon.com', up to the date of movie release.

To measure association cue, we studied whether the book has "tie in" version (Joshi and Mao 2012, Knapp et al. 2014), whether the movie trailer indicates it is based on book, and whether the book and movie have the same title. These factors can directly signal to the consumers that the novel and the movie are closely related and at the same time, reinforce the relationship between them. The examples of book-based movie and other marketing support from movie can be found in Appendix 1.

For analysing the fit between book and movie, we checked whether the novel's author participated in writing screenplay (Joshi and Mao 2012; Knapp et al. 2014). Author's participation in writing screenplay can be considered as movie maker's effort into fully realizing the book's contents on the screen, and thus increase similarity between them.

Lastly, for the timing of the category extension, we measured days between the origi-

nal book's publication and the movie's release. In the analysis, for variables with highly skewed distribution (i.e., movie box office revenues, the number of book reviews, and days between movie's release), logarithmic values were used to be close to normal distribution. More detailed explanation on the variables is shown in Table 1.

4.2 Empirical Model

4.2.1 Investigation of reciprocal spillover effects

To examine the reciprocal spillover effect from movies to books more concretely, we need to control forward spillover effect from books to movies. Since the original and extension brand might influence each other, the reciprocal effects cannot be investigated without controlling for counterpart effects. Thus, we specified two models, which explain both types of spillover effects, as follows.

$$Book.Gt_i^t = \alpha_0 + \alpha_1 (M.Sales)_j^t + \alpha_2 (Book.Gt)_i^{t-1} + \mu_i + \epsilon_i^t \quad (1)$$

$$M.Sales_j^t = \beta_0 + \beta_1 (Book.Gt)_i^t + \beta_2 (M.Sales)_j^{t-1} + \beta_3 WEEKEND_t + \rho_j + \sigma_j^t \quad (2)$$

Here, $Book.Gt_i^t$ denotes the logarithm of

<Table 1> Measurements details

Variable Name	Variable Description	Measurement	Source
Book.Gt	Parent brand performances	Daily <i>Google trends</i> search volumes during 28 days after movie release	<i>Google trends</i>
B.Weeks	Parent brand performances	Ratio of book's listed number of weeks divided by days past after movie's release	<i>USA today</i>
M.Sales	Child brand performances	Logarithm of movie's box office sales in dollars (daily sales for the main effect study and total sales during 28days for the moderating effect study)	<i>Boxofficemojo.com</i>
B.Reviews	Parent brand awareness	Logarithm of number of book reviews before movie's release	<i>Amazon.com</i>
BM, Tie-in	Association cue	Binary variable taking the value of 1 if the book has movie tie in version	<i>Amazon.com, Barnes & Noble</i>
BM, Trailer	Association cue	Binary variable taking the value of 1 if the movie trailer mentions about the book	<i>Metacritic.com</i>
BM,Title	Association cue	Binary variable taking the value of 1 if the book has same name with original book	<i>Wikipedia.org</i>
BM,Writer	Fit	Binary variable taking the value of 1 if the writer is associated with making of the movie	<i>IMDb.com</i>
BM.Days	Timing	Logarithm of days between movie's release date and book's publication date	<i>Boxofficemojo.com, Wikipedia.org</i>
WEEKEND	Control variable	Binary variable taking the value of 1 if the date is Fri, Sat, or Sun.	<i>Boxofficemojo.com</i>

daily *Google trends* measure of book i on day t , $M.Sales_j^t$ denotes the logarithm of daily box-office revenue of movie j on day t , μ_i and ρ_j denote the book-specific and movie-specific fixed effect dummies, $WEEKEND_t$ denotes dummies for weekend (Friday, Saturday, and Sunday), and ϵ_i^t (σ_j^t) is an error term of the book (movie) equation.

In the model, we included the lagged value of book and movie's performances to consider the impact previous day's sales on that of the

next day. The fixed effects dummies were included in order to capture idiosyncratic characteristics associated with each book and movie, such as genre, distributor, and intrinsic quality. On the other hand, weekend dummies were included as a control variable to consider the effect of the release date; it is likely that if a movie is released on the weekend, its box office sales of the release date will be higher than those released on week days. We estimated two models simultaneously using the three stages least squares (3SLS) approach.

4.2.2 Moderating role of extension characteristics

Measuring the indirect effect of extension characteristics, we specified a straightforward linear model. In this part model, cross sectional data was considered to adopt time invariant explanatory variables. The main effect of movie performance on book performance was included, and the moderating effect of extension characteristics was included as interaction terms.

$$\begin{aligned}
 B.Weeks_i = & \beta_0 + \beta_1 M.Sales_i \\
 & + \beta_2 B.Reviews_i + \beta_3 BM.Writer_i \\
 & + \beta_4 BM.TieIn_i + \beta_5 BM.Trailer_i \\
 & + \beta_6 BM.Title_i + \beta_7 BM.Days_i \\
 & + \beta_8 (B.Reviews * M.Sales)_i \\
 & + \beta_9 (BM.Writer * M.Sales)_i \\
 & + \beta_{10} (BM.TieIn * M.Sales)_i \\
 & + \beta_{11} (BM.Trailer * M.Sales)_i \\
 & + \beta_{12} (BM.Title * M.Sales)_i \\
 & + \beta_{13} (BM.Days * M.Sales)_i + \epsilon \quad (3)
 \end{aligned}$$

Here, $B.Weeks_i$ denotes the relative ratio of the number of weeks books listed after movie's release, $M.sales_i$ denotes the logarithm of total box-office revenue during a month, $B.Reviews_i$ denotes the number of book reviews, $BM.Writer_i$ denotes the book writer's participation in the movie, $BM.Tie in_i$ denotes the existence of the book of tie-in version, $BM.Trailer_i$ denotes the comments of the

extension in movie trailers, $BM.Title_i$ denotes the identical titles, $BM.Days_i$ denotes the duration between the book and the movie, and ϵ is an error term. The model included interaction terms to test moderating roles of variables. We estimated the model using ordinary least squares (OLS) regression approach.

4.3 Results

4.3.1 Investigation of reciprocal spillover effects

Conducting the time series analysis, 62 pairs of book and movie were included in the sample. 36 pairs were excluded because of the insufficiency of the daily *Google trends* measure. Daily observations of 1,736 (62 pairs during 28 days) were used in models estimations. 3SLS estimation results are shown in Table 2. The upper part of the table illustrates the estimation results of the book equation. Based on the results, we found that movie's sales significantly affect the level of book's performances ($\alpha_1 = .164$, $p < .01$). Influence of the lagged value of dependent variable was also positive and statistically significant ($\alpha_2 = .668$, $p < .01$). From the results, we found the existence of reciprocal effects, and thus H1 was supported. At the same time, the results of the movie equation, which is shown in lower part of the table, confirmed the existence of forward spillover effects in our sample. Specifically, the influence

of book's performances on movie's sales was positive and statistically significant ($\beta_1=.164$, $p<.01$). Lagged variables of movie sales and weekend dummy were found to have positive impact on movie's performances.

Collectively, there is interplay between the movie and the book's performance. More importantly, considering the fact that the impact of movie on book was still significant even after controlling for the forward spillover effect, we conclude that there is a reciprocal spillover effect in the context of book adaptation movies.

4.3.2 Moderating role of extension characteristics

The second study was conducted to investigate the moderating effects of time-invariant extension related variables. 98 pairs of book and movie were used in the cross sectional analysis.

Descriptive statistics and correlation between variables are summarized in Table 3.

Table 4 shows the results of the OLS regression estimation. The R-square and the significant F-statistic values indicate that parent brand's success after the movie's release is well explained by the explanatory variables. The analysis provides evidence of the existence of the reciprocal spillover effect in the data ($\beta = .027$, $p < 0.05$). Thus, H1 was supported again with another measure of book's performances.

Also, as a measure of parent brand awareness, the number of book reviews written before movie's release affect the book's performance both directly and indirectly ($\beta = .079$, $p < .01$; $\beta = .001$, $p < .05$). The indirect effect supports the moderating role of the variable on reciprocal effects, and thus, H2 was supported.

Furthermore, the result shows that BM writer variable, which represents the extension fit be-

<Table 2> Estimates of Simultaneous Equations models: Time-Series Analysis

Variables	Parameter estimate (SE)
Book equation, 3SLS, R-square=0.91	
Intercept	-.917(.07)***
Movie performance ($M.Sales_t^t$)	.164(.01)***
Lagged <i>Google trends</i> measures ($Book.GT_i^{t-1}$)	.668(.01)***
Movie equation, 3SLS, R-square=0.92	
Intercept	3,385(.18)***
Book performance ($Book.GT_i^t$)	.171(.05)***
Lagged Movie sales ($M.Sales_i^{t-1}$)	.646(.02)***
Dummy for Weekend (Weekend)	.642(.03)***

Note 1: *** $P < .01$.

Note 2: Movie and book dummies (fixed effect for each movie and book) used in estimating the model are not reported.

tween book and movie, is not significant and has no direct or indirect impact on the reciprocal spillover effect. Therefore, the H3 was rejected.

Regarding association cues, we included three

types of variables. First, the existence of tie-in version of the book was found to have indirect effect only ($\beta = .028, p < .1$). That means, when the book has the movie tie-in version, the re-

<Table 3> Correlation Matrix of variables

	Mean (SD.)	1	2	3	4	5	6	7	8
B.Weeks	19.27(3.591)	1							
M.Sales	17.63(1.42)	.299***	1						
BM.Title	-	.130	-.215**	1					
BM.Tie-in	-	.221**	.371***	-.046	1				
BM.Writer	-	.048	-.028	.059	.132	1			
BM.Trailer	-	.276***	.118	-.029	.034	-.101	1		
B.Reviews	6.740(1.681)	.669***	.320***	-.033	-.263***	.043	.359***	1	
BM.Days	7.802(.937)	-.414***	.009	-.319***	.141	-.182	-.005	-.098	1

Note1: Logarithmic values are used for Movie sales, Movie budget, Book review, BM days.

Note2: Mean values of dummies are not computed.

Note3: **P < .05, ***P < .01.

<Table 4> Estimates of Linear regression model: Cross-sectional analysis

Variables	Parameter estimate	t-statistic
DV: number of weeks Book listed		
Intercept	-.253	-.824
M.Sales	.027**	2.060
B.Reviews	.079***	7.060
BM.Writer	-.039	-.525
BM.Tie-in	.024	.573
BM.Trailer	.042	1.165
BM.Title	.078	1.096
BM.Days	-.087***	-4.761
B.Reviews*M.sales	.001**	2.013
BM.Writer*M.Sales	-.401	.075
BM.Tie-in*M.Sales	.028*	1.889
BM.Trailer*M.Sales	.084***	3.481
BM.Title*M.Sales	.223	.401
BM.Days M.Sales	-.001*	1.713

Adjusted R-square=0.771, N=98, F-statistic= 18.90***

Note3: *P < .1, **P < .05, ***P < .01.

reciprocal effect from movie's success to book's success becomes stronger (H4 was supported). Second, including the extension information in the extension movie's trailer was discovered to have the moderating role ($\beta = .084$, $p < .01$). In other words, if the movie trailer contains the information of the original book, then the positive feedback from the movie to the book was strengthened (H5 was supported). However, the fact whether the movie shares the same title with the book did not influence to both main and moderating effects, and thus, H6 was not supported.

Lastly, the extension timing, as measured by *BM.Days*, had both direct and indirect impact on reciprocal spillover effects. Specifically, if the term between the movie release and book's publication gets shorter, the performance of the book itself was higher ($\beta = -.087$, $p < .01$) and the reciprocal effect gets stronger ($\beta = -.001$, $p < .1$). Thus, H7 was supported.

V. General discussion

5.1 Findings and Implications

This study found the empirical evidence of the existence of reciprocal spillover effects and the moderation roles of extension characteristics under the context of category extensions for entertainment brands. The model specifica-

tion was split into two parts: investigation of main (i.e., reciprocal spillover) effect and moderation effect. The first part of the estimation results confirmed the positive reciprocal spillover from the extension brand (i.e., movies) to the parent brand (i.e., books). The second part of the investigation confirmed that the parent brand's awareness, association cues, and extension timing strengthens the positive impact of the extension brand on the parents. Contrary to our hypothesis, the similarity fit between the parent brand and the extension does not significantly moderate the reciprocal spillover effect. We guess that the result might be caused by distinct characteristics of entertainment brands. This contributes to the hedonic natures of entertainment brands which can arouse the satiation effect. Consumers may prefer dissimilar storyline to similar storyline between the movie and the original book, since dissimilarity delays their satiation. Although we simplified the similarity fit to whether the book writer participated in movie writing, more various aspects of similarities are expected to uncover the direction and the extent of fit in spillover effects. Furthermore, the influence of sharing the same title was not statistically significant in our results. We suppose that this is because only small number of pairs in our sample (8 ours of 98) used the different titles from the book, and the effect might be cancelled out by the larger influences of other extension characteristics.

To sum up, not only the parent brand's inherent awareness, but also the extension contexts were found to amplify the extent of positive reciprocal effects. This result provides several practical implications. First, considering the possible reciprocal spillover effect, extension rights buyers (e.g., movie studios) can negotiate the contract fees with extension rights sellers (e.g., book publishers). In addition, during the extension design process, movie studios and book publishers can cooperate together in order to maximize the spillover effects in both directions. Practically, they can boost awareness of the book prior to the movie's release, include the extension information in the movie trailer, republish tie-in version of the book, or optimize the release timing of the movie. These efforts are expected to strengthen the spillover effect from the category extension of entertainment brands.

Theoretically, this study is an extension of previous research stream on brand extensions. Relatively, category extensions have received less attention in brand extension studies. As category extension has become a widespread strategy in various fields, our linking between practical insights and the academic construct can give meaningful implications. Furthermore, in terms of methods, we applied the dynamic simultaneous equation system. We expect that capturing the interrelationship between the parent and child brands can be usefully applied in the future research specifying the spillover effect.

5.2 Limitations and Future Research

Even though this study has its contributions on enriching literature related with brand extension, it also has limitations which could be further investigated and developed in the future. First, this study does not include the movies based on comic books or graphic novels. There are a number of movies in the market based on comics and graphic novels, such as *Iron man*, *Dark Knight*, *Avengers*, etc., which experienced significant success worldwide. Future research can cover such movies expanding the scope of the study.

Second, although this study covers a single type of category extension, from a book to movie, future research can consider more various examples of category extensions. In real world, it is not difficult to find the examples of both types of spillover effects. For instance, even within entertainment industry only, there have been successful extensions such as web cartoons based TV dramas, musical based on movies, and movie based mobile games. We expect that empirical investigations on both types of spillover effects under various contexts can be meaningful extensions of current research.

Finally, it will be more accurate if the study is conducted with daily sales market data of the books. Book sales as well as movie sales have cannot be free from rank effects: if the rank of the products is higher, the product can be exposed to more people. Reflecting the na-

ture of autocorrelation in sales data can enrich the future research in their investigation of spillover effects.

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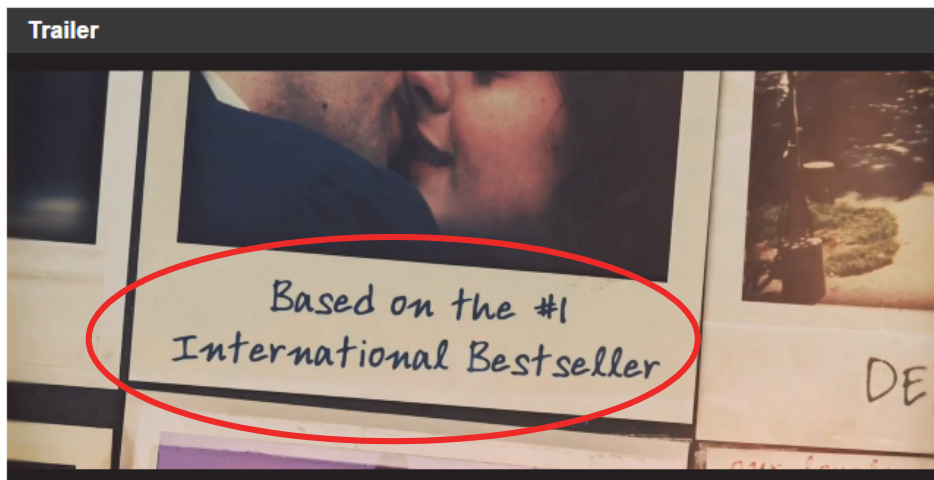
<Appendix>

Appendix 1. Examples of extension information provided by book publishers and movie makers



Book Cover

Movie Poster



Movie Trailer