

The Dynamics of Movie Purchase and Rental Decisions: Customer Relationship Implications to Movie Studios

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Abstract

Research on movie purchase and rental is rare when home movies are important for movie studios for the revenue potential. In this paper we study the similarities and differences of consumer's movie purchase and rental decisions by investigating the factors associated with the decisions. We collect data using national online survey on the consumer behavior and perceptions about movie purchase and rental and test hypotheses that address the factors using bivariate probit regression. We discuss the results and managerial implications to the movie studios and the future extension of the study.

Keywords: Movie Purchase; Movie Rental; Relationship between Movie Purchase and Rental Decisions; Customer Relationship Management.

1. Introduction

The motion picture industry is an important sector in the entertainment industry that generates a substantial amount of revenues for various firms associated with movies. The firms in this industry include movie studios, movie theatre operators, TV broadcasters, cable and satellite operators, retailers of movie-related goods, video rental companies, and video game publishers. The key players in the motion-picture industry are movie studios that serve as channel captains in the industry. They produce the movies and manage how their movies are distributed in the channel structure.

The box office sales had traditionally been an important source of revenue for the movie studios but the home movie sales and rentals have now become a dominant revenue source for them. In 2012, box office sales in North America totaled \$10.8 billion (Germain 2013) but the home movie sales were \$18 billion that included movie purchases and rentals (Orden 2013). Since a larger chunk of revenue is from home entertainment market, it would be crucial for the movie studios to understand how their movies are sold and rented in the market. Specifically, they need to understand the similarities and differences of consumer's home movie purchase and rental behaviors. Then the movie studios will be able to target the appropriate market segment and to allocate their resource more efficiently.

While the studies about the dynamics of home movie purchase and rental are rare, there are relatively recent studies about the home movie purchase. Xing and Tang (2004) discuss the pricing behavior in the online movie market using transactional data. Mortimer (2007) discusses optimal pricing of home movies using analytical model with no empirical applications. Hui et al. (2008) discuss pre-order sales using a retailer's transactional data. There are studies about home movie rental. Lehmann and Weinberg (2000) discuss the movie's optimal release time for the rental market. Dana and Spier (2001) discuss the value of revenue sharing in the rental market. Van der Veen and Venugopal (2005) support the revenue sharing contracts in the video rental supply chain. All of these studies use analytical models with no empirical applications. Terry and De'Armond (2008) study the determinants of home movie rental revenue using aggregate movie rental data. About the studies about the dynamics of home movie purchase and rental, Prosser (2002) discusses the prediction of home movie revenue that includes both movie sale and rental using an aggregate home movie market data. Knox and Eliashberg (2009) study the consumer's rent vs. buy decision from the retailer's perspective.

Using a transactional database, they study the home movie subscriber behavior, the customer segmentation and pricing. They use the expected number of viewings as the main threshold value for the consumer's buy vs. rent decision.

As the literature review shows, the studies about the dynamics of home movie purchase and rental are very rare. Even the existing studies are either theoretical with no empirical applications or empirical studies applied to a transactional database where a direct measure of consumer perception and satisfaction is missing. The current study investigates the dynamics of home movie purchase and rental decisions and measures consumer perception and satisfaction by a national online consumer survey. The major advantage of our study over the previous ones is that using a consumer survey it is able to ask the consumers directly about their past behavior and their perceptions about the movie purchase and rental and to provide insights beyond the traditional measure of expected number of viewings.

The objective of the study is to investigate the similarities and differences of the home movie purchase and rental decisions and to examine the relationship between the two decisions. We develop a survey instrument and administer it to the general public using a national online survey. The survey measures the movie going behavior, genre preferences, and the consumer perceptions of home movie purchases and rentals. The empirical results show support for most of the hypotheses and a negative relationship between the movie purchase and rental decisions. The result also offers directions to the movie studios about their targeting effort and customer relationship implications.

The remainder of the paper is organized as follows. We first discuss the hypotheses about the purchase and rental decisions. Then we discuss the movie purchase and rental survey study discussing the description of the online survey and the characteristics of the data and the respondents. We then detail the data analysis method for testing the hypotheses and discuss the estimation and hypothesis testing results. We conclude with a discussion of managerial implications and the future research opportunities.

2. Development of Hypotheses

Hypotheses are set up to investigate the similarities and differences of the home movie purchase and the rental decisions. They are about the number of theatre visits, the expected number of home movie viewings, perceptions about home movie, and the relationship between home movie purchase and rental decisions. The number of theatre visits is a general factor that may influence the decisions. The expected number of viewings is a measure that the previous studies have discussed but the perception measures are the unique factors that the current study investigates. Finally, understanding the relationship between the two consumer decisions is important for the movie studios in developing customer relationships for the home movie sale and rental markets.

2.1 Theatre Visits

Collins and Hand (2005) discusses the relationship between movie theatre visits and home movie usage. Movie theatre visits and home movie usage are considered as complements to each other since frequent movie theatre visits can allow consumers to know what movies are available in the other medium. We argue that the consumers who visit movie theatres frequently are more likely to buy and rent home movies since frequent theatre visits would indicate a general interest in movie products. Therefore, we hypothesize the following:

Hypothesis 1a: The more often the consumers go to movie theatres, the more likely to buy home movies.

Hypothesis 1b: The more often the consumers go to movie theatres, the more likely to rent home movies.

2.2 Expected Number of Home Movie Viewings

The consumer who expects to watch the same home movie more frequently would be more likely to purchase the movie even though owning movies would mean greater financial investment. Knox and Eliashberg(2009)supports the same argument and use the expected number of viewings as their major threshold measure for rent vs. buy decisions. The following hypotheses capture this argument:

Hypothesis 2a: The larger number of times the consumers would watch the same movie, the more likely to buy home movies.

Hypothesis 2b: The larger number of times the consumers would watch the same movie, the less likely to rent home movies.

2.3 Consumer Perceptions about Home Movies

The consumer perceptions about home movies would be highly related to the home movie purchase and rental decisions beyond the traditional measure of expected number of movie viewings. They include the perceived value of the movie ownership, perceived pleasure level of the second viewing, and the perceived quality of rented movies. When the consumer would like to charge higher price if they were to sell the movie they own, their perceived value of their movie ownership can be considered high. Zeithaml (1988) suggest that the perceived value is the consumer's overall assessment of the utility of a product based on what is received and what is given. Higher perceived value of their movie ownership will then naturally increase the chance that they buy movie rather than rent. Therefore,

Hypothesis 3a: The higher price the consumers would charge the movie they own if they were to sell, the more likely to buy home movies.

Hypothesis 3b: The higher price the consumers would charge the movie they own if they were to sell, the less likely to rent home movies.

When the consumer perceives the pleasure and excitement on watching the movie the second time the same as or close to the first time, the consumer would have higher perceived value of the investment in the movie purchase and hence there would be higher chance that they buy the movie. Therefore,

Hypothesis 4a: The more similar pleasure level the consumers would perceive from a second viewing to the first viewing of the home movie, the more likely to buy movies.

Hypothesis 4b: The more similar pleasure level the consumers would perceive from a second viewing to the first viewing of the home movie, the less likely to rent movies.

Consumers may perceive the video quality, disc condition, and the packaging of a rented movie differently from those of the new movie. If the perceived quality of the movie for rental is low, they would be more likely to buy than to rent a movie. Aaker and Jacobson (1994), Bolton and Drew (1991), Rust et al. (1995), and Zeithaml(1988) support this argument that the consumer's perception of quality drives preferences and consequently satisfaction, loyalty, sales, and profitability. Therefore,

Hypothesis 5a: The more satisfied the consumers are with the video quality, disc condition, and packaging of the rented movies, the less likely to buy movies.

Hypothesis 5b: The more satisfied the consumers are with the video quality, disc condition, and packaging of the rented movies, the more likely to rent movies.

2.4 Relationship between the Movie Purchase and Rental Decisions

There seems to be a general consensus in the literature that the movie purchase and rental decisions are mutually exclusive at the individual level (Knox and Eliashberg 2009). The consumer would decide either to buy or rent the movie at a particular shopping occasion. The current study tests the relationship between the two decisions at the aggregate level. Knowing the nature of the relationship between the movie purchase and rental decisions in the market would enable the movie studios to design their marketing programs accordingly. Hence,

Hypothesis 6: The movie purchase decision is negatively related to the movie rental decision.

3. Research Methodology

3.1 Survey Development, Sample, and Data Characteristics

This study uses an online survey instrument to collect data needed to test the proposed hypotheses. The questionnaire measures the respondents' movie going behavior and genre preferences, their home movie watching behavior, and their perceptions about movie purchases and rentals. Some key questions of the questionnaire are shown in the Appendix.

The survey is administered to the general public nationwide in the United States. We use 438 responses for study after eliminating for missing values and inconsistent answers. The respondents in the sample rebalanced in terms of demographics: 45.7% male; 53.4% age 30 – 54; 31.3% 4-year college degree; 40.9% household income \$25,000-\$74,999.

Table 1: Respondent Profile

Gender	
Male	45.70%
Female	54.30%
Age	
18-21	1.4%
22-29	11.0%
30-44	28.5%
45-54	24.9%
55-64	22.4%
65+	10.3%
Education	
Less than High School	1.4%
High School/GED	13.9%
In College	9.8%
2-Year College Degree (Associate)	15.1%
4-Year College Degree (BA, BS)	31.3%
Master's Degree	19.9%
Doctoral Degree	3.9%
Professional Degree (MD, JD)	3.2%
HH Income before Tax	
< \$15,000	4.8%
\$15,000 - \$24,999	8.2%
\$25,000 - \$49,999	17.4%
\$50,000 - \$74,999	23.5%
\$75,000 - \$99,999	13.2%
\$100,000 - \$149,999	16.4%
\$150,000 +	12.1%

3.2 Modeling Framework

The study tests the hypotheses about the consumer's movie purchase and rental behaviors and the relationship between the purchase and rental decisions. The two equations include (i) the consumer's movie purchase and (ii) the consumer's movie rental. Aspects of this system of equations are detailed in the following sections.

3.2.1 Consumer Movie Purchase Model

The consumer has the movie seeming to be the most "attractive" for purchase. More precisely, let the movie purchase of customer h be Y_{P_h} . Under the current survey study, the model is a cross-sectional analysis. Then the purchase can be expressed as:

$$Y_{P_h} = 1 \text{ if the movie is purchased when } U_{P_h} > 0 \text{ and } 0 \text{ otherwise.} \quad (1)$$

U_{P_h} is the movie's attractiveness for purchase based on the following model:

$$\begin{aligned}
 U_{P_h} = & \alpha_0 + \alpha_1 \text{Gender}_h + \alpha_2 \text{Age}_h + \alpha_3 \text{Education}_h + \alpha_4 \text{HHIncome}_h + \alpha_5 \text{Storage}_h \\
 & + \alpha_6 \text{AA}_h + \alpha_7 \text{AC}_h + \alpha_8 \text{Cl}_h + \alpha_9 \text{Co}_h + \alpha_{10} \text{Do}_h + \alpha_{11} \text{Dr}_h + \alpha_{12} \text{Fam}_h + \alpha_{13} \text{Fan}_h \\
 & + \alpha_{14} \text{Ho}_h + \alpha_{15} \text{MS}_h + \alpha_{16} \text{Ro}_h + \alpha_{17} \text{SF}_h + \alpha_{18} \text{War}_h + \alpha_{19} \text{Wes}_h \\
 & + \alpha_{20} \text{Freq_Theatre}_h + \alpha_{21} \text{N_Viewing}_h + \alpha_{22} \text{P_Sell}_h + \alpha_{23} \text{Pleasure}_h \\
 & + \alpha_{24} \text{Sat_Rnt}_h + \varepsilon_{P_h} \\
 \varepsilon_{P_h} \sim & N(0,1)
 \end{aligned} \quad (2)$$

Note that ε_{P_h} is an error term that represents any other unknown factors that may be related to the attractiveness of the movie for purchase.

The variance of the error term is set to be one for model identification purpose and hence this is a probit model. In our case, there are control variables and the variables for the hypothesis tests. The control variables are included in order to test the hypotheses in control of the individual differences and the individual genre preferences. The control variables for the individual differences include: Gender = 1 if the consumer is male; Age represents the consumer’s age in multiple categories; Education represents the consumer’s education level in multiple categories; HHIncome represents the consumer’s household income in multiple categories; and Storage = 1 if the consumer has movies on the computer or other storage devices. *Storage* is included since owning movies in the storage may influence the purchase and rental behavior. The control variables for the individual genre preferences include: AA = action and adventure; AC = animation and cartoons; Cl = classics; Co = comedy; Do = documentary; Dr = drama; Fam = family; Fan = fantasy; Ho = horror; MS = mystery and suspense; Ro = romance; SF = science and fiction; War = war; and Wes = western. The variables for hypothesis testing include: Freq_Theatre = the annual frequency of movie going; N_Viewing = the number of times the consumer would watch after buying a movie; P_Sell = the price the consumer would like to charge if they were to sell the movie that is bought for \$15; Pleasure = the points of perceived pleasure (or excitement) level the consumer would give for the second time viewing when the points of pleasure for the first time viewing is 100; Sat_Rnt = the points of perceived satisfaction the consumer would give to the video quality, disc condition, and the packaging of a rented movie when the points of satisfaction for a brand-new movie is 100.

3.2.2 Consumer Movie Rental Model

The consumer has the movie seeming to be the most “attractive” for rental. More precisely, let the movie rental of a customer *h* be Y_{R_h} . Then the purchase can be expressed as:

$$Y_{R_h} = 1 \text{ if the movie is rented when } U_{R_h} > 0 \text{ and } 0 \text{ otherwise.} \tag{3}$$

U_{R_h} is the movie’s attractiveness for rental based on the following model:

$$\begin{aligned} U_{R_h} = & \beta_0 + \beta_1 Gender_h + \beta_2 Age_h + \beta_3 Education_h + \beta_4 HHIncome_h + \beta_5 Storage_h \\ & + \beta_6 AA_h + \beta_7 AC_h + \beta_8 Cl_h + \beta_9 Co_h + \beta_{10} Do_h + \beta_{11} Dr_h + \beta_{12} Fam_h + \beta_{13} Fan_h \\ & + \beta_{14} Ho_h + \beta_{15} MS_h + \beta_{16} Ro_h + \beta_{17} SF_h + \beta_{18} War_h + \beta_{19} Wes_h \\ & + \beta_{20} Freq_Theater_h + \beta_{21} N_Viewing_h + \beta_{22} P_Sell_h + \beta_{23} Pleasure_h \\ & + \beta_{24} Sat_Rnt_h + \varepsilon_{R_h} \end{aligned} \tag{4}$$

$$\varepsilon_{R_h} \sim N(0,1)$$

Note that ε_{R_h} is an error term that represents any other unknown factors that may be related to the attractiveness of the movie for rental.

The variance of the error term is set to be one for model identification purpose and hence this is also a probit model. In the interest of investigating the similarities and differences of the home movie purchase and rental behaviors, the control variables and the variables for the hypotheses testing in this rental model are exactly the same as in the movie purchase model and hence the definition of the variables in this model is the same as those in the purchase model.

3.2.3 Properties of the Error Terms

The relationship between the consumer’s movie purchase and rental behaviors is modelled through a covariance matrix on $(\varepsilon_p, \varepsilon_{R_h})$. The covariance matrix is defined as

$$\Sigma = \begin{pmatrix} 1 & \sigma_{p,R} \\ & 1 \end{pmatrix} \tag{5}$$

The variance terms in the covariance matrix are ones since the variance of the error terms is set to be one for model identification purpose. Hence the covariance value is equivalent to the correlation of the two equations.

The correlation of the error terms ($\sigma_{p,r}$) represents the nature of the relationship between the consumer's movie purchase and rental decisions. If the correlation is negative and statistically significant, it shows that there exists negative relationship between the purchase and rental decisions.

3.3 Estimation

The coefficients and the correlation coefficient in the system of equations are estimated using bivariate probit regression analysis.

4. Results

The estimation results support most of the hypotheses. About the control variables, they are used to control for the individual differences and individual genre preferences but there are a few statistically significant results. The consumers with higher education level are less likely to purchase movies. The consumers are more likely to buy the action and adventure but less likely to buy the animation and cartoons. Furthermore, they are more likely to rent the drama and horror movies.

Table 2: Empirical Results

	DVD Purchase Model		DVD Rental Model	
	Est. Coeff	Std Err	Est. Coeff	Std Err
Intercept	-3.6605*	1.2557	-1.9482	1.0977
Control Variables				
Gender	0.2215	0.3756	0.3271	0.3056
Age	0.4869	0.3099	0.2714	0.2494
Education	-1.3723*	0.5537	-0.1500	0.3640
HH Income	-0.6844	0.5349	-0.0622	0.3322
Storage	-0.0917	0.1509	0.1013	0.1748
Action & Adventure	0.7243*	0.3792	0.3753	0.3403
Animation & Cartoons	-0.6584*	0.3195	0.0481	0.2717
Classics	0.0095	0.0079	0.0034	0.0061
Comedy	0.3280	0.5088	-0.1884	0.5050
Documentary	-0.5522	0.4521	0.6294	0.5600
Drama	0.3048	0.2920	0.6913*	0.2384
Family	0.2718	0.3301	-0.1187	0.2716
Fantasy	-0.0260	0.3314	-0.2326	0.2899
Horror	0.2326	0.3128	0.8511*	0.2709
Mystery & Suspense	0.2834	0.3466	-0.3434	0.2502
Romance	0.2186	0.3648	0.4503	0.3242
Science Fiction	-0.2751	0.3785	0.2406	0.3018
War	-0.0045	0.3624	-0.3497	0.2753
Western	-0.0197	0.0144	-0.0318	0.0236
Variables for Hypothesis Tests				
Freq_Theater	0.0211	0.0179	0.0508*	0.0169
Number of Viewing	0.2264*	0.0904	-0.0328*	0.0116
Price to Sell	0.0375*	0.0112	0.0154	0.0476
Perceived Pleasure Level	0.0220*	0.0107	0.0052	0.0093
Perceived Satisfaction of Rented Movie	-0.0095*	0.0039	0.0034*	0.0011
	Estimate	Std Err		
Covariance	-0.6366*	0.2039		

Note: Parameter estimates denoted by (*) are statistically different from zero ($p < .05$).

About the variables for hypothesis tests, H1a is not supported but H1b is supported. The more often the consumers go to movie theatres; they are more likely to rent movies. Both H2a and H2b are supported. The larger number of times the consumers would watch the same movie, they are more likely to buy movies. The fact that they would watch more may mean that it would be worth the investment to buy and own it. This result supports the use of this variable for buy and rent decisions in the existing literature. However, the larger number of times the consumers would watch the same movie, the less likely to rent movies. H3a is supported but H3b is not supported.

When the perceived value of movie is high, they are more likely to purchase movies. H4a is supported but H4b is not. When the consumers perceive the pleasure (or excitement) on the second viewing more equivalent to that of the first viewing, there is higher chance for them to buy the movie. Both H5a and H5b are supported. The satisfaction with the video quality, disc condition, and the packaging of the rented movie has negative relationship with the movie purchase decision but positive relationship with the rental decision. Finally, H6 is supported. The estimated covariance of the movies purchase and rental decisions is negative and statistically significant.

In summary, we find that the people who view the movie frequently after purchase, whose perceived value of movie is high and whose pleasure level is still high on second viewing are more likely to purchase the movies. When they perceive the quality of rented movie satisfactory, they are less likely to purchase the movies. About the movie rental decision, we find that the consumers who go to the movie theatres frequently and when they perceive the quality of rented movie satisfactory, they are more likely to rent the movies. When they view the movie frequently after purchase, they are less likely to rent the movies. Finally, the movie purchase and rental decisions are found to be negatively related in the market.

5. Managerial Implications

The study identifies the factors that are associated with the consumer decisions of purchasing and renting movies and the relationship between the two decisions. It uses a national online survey and analyzes the data using a system of two simultaneous equations. The empirical analysis supports most of the hypotheses and shows a negative relationship between the home movie purchase and rental decisions.

The negative and significant relationship between the movie purchase and rental decisions in the study implies that there is a segment of consumers that would show higher likelihood to purchase the movie whereas the other segment would show higher likelihood to rent the movie. Due to this nature of negative relationship between the movie purchase and rental decisions, the overall revenue would dramatically decrease if they direct their marketing effort to a wrong segment. The movie studios need to understand the similarities and differences of movie purchase and rental behaviors of these segments and design their marketing program accordingly.

Table 3: Representative Consumer Segments

Consumer	1	2
Predicted Pr(Purchase)	0.9139	0.5576
Predicted Pr(Rental)	0.2844	0.9987
Action & Adventure	1	0
Animation & Cartoons	0	0
Drama	0	1
Horror	0	0
Freq of Theatre Visits	2	12
Expected Number of Viewing	2	0
Price to Sell	\$15	\$5
Perceived Pleasure Level	100	70
Perceived Satisfaction of Rented Movie	60	90

Table 3 shows two representative consumers from each of the two segments. The first group of consumers shows higher predicted likelihood 0.9139 to purchase the movie. These consumers like action and adventure movies, visited the movie theatre two times the last year, expect two viewings, would sell a used movie for \$15, the same price as a new movie, perceive the pleasure level for the second viewing the same as the first viewing, show perceived satisfaction of rented movie 60% of a new movie. The second group of consumers shows higher predicted likelihood 0.9987 to rent the movie.

These consumers like drama, visited the movie theatre twelve times the last year, expects zero viewing, would sell a used movie for \$5, perceive the pleasure level for the second viewing only 70% of the first viewing, show perceived satisfaction of rented movie 90% of a new movie.

For the movie sale market, the movie studios are recommended to promote the action and adventure movies, target the people who expect to watch the movie more frequently, who would value their home movie higher, who perceive the pleasure level of the second viewing the same as the first viewing, and who perceive the quality of rented movie lower.

For the movie rental market, the movie studios are recommended to promote the drama and target the people who visit the movie theatres more frequently, who do not expect to watch the movie after the first viewing, and who perceive the quality of rented movie higher.

6. Conclusion

The current study makes contributions to the literature. First, the study is one of very rare studies that investigate the dynamics of consumer's home movie purchase and rental decisions. It further provides the overall relationship between the two decisions at the aggregate level and discusses the managerial implications to the movie studios. Second, the study examines the consumer perceptions about movie viewing using a national online survey. Most existing studies in the literature address the topic using either a theoretical model or an empirical application to a transactional database and thus fail to incorporate consumer-oriented factors such as perception and satisfaction levels.

The study provides the understanding of the similarities and differences of the consumer's purchase and rental decisions and implications to the movie studios but it does not address social aspects of the home entertainment option. Consumers may want to own home movies instead of renting them so that they can invite friends to come over whenever to enjoy the movie together. The future study can address the social factors in home movie purchase and rental decisions. It can also test the factors associated with the retailers. For instance, it can investigate the consumer's retail store choices for the movie purchase and rental decisions. It would provide managerial implications for the retail industry about the consumer's retailer choice for the movie purchase and rental decisions.

References

- Aaker, D.A. and Jacobson, R. (1994) The Financial Information Content of Perceived Quality. *Journal of Marketing Research* 31 (2): 191-202.
- Bolton, R.N. and Drew, J.H. (1991) A Longitudinal Analysis of the Impact of Service Changes on Customer Attitudes. *Journal of Marketing* 55 (1): 1-9.
- Collins, A. and Hand, C. (2005) Analyzing Moviegoing Demand: An Individual-Level Cross-Sectional Approach. *Managerial and Decision Economics* 26 (5): 319-330.
- Dana, J.D., Jr. and Spier, K.E. (2001) Revenue Sharing and Vertical Control in the Video Rental Industry. *Journal of Industrial Economics* 49 (3): 223-245.
- Hui, S.K., Eliashberg, J. and George, E. (2008) Modeling DVD Preorder and Sales: An Optimal Stopping Approach. *Marketing Science* 27 (6): 1097-1110.
- Germain, D. (2013) 2012 Box Office Hits Record \$10.8 Billion; Ticket Sales Increase For First Time In 3 Years. *Huff Post Entertainment*, May 15.
- Knox, G. and Eliashberg, J. (2009) The Consumer's Rent vs. Buy Decision in the Rentailer. *International Journal of Research in Marketing* 26 (2): 125-135.
- Lehmann, D.R. and Weinberg, C.B. (2000) Sales Through Sequential Distribution Channels: An Application to Movies and Videos. *Journal of Marketing* 64 (July): 18-33.
- Mortimer, J.H. (2007) Price Discrimination, Copyright Law, and Technological Innovation: Evidence from the Introduction of DVDs. *Quarterly Journal of Economics* 122 (3): 1307-1350.
- Orden, E. (2013) Home Movie Sales Log Rare Increase. *The Wall Street Journal*, Jan 8.
- Prosser, E.K. (2002) How Early Can Video Revenue Be Accurately Predicted? *Journal of Advertising Research* March-April: 47-55.

- Rust, R.T., Zahorik, A.J. and Keiningham, T.L. (1995)Return on Quality (ROQ): Making Service Quality Financially Accountable.*Journal of Marketing* 59 (2): 58-70.
- Terry, N. and De'Armond, D. (2008)The determinants of Movie Rental Revenue Earnings.*Academy of Marketing Studies Journal* 12 (2): 35-47.
- Van der Veen, J.A.A. and Venugopal, V. (2005)Using Revenue Sharing to Create Win-Win in the Video Rental Supply Chain.*Journal of the Operational Research Society* 56 (7): 757-762.
- Xing, X. and Tang, F. (2004)Pricing Behavior in the Online DVD Market.*Journal of Retailing and Consumer Services* 11: 141-147.
- Zeithaml, V. (1988)Consumer Perceptions of Price, Quality, and Value: A Means-End Model and Synthesis of Evidence. *Journal of Marketing* 52: 2-22.

Appendix: Key Survey Questions

1. On Average, How Many Times do You go to Movie Theaters Per Year?
2. What types of movies do you like? (Check all that apply.)
 - Action and Adventure
 - Animation and Cartoons
 - Classics
 - Comedy
 - Documentary
 - Drama
 - Family
 - Fantasy
 - Horror
 - Mystery and Suspense
 - Romance
 - Science Fiction
 - War
 - Western
3. When you buy a home movie from a retailer and you like the movie after watching it, how many times do you watch the movie on average (including the initial viewing)?
 - One time
 - Two times
 - Three times
 - Four times
 - Other: _____
4. If the retailers buy back used movies that you don't want to keep any more, what is the lowest price would you sell at? Assume that you bought a \$15 new movie.
5. Suppose that your pleasure (or excitement) level is 100 points when you watch your favorite movie for the first time. How many points would you give as your pleasure level when you watch the same movie for the second time and the third time?
Second time: _____
Third time: _____
6. If your satisfaction with video quality, disc condition, and packaging of a brand-new movie you just bought is 100 points, how many points would you give to your satisfaction with video quality, disc condition, and packaging of a rented movie?
_____ point