An information-processing model of bandwagon effects on media users' movie viewing selections

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2015

Xu, X. (2015). An information-processing model of bandwagon effects on media users' movie viewing selections. Doctoral thesis, Nanyang Technological University, Singapore.

<https://hdl.handle.net/10356/65398>

<https://doi.org/10.32657/10356/65398>

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**AN INFORMATION-PROCESSING MODEL OF
BANDWAGON EFFECTS ON MEDIA USERS' MOVIE
VIEWING SELECTIONS**

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2015

**An Information-Processing Model of Bandwagon Effects on Media Users' Movie
Viewing Selections**

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A thesis submitted to the Nanyang Technological University
in partial fulfilment of the requirement for the degree of Doctor of Philosophy

2015

ACKNOWLEDGEMENTS

I would like to express my deepest appreciation to everyone who supported me in one way or another during my Ph.D. candidature.

First and foremost, my sincere gratitude goes to my previous supervisor, Prof. Wayne Fu who guided and encouraged me at the initial stage of my Ph.D. study, and helped me develop a comprehensive understanding about the subject. I admire him for his broad knowledge, innovative thinking and deep insight in the area of media economics and management.

I am also very grateful to my current supervisors, Dr. Hao Xiaoming and Dr. Jung Younbo. Their insightful suggestions, continuous guidance and precious encouragement helped me overcome the difficulties during the rest of my Ph.D. candidature. This thesis would not have been possible without their enthusiastic support.

I would like to extend my appreciation to my examination committee, Dr. Charles Thomas Salmon, Dr. Ravishankar Sharma, Dr. Marko Skoric and Dr. Liew Khai Khiun. Their insightful comments and suggestions have been an inspiration for my research and improved the quality of my dissertation. A special thank you goes to Dr. Frank Boster at Michigan State University for his invaluable advice on my experimental design.

I am also indebted to the faculty, staff, and my fellow postgraduate students at Wee Kim Wee School of Communication and Information. I would like to especially thank Yuanyuan, Jianxing, Agnes, Ziqi and Xiaodong for their constant support and thoughtful discussions.

Finally, I want to express my deep gratitude to my parents as well as my husband Xiao Nan. They supported and walked alongside me through my entire Ph.D. candidature. Their unconditional love, trust, understanding and encouragement are important to me.

ABSTRACT

This dissertation studies bandwagon effects on media users' selections of content products and the antecedent to this effect. Building on the economic theory of information cascade and the psycho-cognitive theories on information processing, this study postulates that when facing a wide-ranging variety of media content offerings, people tend to make choices in or through ways that are sensitive to how others have reacted to those offerings. This inclination gives rise to bandwagon effects—the media users tend to gravitate toward those objects that have been known as popular. Furthermore, an antecedent to the bandwagon effect is how uncertain the recipients feel about the value, quality, or relevancy of the media content. Accordingly, this dissertation also inspects the role of informational uncertainty in stimulating the strength of bandwagon effects in the context of “movie audience” in particular.

This dissertation comprises a comprehensive analysis of real-market data and a laboratory experiment. The data analysis empirically examined the bandwagon effect on foreign audiences' viewing choices of Hollywood movies at the *aggregate* level. Regression analysis was conducted using the data of Hollywood movies' box office revenues in 73 countries during the 2003 – 2007 periods. The results confirmed the aggregate bandwagon effect in audiences' selections of Hollywood movies and showed that the strength of the bandwagon effect is magnified by how uncertain people are about the quality of movies, measured by the amount of movie information that audiences are confronted with and their level of unfamiliarity with the cultural background of Hollywood movies.

The experiment, on the other hand, was carried out to study bandwagon effects at the *individual* level by examining user responses to movies shown on a Website. In particular, this study examined qualitative versus quantitative bandwagon effects associated with systematic versus heuristic information-processing modes. The Process Dissociation Procedure (PDP) was utilized to reveal the independent contributions of the two types of bandwagon behaviors to audiences' content-selection decisions. This study further examines the influences of factors with respect to quality uncertainty on the magnitudes of the two types of bandwagon effects. The results showed that cognitive load is significantly associated with the strength of qualitative and quantitative bandwagon effects. An increase in the familiarity with Hollywood movies leads to a decrease in the quantitative bandwagon effect. Furthermore, an

increase in the need for cognition would lead to an increase in the strength of qualitative bandwagon effect when participants are confronted with a high cognitive load.

Taken together, these studies shed light on the overarching thesis of how humans make content selections under the circumstances of informational uncertainty. The dissertation seeks to make both theoretical and methodological contributions to the understanding about people's social reactions to choices and tendency for choice imitation, which is still incomplete.

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CHAPTER ONE INTRODUCTION

When making consumption decisions about media content products, media users tend to be sensitive to how other people have reacted to the content offerings and thus are typically attracted to objects that appear as popularity stars. As a result, media content products, such as movies, TV shows, music records, blogs, Websites, and so on, that are popular enjoy the “big-gets-bigger” advantage vis-à-vis the obscure or niche ones (Frank & Cook, 1995). The media products that have accumulated greater hits, views, download counts, or received more favorable comments tend to attract more subsequent consumers. Such effects of deferring to preceding others’ choices give rise to a choice bandwagon.

Building on the economic theory of information cascade and the psycho-cognitive theories on information processing, this study aims to advance the conceptual understanding about and methodological approach to the causes, dynamics, and consequences of the “big-gets-bigger” phenomenon. In particular, this study focuses on the bandwagon effect on audiences’ consumption decisions about media content products and the antecedent to this effect.

The Bandwagon Effect

The term bandwagon effect refers to the tendency to follow the actions or beliefs of others and to conform to the same choice (Bass, 1969; Simon, 1954). It has received a wealth of scholarly attention and been widely studied in different domains of behavioral sciences. Public opinion studies have investigated the bandwagon effect in voting in the electoral context and suggested that people tend to climb on to a bandwagon by adopting the majority view and voting for the candidates or parties who are more likely to win (Marsh, 1985; McAllister & Studlar, 1991; Nadeau, Cloutier, & Guay, 1993).

The bandwagon effect in media consumption has also drawn rich scholarly attention. When facing a wide-ranging variety of media content offerings, media users tend to gravitate toward those objects that have accumulated higher hits, views, downloads or more favourable comments and feedbacks, which leads to a skewed distribution or strong concentration of content choices (e.g., Frank & Cook, 2010; Neuman, 1991). Take the online user generated content for example, 10% of the most

popular content products account for about 80% of the total views (Cha, Kwak, Rodriguez, Ahn & Moon, 2007). Such a phenomenon pertaining to bandwagon effects can be explained by the information cascade theory in economics and the dual-process theories in social cognition.

The information cascade theory suggests that consumers tend to imitate the predecessors' actions and decisions when they have limited private information on the quality of the products (Banerjee, 1992; Bikhchandani, Hirshleifer, & Welch, 1992, 1998). Media products are experience goods and their quality is hard to observe prior to consumption and can be verified only upon consumption (Owen & Wildman, 1992). Accordingly, when confronted with numerous options of media content products but have limited pre-knowledge on their quality, media users will observe the actions of the preceding others to infer about the quality of the content and to reduce the uncertainty. As such, they tend to mimic precursors' choices in their selection of media contents, which gives rise to the bandwagon effect.

Developed by psychologists, the dual-process theories suggest two qualitatively different modes of information processing, namely the systematic process and the heuristic process (Chaiken, 1980). The systematic process requires proactive seeking, comprehensive scrutinizing and in-depth analyzing all informational input. The heuristic process involves the use of cognitive shortcuts. The theories further suggest that individuals may use heuristic cues to make a decision in various situations (Gigerenzer & Todd, 1999). One type of cues is the consensus or bandwagon cues, which means that people tend to make choices through ways that are sensitive to how predecessors have reacted, as they believe that consensus means correctness, or if many others think something is good, it would probably be good enough for them as well (Chaiken & Eagly, 1989; Sundar, 2008). The use of bandwagon cues could lead to two types of bandwagon effects in decision-making, depending on the information processing modes that media users engage in. When making viewing decisions of media content products, individuals may use various bandwagon cues as cognitive shortcuts or analytic tools and thus engage in heuristic or systematic processes, respectively.

The antecedent of a bandwagon process is the uncertainty about the quality of the product (Bikhchandani et al., 1992, 1998). A bandwagon effect takes place when there is little information on the products in the market. The less private information users hold about a product's quality, the more uncertain they are about the product,

and consequently the more they will use the actions of preceding others as information cues to infer about the quality of the product and reduce the uncertainty. In this case, individuals will jump on the bandwagon in the viewing selections of media products.

Hollywood Movies as the Test Ground

Previous studies have investigated the presence of the bandwagon effect in the consumption of communication or media products (e.g., Fu, 2004; Fu & Sim, 2011). Nonetheless, the role of quality uncertainty in the bandwagon process has yet to be fully analyzed. How the level of quality uncertainty of media content impacts the strength of the bandwagon process in the consumption of media content products remains unexamined. To bridge this research gap, this dissertation examines the presence of bandwagon effect and the role played by quality uncertainty in the viewership of movies.

This dissertation focuses on the movie audience for the reason that the movie industry offers a suitable test ground for the bandwagon phenomenon. Movies are experience products (Nelson, 1970). Although there are pre-release advertisements and trailers, the quality of a movie can hardly be observed or determined prior to viewing, but can be verified only upon watching it. This leads to the use of informational cues to infer about the quality of the movie when making a viewing decision and thus bandwagon behaviors among movie audiences.

In particular, this study examines the viewing selections of Hollywood movies because of their longstanding penetration and high popularity in the global movie market. Since the early decades of the 20th century, Hollywood movies produced by the major studios have been sold to foreign markets and have achieved great global market penetration. This practice has contributed not only to the export of US products but also the promotion of the American culture and values (McDonald & Wasko, 2008; Miller, Govil, McMurria, Maxwell, & Wang, 2005). In the digital era, with advanced technical resources and vast financial support, Hollywood productions have continued their dominance on a global scale (Dixon & Foster, 2011). Walls and McKenzie (2012) have pointed out that the foreign revenues obtained by Hollywood movies have been increasing substantially since 2000 and reached twice the level of their domestic revenue in 2009. Silver has (2007) found that the market shares of Hollywood movies in the European and Japanese markets exceeded 70% in 2000 in

terms of both box office sales and cinema attendance, suggesting the prevalence of Hollywood movies among international audiences.

The penetration of Hollywood movies in foreign markets allows us to examine the global audiences' movie viewing selections. Therefore, this dissertation chooses Hollywood movies as the test ground to examine movie audiences' bandwagon behavior in content-selection decisions.

The Scope of the Dissertation

This dissertation examines the bandwagon effect in audiences' viewing selections of Hollywood movies through both analysis of real-market observations and laboratory experiment. On one hand, a comprehensive analysis of data on the viewership of Hollywood movies is executed. Information about the box office revenue of Hollywood movies in the United States and overseas, the number of Hollywood movies imported in individual countries, as well as audiences' unfamiliarity with the cultural background of the media content are collected. A model testing audiences' viewing choices of Hollywood movies is derived. Econometric analysis using a large panel dataset is conducted to examine the aggregate bandwagon effect in Hollywood movie viewership dynamics.

On the other hand, a laboratory experiment is designed and carried out to investigate bandwagon effects on movie audiences' viewing selections at the individual level. The experiment estimates the separated contributions of heuristic and systematic factors to audiences' selections of movies, in order to examine how bandwagon effects arise in the decision-making process of heuristic versus systematic processing modes. It further identifies and analyzes how the factors with respect to quality uncertainty affect the two processes and in turn influence the bandwagon behaviors.

Research Contributions

This dissertation seeks to examine the bandwagon effect on audiences' viewing choices of movies in particular and consuming decisions of cultural products in general, and in turn to make contribution to both the theoretical and the empirical research on the bandwagon effect. It further sheds light on the understanding about how people make choices of media content products under the circumstances of informational uncertainty and the tendency for choice imitation.

In particular, the first study uses large global data to empirically test the existence of the bandwagon effect in audiences' selections of Hollywood movies and the impacts of the number of available movie options and audiences' cultural unfamiliarity, as two major indicators of the level of quality uncertainty, on the magnitude of the bandwagon effect. This study provides supporting evidence for the information cascade and information processing theories and thus contributes to the existing literature on the aggregate bandwagon effects.

The second study applies the PDP with a few adjustments to examine the separate contributions of heuristic and systematic processing modes to individuals' selection process and develops estimates for the bandwagon effects in the context of consuming media content offerings. In this sense, this study makes both theoretical and methodological contributions to the research on bandwagon effects at the micro-level, and provides insights on the underlying psychological mechanism that guides individuals' choices of media content products.

Overview of Chapters

This dissertation proceeds as follows. Chapter Two provides an in-depth review of both theoretical and empirical literature on the information cascade theory in economics and the dual-process theories in psychology. It also reviews existing literature on quality uncertainty as an antecedent to bandwagon effects. Based on the literature reviewed, Chapter Two further presents the research framework concerning bandwagon effects on the decision-making process among movie audiences and the factors determining the magnitudes of bandwagon effects.

Chapter Three reports Study 1, which examines the aggregate bandwagon effect on audiences' selection of Hollywood movies on the basis of real-market observations. The research hypotheses that concern the bandwagon effect and the role of quality uncertainty at the macro-level are proposed. An empirical model is developed for detecting the aggregate bandwagon effect on audience's selection of Hollywood movies. Data based on real-market observations are collected and a set of regression analyses are executed. The results of the analyses are reported and discussed.

Chapter Four reports Study 2, which is an experimental study that investigates bandwagon effects on user responses to movies at the micro-level. The research question and hypotheses are proposed to examine the underlying information-

processing mechanism that leads to bandwagon behaviors and to identify the factors influencing individuals' viewing decisions. The experiment design and the measures utilized in the study are described. Several one-way ANOVA and a set of Poisson regression analyses are conducted. The results are reported and discussed.

Chapter Five discusses the implications of the findings of Studies 1 and 2, limitations of the studies and possible directions for future work.

CHAPTER TWO LITERATURE REVIEW

Information Cascade

The Theory of Information Cascade

Consumer behaviour in viewing media content can be explained by the economic theory of information cascade or herd behaviour. An information cascade or a herd arises when individuals follow the predecessors' actions at the expense of personal preferences or private information (Banerjee, 1992; Bikhchandani et al., 1992, 1998). In the situations where individual consumers encounter a large variety of products in the market but lack information on the products' quality, a consumer would observe predecessors' behaviour and draw quality inference from their decision. As a result, a decision maker would imitate previous decision makers' behaviour and conform to the same choices. More specifically, Bikhchandani et al. (1992) assumed discrete actions where individuals are confronted with a binary choice, whereas Banerjee (1992) considered continuous actions where individuals choose one from a set of options in a continuum. Bikhchandani et al. (1992) pointed out that the probability that an information cascade will occur is a function of the number of individuals making choices as well as the accuracy of the information people have on the value of the product. They further suggested that information cascades are usually fragile and sensitive to the release of public information.

Although the concepts of information cascade and herd behaviour are often used interchangeably in the literature to explain the phenomena that individuals tend to conform to the same decisions, there is a subtle difference between the two concepts. In an information cascade, people are regarded to be rational. Put it differently, an individual considers it as optimal to mimic preceding others' behaviour and ignore his or her own private information or preference. While herd behaviour suggests that people in a group making an identical decision or choosing the same action, which could be a product of either rational or irrational expectation. This is to say, an information cascade implies herd behaviour whereas herd behaviour does not necessarily mean an information cascade (Celen & Kariv, 2004).

Furthermore, the information cascade or herd behavior could be inefficient and lead to a decrease in the welfare of the entire society. When an information cascade starts, an individual's decision does not convey any private or personal information.

Under this circumstance, an individual's choice or action does not improve decisions made by the following individuals. People would converge to the same choice without adding new information. This means a loss of the diversity of information. Moreover, in an information cascade, a small amount of information and evidence cause the majority of people to choose one option over others, and this might lead to the wrong choice. In this sense, though joining the cascade or herd is rational and could be optimal for the current individual, but it reduces the opportunity of obtaining new information to improve decision making, and may even lead to the wrong choice, which results in a lower level of social welfare (Banerjee, 1992; Bikhchandani et al., 1992; Ziegelmeyer, Koessler, Bracht & Winter, 2010).

With respect to the context of media consumption, De Vany and Lee (2001) extended the model of information cascade to capture the dynamics of movie box revenue distributions. Individuals may observe movies' box office revenue records and/or exchange information through word of mouth (WOM) communication, which leads to an information cascade or choice bandwagon. Box office performances are quantitative information and word of mouth provides qualitative information. Audiences can use both quantitative and qualitative information of movies to make their viewing choices and this gives rise to a choice bandwagon. In addition to signal accuracy and number of individuals, how much each individual values the WOM information of movies also affects the occurrence of an information cascade in movie viewership.

To sum up, the theory of information cascade is applicable to explain audiences' selection of media content offerings. Media contents are experience products, that is, the quality of the contents can only be verified after actually watching them. This poses difficulty for consumers to make consumption choices. Facing numerous content offerings but have imperfect information on their quality, audiences would use historical information about precursors' choices, such as historical hit number, box office sales, view count and download frequency, to infer about the quality of the products. As a result, they tend to follow the choice of the preceding users and pursue the content that has established higher popularity in the market. This gives rise to an information cascade in the audience capture of media content products.

Empirical Studies on Information Cascade

There has been a large body of research examining the model of information cascade, using experiments or real market observations. Experimental studies have detected information cascade by examining individuals' decision-making process in a laboratory setting where subjects make predictions in sequences (Anderson & Holt, 1997; Celen & Kariv, 2004; Hung & Plott, 2001).

Particularly, a significant body of research using experiments to examine the consumption of media products is related to the information cascade or the herding effect. Huang and Chen (2006) used experiments to examine Amazon book sales and revealed that informational cues of the product (e.g., sales volume) have an influence on consumer online choices, which indicates herd effect or information cascade. Knobloch-Westerwick, Sharma, Hansen and Alter (2005) explored reader choices of online news articles in an experiment. They have revealed that recommendations of preceding readers, including reader ratings and view counts, can influence consumer decision on which articles to select and how much time to spend on the articles. Hanson and Putler (1996) studied the decision made by consumers in downloading software through an experiment and found a positive effect of the download counts on subsequent demand for the software, suggesting herd behaviour in choosing online software. Salganik, Dodds and Watts (2006) used experiment to investigate consumer actions in downloading music and found that information concerning the choices of others generates collective behaviour, which is reminiscent of information cascade.

On the other hand, observations of real market have estimated aggregate outcomes resulting from mimetic behaviours among consumers in choosing products, which also suggests information cascade. Dholakia and Soltysinski (2001) examined consumer behaviour in eBay auction site and found that consumers tended to bid for items with one or more existing bids but ignore comparable or more attractive items without any previous bid. This suggests herd behaviour or information cascade in online auction sites. Fu and Sim (2011) examined the viewership dynamics of video-sharing websites. They found that a video that had accumulated larger view counts could attract more audience in a subsequent period as compared to a video with fewer accumulative view counts, thus indicating information cascade.

In particular, there has been a significant body of research that has empirically investigated the effect of information feedback among movie audiences. De Vany and Walls (1996) studied the dynamic of movie box office revenues and found that a

movie that obtained increasing revenues in earlier weeks is more likely to obtain additional growth of box office revenues, suggesting that the dynamics of movies' box office revenues is an information cascade. Walls (1997) and Hand (2001) empirically examined large samples of movies exhibited in Hong Kong and UK, respectively. Their findings further supported the information cascade in movie industry and confirmed the finding of De Vany and Walls (1996).

Additionally, previous studies on movie economics have examined the positive impact of word-of-mouth information on the success of movies' box office sales or admissions, which indicates an information cascade. Liu (2006) analyzed Yahoo Movies Website and suggested that the volume and valence of online reviews significantly affect both accumulative and weekly box office performances of movies. Moul (2007) derived an economic model of demand to examine the information feedback mechanism in the movie industry and found that word-of-mouth is statistically and economically significant in explaining the U.S. theatrical movie admissions. Duan, Gu and Whinston (2008) found that the volume of online user reviews has a significant impact on the box office sales of movies in the U.S. market, indicating an online word-of-mouth and the information feedback mechanism. Kim, Park and Park (2013) suggested that previous movie viewers' comments and opinions and expert reviews are significant factors determining audiences' consumption of U.S.-made movies. These studies conducted movie-level analyses and focused on the effect of word-of-mouth on the box office sales of individual movies.

The above mentioned studies have shown the information feedback effect among consumers on product choices by detecting individual decision making in response to precursors' actions in an experimental setting or aggregate consequences of mimetic behaviour in a real online market. Put it differently, these studies have provided evidence, at either individual or aggregate level, of the information cascade in a variety of products.

Bandwagon Cues in Dual-Process Theories

The Dual-Process Models

The dual-process models from psychology also help to conceptualize the viewership dynamics of media content. The heuristic-systematic model (Chaiken, 1980; Chaiken, Lieberman, & Eagly, 1989) and the elaboration likelihood model

(Petty & Cacioppo, 1986) are two early dual-process models developed in the persuasion context.

The heuristic-systematic model suggests two modes of information processing—the heuristic processing and the systematic processing, depending on individuals' involvement, the availability of cognitive resource, and so forth. The systematic process requires proactive seeking, comprehensive scrutinizing and in-depth analyzing all informational input; the heuristic processing mode involves the use of cognitive shortcuts and requires less cognitive effort and capacity, as compared to the systematic processing mode. The two processes may occur alone, or co-occur. The sufficiency principle of the heuristic-systematic model suggests that in the interest of economy, individuals tend to process information with the least amount of effort, and therefore the heuristic process often predominates over the systematic process. However, if individuals perceive the issues as of high importance or relevance, and/or they have enough cognitive resources, they tend to engage in the systematic process in addition to the heuristic processing mode (Chaiken et al., 1989).

The elaboration likelihood model is similar to the heuristic-systematic model. Elaboration likelihood is defined as the extent to which individuals are influenced by the content of the message itself (i.e., high elaboration) or by the peripheral aspects, for example, the source of information (i.e., low elaboration). If people are low in motivation or cognitive capacity, they tend to make judgment mainly based on peripheral cues and thus engage in peripheral processing. Otherwise, people will perform detailed analysis of the information and engage in the central route of processing (Petty & Cacioppo, 1986).

The dual-process theories have been employed and developed in other contexts, including person perception (Fiske & Neuberg, 1988), attitude access and use (Fazio, 1986), and stereotyping (Devine, 1989). In summary, the dual-process theories have been well developed and widely applied in various domains in social cognition. All these models suggest two processing modes—one is effortless and relies on well-learned associations, and the other is relatively more effortful.

An integrative dual-process model in social cognition has been suggested by Smith and DeCoster (2000). The two qualitatively different processing modes are defined as associative and rule-based processes. Associative process is quick and automatic in processing information, and it uses currently available cues. On the other hand, rule-based processing mode is defined as using symbolically represented rules or

logics to guide information processing and it is more effortful and analytic. The two modes operate independently and simultaneously rather than as alternatives or in sequence. Individuals' motivation (e.g., desire for accuracy) and cognitive capacity can influence their reliance on the two processing modes. If people are high in motivation or capacity, the rule-based processing tends to override the associative processing mode. Otherwise, people would rely more on the associative system. Note that the heuristic-systematic model and the elaboration likelihood model are aligned with the integrative dual-process model. The heuristic process in the heuristic-systematic model and the peripheral route in the elaboration likelihood model correspond to the associative process in the integrative model; the systematic process and the central route correspond to the rule-based process.

The Bandwagon Cues

The heuristic or associative processing mode, which requires the use of heuristics as mental shortcuts to process information and to make a decision, has been regarded as being derived from the principle of bounded rationality (Simon, 1955, 1956). The principle of bounded rationality contends that because of the limitation of human cognitive capacity, people tend to use approximate methods to make decisions. The operation of heuristics is one of these methods used by human bounded rationality.

In the real-world environment, people tend to use fast and frugal heuristics to make a decision in various situations. These imply that simple heuristics are accurate and effective in making decision and judgment in real life (Gigerenzer & Todd, 1999). Moreover, in an online setting, heuristics and cues are intensively employed by Internet users when making a judgment. Sundar (2008) proposed a MAIN model, which identifies a number of cues that trigger cognitive heuristics and in turn impact people's assessments regarding the credibility of the online content.

One type of such cues is the consensus or bandwagon cues. It refers to the tendency that people believe consensus means correctness, or a product would be good enough for them if many others think it is good (Chaiken et al., 1989; Sundar, 2008). The use of bandwagon heuristic may lead to a bandwagon effect in decision-making. It is worth noting that the use of bandwagon cues does not necessarily mean the engagement of heuristic processing. Individuals may also use bandwagon cues as analytic tools and thus engage in systematic processing mode (Sundar, 2008).

The dual-process theories can be applied to the context of making consuming decisions about media products. When facing various media contents offerings, individuals can use quantitative information (e.g., hit, view and download counts) as well as qualitative information (e.g., user reviews and comments) as bandwagon cues to infer about the qualitative of the media content and to make a viewing selection. The use of quantitative informational cues may lead to the use of heuristic process whereas the use of qualitative information may indicate the systematic process.

Empirical Studies on Dual-Process Theories

The dual-process models have been utilized to examine and explain the use and effect of media contents in general. For example, Magee (2012) examined the influence of colour and temperature on people's attitudes towards web pages, which indicates the impact of central versus peripheral routes of processing on impression formation online. Igartua, Moral-Toranzo and Fernández (2011) found the news frames regarding immigration has a significant impact on people's attitudes towards and emotion with immigration, suggesting that the framing effect is associated with heuristic process. Mattheiß et al. (2013) investigated users' experience of watching political talk shows using the elaboration likelihood model and found a significant impact of individuals' motivation on their feelings of being informed or entertained.

Furthermore, experimental research has investigated the operation of bandwagon cues or consensus information, which demonstrates the bandwagon effect from the perspective of information processing. Axsom, Yates and Chaiken (1987) found that other audiences' responses, such as burst of clapping and cheers of approval, can affect recipients opinion formation. Maheswaran and Chaiken (1991) examined the influence of consensus information (i.e., the proportion of users who are satisfied with a certain product) on consumers' attitudes towards a product and suggested a significant interaction effect of consensus information and task importance. Darke et al. (1998) found individuals' attitudes towards a proposed policy is influenced by how many others agreed or disagreed with the policy, suggesting the impact of consensus information on attitude.

Especially, previous research has investigated the use of bandwagon cues in the consumption of media products. Sundar and Nass (2001) found that when other users were attributed as the source of online information, people would perceive the online content to be of higher quality and more trustworthy, suggesting the use of

bandwagon cues. Sundar, Knobloch-Westerwick, and Hastall (2007) pointed out that in Internet users' assessments of online news stories, the number of related articles presented elsewhere, considered as a bandwagon cue, is positively connected to the credibility and worthiness of a news story when the source of the news story is of low credibility. A series of experiments that simulated the online sale of electronic products showed that the informational cues, including the sale rankings, user ratings and reviews, have an influence on users' perception of others' opinion regarding the product, and consequently impact their purchase intention (Sundar, Oeldorf-Hirsch, & Xu, 2008; Sundar, Xu, & Oeldorf-Hirsch, 2009). These studies have reached consensus on the use of the bandwagon cues and the occurrence of bandwagon effect.

Previous research has also provided qualitative evidence on the involvement of heuristic process when people make a judgment or decision under a new media environment. Metzger, Flanagin and Medders (2010) and Rieh and Hilligoss (2008) found that bandwagon cues are used by Internet users when they make assessment on the credibility of online information.

The above mentioned studies have employed different methods to investigate the use of bandwagon cues in making consumption decision and have reached consensus on the occurrence of the bandwagon effect.

In summary, the information cascade theory and the dual-process models both suggest a bandwagon process, which explains how audiences select media products on the basis of their popularity. The theory of information cascade explains the formation of bandwagon effect from the perspective of behavioural economics; the dual-process theories in social cognition focus on the underlying psychological mechanism that guides individuals' decision-making process.

The Process Dissociation Procedure in Testing the Dual-Process Models

The process dissociation procedure (PDP) was designed to discern the contributions of the heuristic and systematic processes to an observed phenomenon. It was originally used to separate contributions of the automatic and controlled processes to memory task performance (Jacoby, 1991; Jacoby, Toth, & Yonelinas, 1993). Then the PDP approach has been applied to various contexts as a general method for estimating the separated contributions of the two processes (e.g., Ferreira, Marques, Sherman, & Sherman 2006; Payne, 2001). An experiment under the PDP approach involves two conditions: inclusion tasks where the systematic process and the heuristic

process work in concert and exclusion tasks where the two processes work in opposite directions. The estimates of the two processes can be calculated by comparing individuals' performance in the inclusion and exclusion tasks.

The PDP has been widely utilized to distinguish the information-processing routes in various domains of social cognition studies, particularly in studies of prejudice and stereotyping, and judgment and decision making (Payne, 2009; Payne & Stewart, 2007). Studies of stereotyping and group prejudice used the PDP to examine influences on the two processes of various factors. Payne (2001) used the PDP to experimentally dissociate the contributions of automatic and controlled processes in the identification of weapons. The results suggested that the prime of black faces influences the identification of weapons via the automatic process, with the controlled process unchanged; speeded responding impacts the controlled process but not the automatic process. Govorun and Payne (2006) examined the effect of ego-depletion on the automatic and controlled processes in race stereotyping, and found that ego-depletion reduced the controlled process, but did not affect the automatic process. Lambert et al. (2003) used the PDP to examine prejudice and stereotype in public setting and found that social anxiety reduces the controlled process rather than strengthen the automatic process.

The PDP has been applied to studies on judgment and decision making in recent years. Ferreira et al. (2006) developed and employed the PDP to separately estimate the contribution of heuristic and systematic processes when people make judgment under uncertainty. The findings suggested that intentions and goals, cognitive load and priming of the use of symbolically represented rules or logics impact systematic process but not heuristic process; priming the use of heuristics affects heuristic process but not systematic process. In this sense, the study validates the PDP in testing the dual-process models in decision making. Other studies used the PDP to investigate the two processes in judgmental bias (e.g., Fitzsimons & Williams, 2000).

In summary, the PDP has been widely used in studies of dual-process theories. These studies provided estimates of the two processes and examined how the two processes work independently in a variety of contexts. Nevertheless, few communication studies have utilized the PDP to examine the separate contribution of information-processing modes.

The Role of Quality Uncertainty in the Bandwagon Effect

The antecedent of the occurrence of a bandwagon is the uncertainty of products' quality (Bikhchandani et al., 1992, 1998). When individuals have limited information or pre-knowledge on the quality of the product, they tend to rely on the actions of preceding others as information cues to infer about the quality of the product, and consequently conform to the observed behaviours. This study considers quality uncertainty at both the country and individual levels. At the aggregate level, the number of available options and audiences' familiarity/unfamiliarity with the general cultural background of the production origins as two indicators of the level of quality uncertainty. At the individual level, quality uncertainty level is represented by the cognitive load imposed on individuals and their familiarity/unfamiliarity with the products.

Quality Uncertainty at the Country Level

Number of Options

The number of available content offerings provided to media users reflects the uncertainty of the value of the content to consumers, which in turn influences their information processing and the tendency of choice bandwagon in making viewing selections. The more available options means a larger amount of information related to the products, which requires more time and energy to obtain, absorb and digest the information and make judgment on the quality of the products. When an individual receives too much information, which exceeds his or her capacity of information processing, information overload will occur. Such information overload could impair individuals' decision-making ability (Eppler & Mengis, 2004; Herbig & Kramer, 1994; Jacoby, 1977, 1984). That is, when individuals are confronted with many options and massive information but given the limitation of the information-processing capacity, they would be more uncertain about the quality or value of the products, and thus the bandwagon effect will become stronger when people make their consumption decisions.

Previous has examined the influence of number of available choice options on making consumption decisions. Empirical studies in marketing research examined the effect of the number of brands for a certain type of products, the number of product attributes on which information is available for each brand, and the complexity of the format of the product information on consumers' decision making, particularly their

choice accuracy (e.g., Jacoby, Speller, & Kohn, 1974; Malhotra, 1982; Scammon, 1977).

In the context of media consumption, there is no absolute right or wrong choices of media products, and thus the notion of decision accuracy may not be applicable. Nonetheless, the number of available options may have an impact on individuals' decision-making process of viewing selections. A few empirical studies have examined the impact of the number of available options on the audience selection of media content. Yim (2003) compared the audience selection of different types of media and found the level of audience concentration increases as the number of available item options increases. Cha et al. (2007) suggested that the viewership of user generated content are concentrated on a fewer number of top popular videos, as compared to that of other online video systems supplied by a small number of professionals. These studies have suggested a positive influence of available options on the audience concentration level.

To sum up, previous studies in marketing research and media studies both provided empirical evidence on the effect of number of available options on making consumption decisions. Nonetheless, how the number of options impacts information processing and in turn affects the tendency of a choice bandwagon in media consumption has not been fully examined.”

Cultural Familiarity

The degree to which audiences are familiarity with the general cultural background of the content offerings indicates the level of quality uncertainty, which may impact the *aggregate* bandwagon effect in the viewing choices of content offerings. As media content is a cultural product that conveys specific ideas, beliefs, values, and identities of the producers, cultural factors would play an important role in explaining the consumption decision of audiovisual content products. Straubhaar (1991) articulated that media content consumers actively pursue cultural proximity. People prefer domestic cultural products or products from familiar cultures to those from unfamiliar ones, for the reason that domestic content or content from familiar cultures are easier to absorb. As such, the more audiences are unfamiliar with the cultural background of the content products, the higher uncertainty of the content to the audience, and thus the stronger the bandwagon effect may occur.

Previous research has examined the cultural influences on the consumption of movies or television programs from different production origins. McFadyen, Hoskins, and Finn (2003) pointed out that cultural distance between the United States and the importing countries is negatively associated with the export prices of the American TV programs. Oh (2001) demonstrated that for a given country, a larger cultural distance from the United States leads to an increase in the box office revenue of its domestic movies in the country. Fu and Lee (2008) found that in Singapore, films from culturally more similar countries receive greater box-office success. Lee (2006; 2008) examined the effect of cultural distance on Hollywood movies when they travel to Hong Kong and other East Asian countries and regions, and found that movies of different genres are subject to cultural discount to different extents. Fu and Sim (2010) examined the country-to-country flows of motion pictures and discovered that the cultural discount effect is moderated by the size of the producing market. However, a thorough search of the existing literature shows that no studies have examined the impact of cultural unfamiliarity on the magnitude of bandwagon effect on audience's selection of media content offerings.

Quality Uncertainty at the Individual Level

Cognitive Load

In the area of psychology, cognitive load refers to the burden to working memory imposed by the content of the task or irrelevant content and distraction. When making viewing selections of content products, if audiences are distracted by irrelevant information or events, for example, using several different media simultaneously, there is an increase in the cognitive load, which would lead to less cognitive resource available for individuals to understand and digest the information about the media content products. Under this circumstance, individuals will also feel more uncertain about the quality of the content products, and consequently the bandwagon effect on the viewing selection will be strengthened.

Experimental studies in social cognition have investigated the influence of cognitive load on individuals' underlying psychological mechanism of information processing. These studies have examined the effect of cognitive load on information processing by imposing a secondary memory task that competes with the primary task for cognitive resources. Reinhard and Sporer (2008) tested the impact of cognitive capacity on the judgments of credibility by using a secondary task technique to induce

high cognitive load. The results suggested that participants under low cognitive load used both verbal and nonverbal cues, whereas those with high cognitive load used only nonverbal cues, which reflects the influence of cognitive load on making credibility judgments. Ferreira et al. (2006) also examined the influence of cognitive load on information processing by imposing a simultaneous secondary memory task. They found that an increase in cognitive load would lead to a reduction in the rule-based processing mode, while the heuristic processing mode remains unchanged. This is consistent with the resource demanding nature of the rule-based process. Nonetheless, how the extraneous distraction could impact the cognitive load and in turn influence the heuristic and systematic processes has not been examined in the context of consuming media products.

In summary, previous research in psychology has examined how cognitive load impacts individuals' information processing and decision making. However, the effect of cognitive load in making consumption decisions of media products has not been fully revealed.

Product Familiarity

At the individual level, audiences' familiarity refers to their prior knowledge about or previous experience in consuming a certain type of media content products. Park and Lessig (1981) defined familiarity with two dimensions—actual familiarity and perceived familiarity. Actual familiarity refers to how much an individual knows about the product. It could be conceptualized as a composite of informational familiarity which refers to the amount of information or knowledge an individual has about the product, and experiential familiarity which refers to the previous experience of using the product (Baloglu, 2001; Bettman & Park, 1980). Perceived familiarity refers to how much an individual thinks he or she knows about the product. This self-reported or perceived familiarity could influence individuals' information processing in decision making and problem solving (Ladwig, Dalrymple, Brossard, Scheufele, & Corley, 2012). If audiences have or think they have little prior knowledge of or little previous experience with the type of products, they will feel more uncertain about the product quality and this will in turn impacts their information processing.

Previous marketing research measured product familiarity at the individual level from the above perspectives and suggested that the level of product familiarity has an influence on consumers' purchase-decision process. For instance, Johnson and

Russo (1984) found a significant impact of consumers' familiarity with or prior knowledge about a product class or brand in their judgment or decision of a new purchase. Park and Lessig (1981) found a significant effect of product familiarity on consumers' confidence in and satisfaction with their decision, as well as the time they used to make the consumption decision. Punj and Staelin (1983) investigated consumers' information searching behaviour for purchasing new automobiles and suggested that consumers' prior knowledge about automobiles would affect their information searching for buying a new car and thus influence their purchase decisions. Baloglu (2001) further pointed out that tourists' familiarity with a destination, including their past travelling experience and the amount of information they have about the destination, has a positive influence on their perception of the destination and thus affect their destination selection process in tourism.

Similarly, previous research in the area of social cognition has also examined the effect of prior knowledge or experience on decision making, particularly on individuals' reliance on the two modes of information processing. Petty and Cacioppo (1981) suggested that the systematic process depends on individuals' capability of evaluating message content in terms of their prior knowledge and experience. Wood, Kallgren and Preisler (1985) conducted an experiment and found that people who have more relevant knowledge are less likely to be affected by the peripheral cue (i.e., the length of a message). Ratneshwar and Chaiken (1991) found that individuals who are low in contextual prior knowledge tend to rely more on the source expertise, suggesting the use of heuristic processing.

These studies have reached consistent findings about the impact of prior knowledge or familiarity on purchase decision-making process. Nonetheless, how the familiarity with a certain type of media products impacts heuristic and systematic processing modes and in turn influences audiences' viewing choices has not been examined.

To sum up, there have been relatively few studies that investigated the influence of quality uncertainty on the strength of bandwagon effects. One notable exception is the work by Fu and Sim (2011), whose research showed that the presence of pictorial and verbal preview reduces the uncertainty about the quality of the video and in turn moderates the information cascade. But their study focused on the viewing selection of user-generated videos online, rather than mass media content products. In addition, they used the release of pictorial and verbal information of the online videos

as the measures for the level of quality uncertainty, rather than the load imposed on audiences or the unfamiliarity with the content products.

Research Framework

Built on the literature reviewed above, this dissertation examines the bandwagon effect on audiences' viewing choices of movies at both the aggregate and individual levels, in order to provide a comprehensive understanding about how the audience makes consumption decisions of media content products.

At the aggregate level, research investigating the bandwagon effect in consuming media products is still scarce. Previous research has shown that the dynamics of box office revenues of movies is an information cascade (De Vany & Lee, 2001; De Vany & Walls, 1996). In addition, Fu and Sim (2011) analyzed the bandwagon effect in the viewership capture of online user-generated content by examining how accumulative view counts benefit subsequent viewing of user-generated videos.

To the best of our knowledge, no studies have used a large global sample to examine the Hollywood movies' domestic and foreign box office sales to reveal the aggregate bandwagon effect in audiences' viewing choices of movies. Moreover, how the level of quality uncertainty, measured by the number of available options and cultural unfamiliarity, impacts the bandwagon process remains unexamined.

To bridge the research gap, Study 1 of this dissertation tests the aggregate bandwagon effect in the viewership dynamic of Hollywood movies in individual countries. Foreign audiences usually have limited pre-knowledge on the quality of the imported Hollywood movies. Under this circumstance, they will use a movie's box office revenue records in the United States as informational cues, in order to infer about the value of the movie and to reduce the uncertainty. This gives rise to the bandwagon process. As a result, the foreign audiences' viewing selections will converge to a small league of Hollywood movies that have already received high popularity in the United States. This study compares the box office revenue distributions of Hollywood movies in the United States and other countries to examine the presence of bandwagon effect at the macro-level. In addition, this study assesses the influence of the uncertainty level of the movies' quality to foreign audience on the bandwagon effect in the viewership dynamics. Specifically, how the number of available options and the cultural unfamiliarity would exacerbate the aggregate

bandwagon effect on the box office revenue distribution of Hollywood movies overseas is examined.

At the individual level, the psychological mechanism that guides individuals' viewing selection and the underlying information-processing mechanism that leads to the bandwagon effect have remained unexamined. To fill in this research gap, Study 2 of this dissertation examines how individuals use different types of informational cues to make viewing decisions about movies online. According to the dual-process theories and the information cascade theory, this study examines two types of bandwagon effects associated with the two information-processing routes. On one hand, audiences may use quantitative information, such as hit, view, and download counts, as bandwagon cues, and this leads to the heuristic process and the quantitative bandwagon effect. On the other hand, audiences may analyze qualitative information, such as user reviews and comments, and engage in systematic processing, which gives rise to the qualitative bandwagon effect.

Previous studies examined either qualitative or quantitative bandwagon effects in media consumption (Sundar, Oeldorf-Hirsch, & Xu, 2008; Sundar, Xu, & Oeldorf-Hirsch, 2009), but few studies have examined the factors influencing the strength of the two types of bandwagon effects, particularly in the context of consuming audiovisual contents online. When making the viewing selections of movies, to what extent do audiences rely on quality or quantitative informational cues? What are the magnitudes of the qualitative versus quantitative bandwagon effects, respectively? In addition, what are the factors influencing the strength of the two types of bandwagon behaviours? These questions remain unanswered but are crucial in understanding individuals' bandwagon behaviours in the selection of media content products.

Accordingly, an experimental study is carried out to test how the heuristic and systematic processes function in making viewing decision of movies shown on a Website, in order to uncover the underlying psychological process that gives rise to the bandwagon phenomenon. A PDP analysis is conducted with a few adjustments to estimate the separated contributions of the heuristic and systematic processing modes to audiences' selection of Hollywood movies in an online environment, and in turn to reveal how the two types of bandwagon behaviours arise from the heuristic versus systematic decision-making and how the distinct processing routes respectively are triggered by cognitive load and product unfamiliarity.

CHAPTER THREE

STUDY 1: AGGREGATE BANDWAGON EFFECTS OF POPULARITY INFORMATION ON AUDIENCES' SELECTIONS OF HOLLYWOOD MOVIES

Building on the economic theory of information cascade and the psycho-cognitive theories on information processing, this study seeks to test the aggregate bandwagon effect of popularity information on foreign audiences' selections of Hollywood movies. Movies are experience products, meaning that it is difficult for audiences to determine the quality of a movie before watching it. Additionally, given the rapid development of the movie industry, there are numerous movies available for viewing. The industry report shows that there are in total 610 movies released for theatres in the United States and/or Canada in 2011 (Motion Picture Association of America, 2012). This further poses difficulty for movie audiences to make viewing choices. In this case, movie audiences may use historical box office sales as popularity indicators to infer about the quality of the movies when making a viewing selection, which gives rise to a choice bandwagon.

Furthermore, this study aims at inspecting the role of informational uncertainty in the bandwagon effect by examining two specific factors that fundamentally attribute to such uncertainty in the context of movie viewership—the number of movie options available to audiences and how familiar or knowledgeable audiences are about the general cultural background of the content under issue. The role of quality uncertainty in the bandwagon process has been relatively understudied. Particularly, to the best of our knowledge, how the number of options and cultural unfamiliarity stimulate the strength of the bandwagon process in the choices of media products has not been examined.

To bridge this research gap, this study uses global data to examine the presence of the bandwagon effect in the Hollywood movies' viewership and the influence of quality uncertainty on the bandwagon process at a country level. It seeks to contribute to both the theoretical literature and the empirical research on the bandwagon effect in media consumption.

Hypotheses and Research Questions

According to the literature reviewed above, individuals tend to use popularity cues to infer about the quality of the products and imitate preceding others' choices. At the aggregate level, the choice imitation leads to the tendency that audiences' choices would be more concentrated on a few options. Following previous research that used the concentration level of revenue distribution to represent the information cascade (e.g., De Vany & Walls, 1996), the current study compares the concentration level of the box office revenue distribution of Hollywood movies released in foreign countries with that of the same set of movies shown in the United States to examine the aggregate bandwagon effect. This is consistent with the "macro" empiricism, that is, individuals' choices could be inferred from the observation of the aggregate market phenomenon.

As movies are experience products, foreign audiences can hardly assess the quality of the Hollywood movies before watching, but they can use the movies' historical box office revenues in the United States to infer about the movies' quality and then imitate the preceding American audiences' viewing selections. As a result, movies with better box office performance in the United States will be considered better quality for foreign audiences and thus obtain disproportionately greater audience acceptance in a foreign country. Therefore, the concentration level of the box office sales of the Hollywood movies shown in a foreign country would be higher than that of these movies' box office sales in the United States. Accordingly, we postulate that:

H1: The box office revenue distribution of Hollywood movies released in a given country is more concentrated than that of the same set of movies in the United States.

Next, we examine the influence of quality uncertainty on the bandwagon effect. First, the number of available options reflects the uncertainty about the quality of the content offerings. Previous studies revealed a positive influence of the number of available options on the concentration level of audiences' consumption of media content offerings (Cha et al., 2007; Yim, 2003), but did not link the number of available options to the strength of bandwagon effect.

In the context of movie viewership, when audiences are provided by a larger number of available movies, they will receive a greater total amount of movie-related information, which requires a greater amount of cognitive resources to sort out the quality of the movies. That is, more available options lead to a heavier burden in

processing the movie-related information and making viewing decisions. Given the limitation of human cognitive resources, it would make movie audiences feel more uncertain about the quality of the movies. In this case, audiences would rely more on the historical box office records in the United States to infer about movie quality. This will lead to a stronger bandwagon effect, that is, a higher concentration level of the Hollywood movies' box office sale distribution in the given country compared to the American counterpart. Accordingly, *H2* postulates the impact of available choices options on the strength of the bandwagon effect.

H2: The number of available movies will magnify the concentration level of Hollywood movies' box-office revenue distribution in the country relative to that in the United States.

Second, cultural unfamiliarity reflects the level of quality uncertainty. As media content is a cultural product that conveys specific ideas, beliefs, values, and identities of the producers, cultural factors would play an important role in explaining the consumption decision about audiovisual products. Straubhaar (1991) pointed out that people tend to prefer domestic cultural products or products from familiar cultures to those from unfamiliar ones if they are of equal quality, because the content products from domestic or familiar cultures are easier to absorb. Previous studies examined the cultural influences on the consumption of movies or television programs from different production origins (Fu & Lee, 2008; Fu & Sim, 2010; Lee, 2006; 2008; McFadyen et al., 2003; Oh, 2006).

When making viewing choices of Hollywood movies, if foreign audiences are less familiar with the American culture, they will find the movie-related information more difficult to understand and absorb, and thus they will feel more uncertain about the quality of Hollywood movies. Under this circumstance, the foreign audiences tend to rely more on popularity information (i.e., the historical box office performance) to make viewing selections. Therefore, the bandwagon effect will become stronger. As limited previous research has provided evidence about the cultural influences on audiences' bandwagon behaviors, the impact of cultural unfamiliarity on the magnitude of bandwagon effects in movie viewing selections is not a priori obvious, and thus it is addressed empirically as Research Question 1 (RQ1):

RQ1: Will the unfamiliarity with the American culture magnify or lessen the concentration level of Hollywood movies' box-office revenue distribution in the country relative to that in the United States?

Furthermore, the number of available options may affect the strength of the bandwagon effect unevenly across countries where the audiences may vary in terms of their familiarity with the American culture. For the audiences who are unfamiliar with the American culture, they are less likely to rely on specific information about movies when making a viewing choice. In this case, the number of available options and the amount of specific information about a movie may have less impact on reducing their uncertainty about the movies and thus are less likely to influence the strength of the bandwagon process. On the other hand, audiences who are highly familiar with the American culture may be more likely to process specific information about a movie. The strength of the bandwagon process among these movie viewers tends to be more likely to be affected by the number of available options. Accordingly, the inequality in the strength of bandwagon effects caused initially by the number of movie options would be moderated by audiences' unfamiliarity with the American culture. The interaction effect between the number of options and cultural unfamiliarity is addressed as Research Question 2 (*RQ2*).

RQ2: Will the number of available movie options yield a smaller or bigger impact on the relative concentration level of Hollywood movies' box-office revenue distribution in a country that is less familiar with the American culture?

Data and Method

The dataset in this study encompassed Hollywood movies exhibited between 2003 and 2007 in 73 countries and territories other than the United States, including 32 countries in Europe, 4 in Africa, 12 in Asia, 9 in South America, 5 in Central America and the Caribbean, 1 in North America, 2 in the Pacific Region, and 8 in the Middle East.¹ The year of a movie refers to the year when the movie was released in the United States.

¹. Europe: France, Finland, Norway, United Kingdom, Portugal, Greece, Spain, Switzerland, Italy, Cyprus, Denmark, Netherlands, Slovenia, Turkey, Austria, Czech Republic, Hungary, Poland, Romania, Croatia, Bulgaria, Germany, Iceland, Sweden, Belgium, Serbia, Russia, Slovakia, Ukraine, Latvia, Estonia, and Lithuania. Africa: South Africa, Egypt, Kenya, and Nigeria. Asia: Philippines, Taiwan, Hong Kong, Thailand, India, Singapore, South Korea, Japan, Indonesia, Malaysia, China, and Vietnam. South America: Argentina, Chile, Colombia, Peru, Brazil, Venezuela, Bolivia, Ecuador, and Uruguay. Central America and the Caribbean: Puerto Rico, Dominican Republic, Curacao, Lesser Antilles, and Jamaica. North America: Mexico. Pacific Region: Australia and New Zealand. The Middle East: Lebanon, Israel, United Arab Emirates, Bahrain, Jordan, Kuwait, Oman and Qatar.

Dependent Variable

In this study, the bandwagon effect in Hollywood movies' viewership was operationalized by the concentration level of the box office revenue distribution in foreign countries compared to that in the United States for the same set of Hollywood movies. First, the annual box office revenue records of Hollywood movies in the United States as well as in foreign countries during 2003 – 2007 were gathered from the Box Office Mojo website (boxofficemojo.com). The website offers news, detailed analysis and comprehensive box office report online.

Then, the Gini coefficients of movies' box office revenues in foreign countries and in the United States were calculated based on the box office sales data. The Gini coefficient is a commonly employed measure for concentration in economics. It measures the inequality in a certain distribution. A Gini coefficient of zero indicates perfect equality, whereas a Gini coefficient of one means maximal inequality. The Gini coefficient of Hollywood movies' box office revenues in country i in year y and that of the same set of movies' historical box office sales in the United States were calculated, in order to measure the concentration level of the box office performances in foreign countries and in the United States, respectively. Then the ratio of the Gini coefficient in country i to that in the United States in year y was calculated and denoted as $Foreign/USGini_{iy}$. This variable represents the extent to which the concentration level of the box office revenues of Hollywood movies is amplified in foreign countries, which in turn reflects the bandwagon effect in the foreign audiences' viewing selections of Hollywood movies.

Independent Variables

Number of Options

First, the numbers of Hollywood movies released in the given countries were collected. Because the weekly or monthly data on the number of Hollywood movies shown in individual countries were not available, a proxy was used. How many Hollywood movies were released in individual countries each year from 2003 to 2007 was counted on the basis of the data on the Box Office Mojo website, and adopted as the measure for the number of available options. The variable $Opt_Hollywood_{iy}$ represents the number of Hollywood movies shown in country i during the year y .

Secondly, the options other than Hollywood movies were accounted for. As movie viewers may consider both imported Hollywood movies and homemade movies

when making a viewing decision, the number of domestic movies produced and released each year may also affect their viewing choices. The numbers of featured movies that country i produced in year y were collected from the cinema statistics of UNESCO Institute for Statistics website (2013), and denoted as $Opt_Domestic_{iy}$. The database contained national data on film production only for the 2005 – 2007 periods. No data could be found for 2003 and 2004.

Cultural Unfamiliarity

In this study, two measures, namely the use of English language and Hofstede's cultural index, were used to gauge audiences' unfamiliarity with the American culture. First, whether English was spoken or not in the countries under study was utilized to measure cultural unfamiliarity. Language has been widely used by previous research on the consumption of cultural products to measure culture (e.g., Fu, 2006; McFadyen et al., 2003; Oh, 2001). English-speaking countries have a similar language and cultural background with the United States, and thus they are expected to be familiar with the American culture. In this study, a dichotomous dummy variable was used to encode whether English is a commonly used language in a country. $English_i$ was equal to 1 if English was listed as one of the most spoken languages of country i ; 0 otherwise. The language data were collected from *The World Factbook* (Central Intelligence Agency, 2006).

Second, Hofstede's cultural index was employed (Hofstede, 1980, 2001). Following Fu and Govindaraju (2010), this between-country cultural distance is quantified using Hofstede's cultural index (1980, 2001). The Hofstede national culture model takes into account four cultural dimensions—masculinity, individualism, uncertainty avoidance and power distance. Masculinity refers to how much a society values and views heroism, achievement, assertiveness, and aggressive and materialistic behavior. Individualism reflects the strength of social ties among members of a society, such as how much they perceive themselves as separate from a group or feels pressure to conform. Uncertainty avoidance reflects the degree to which people feel unconformable or anxious about the uncertainty, ambiguity or risk. Power distance represents the degree of the unequal distribution of power existed in a society accepted by the members of the society. A significant body of movie research has adopted this index to measure cultural distance across countries and reached consistent

empirical results (e.g., Fu & Govindaraju, 2010; Fu & Lee, 2008; Fu & Sim, 2010; Lee & Bae, 2004; Oh, 2001).

The variable $CulDist_{i-US}$ represents the calculated cultural distance between country i and the United States, and is computed through Kogut and Singh's (1988) formulation using the Hofstede's cultural index:

$$CulDist_{i-US} = \sum_{d=1}^4 [(I_{di} - I_{du})^2 / V_d] / 4$$

Here I_{di} and I_{du} are the cultural indices of country i and the United States, respectively, on each Hofstede's cultural dimension d . The difference between I_{di} and I_{du} represents the degree of dissimilarity between the two countries in the dimension. V_d refers to the variance of the d indices in Hofstede's country sample. The difference between I_{di} and I_{du} is standardized by V_d to correct for scale inequality across the four dimensions. The standardized differentials indicate the cultural distance from the country c to the United States according to the four dimensions on a common scale. Then the four standardized differentials are averaged to generate $CulDist_{i-US}$, which represents the overall cultural distance from the United States to country i .

GDP and Population

In this study, we controlled for the per-capita GDP and the population size of individual countries. The variable GDP_{iy} recorded country i 's per-capita GDP in US\$1,000 of year y , standardized in the year 2000 value. This measured the wealth of the country under study. The national population size in country i in year y , measured in millions, was denoted as $Population_{iy}$, which proxied the market size of the movie industry in individual countries. The GDP_{iy} and $Population_{iy}$ data were collected from World Development Indicators (World Bank Group, 2011).

Education Level

When making viewing decisions about Hollywood movies, the informational cognitive burden for the consumers may also be affected by their educational level. Facing the same amount of movie information, consumers with higher education level may have less cognitive burden in processing the information and making the selection. In this sense, the average education level of each country was also accounted for in the study. The Education Index, which was part of the Human Development

Index, was used to measure the education level of each country. The Education Index, ranging from 0 to 1, was calculated from the mean years of schooling for adults over 25 and the expected years of schooling for children of school entering age. Data of the Education Index of country i were collected from Human Development Report (United Nations Development Programme, 2009) and denoted as $Education_i$.

The variables $English_i$, $CulDist_{i-US}$ and $Education_i$ were time invariant, and thus they cannot account for the changes in the concentration of the box office sales of Hollywood movies caused by the shifts of audiences' unfamiliarity with the American culture or education level over time. However, cultural unfamiliarity and education level should remain relatively unchanged over a short period of time, and the variation of these measures within countries over time should be much more modest compared to the differences across countries at a given point in time. In this sense, the use of the time-invariant variables is unlikely to confound the results of the study.

Time Trend

A set of dummy variables indicating the year of the observation were included to control for the temporal variations of the movie box office sales in individual countries relative to those in the United States. Four year dummies, D_{2004} , D_{2005} , D_{2006} , and D_{2007} , were used to represent the years of observation other than 2003, used as the comparison base.

Note that some countries are missing data for box office revenues of Hollywood movies, the number of imported Hollywood movies or the cultural distance from the United States, and thus are excluded from the sample of the current study. Table 3.1 showed the makeup of the country panels for the five years, respectively. Table 3.2 summarized the basic statistics of the variables for the 2003-2007 country panels as well as for the whole dataset.

Table 3.1

The Country Panels of the Dataset for Study 1

Country	2003	2004	2005	2006	2007
France	x	x	x	x	x
Finland	x	x	x	x	x
Argentina	x	x	x	x	x
Australia	x	x	x	x	x
Norway	x	x	x	x	x
United Kingdom	x	x	x	x	x
Portugal	x	x	x	x	x
Philippines	x	x	x	x	x
Taiwan	x	x	x	x	x
Hong Kong	x	x	x	x	x
Greece	x	x	x	x	x
Thailand	x	x	x	x	x
Spain	x	x	x	x	x
Lebanon	x	x	x	x	x
Chile	x	x	x	x	x
Israel	x	x	x	x	x
Colombia	x	x	x	x	x
Switzerland	x	x	x	x	x
Italy	x	x	x	x	x
Iceland	x	x	x	x	x
New Zealand	x	x	x	x	x
India	x	x	x	x	x
Cyprus	x	x	x	x	x
Peru	x	x	x	x	x
Denmark	x	x	x	x	x
Netherlands	x	x	x	x	x
Slovenia	x	x	x	x	x
Turkey	x	x	x	x	x
Austria	x	x	x	x	x

Table 3.1 (Continued)

Country	2003	2004	2005	2006	2007
Czech Republic	x	x	x	x	x
Hungary	x	x	x	x	x
Mexico	x	x	x	x	x
South Africa	x	x	x	x	x
Poland	x	x	x	x	x
Brazil	x	x	x	x	x
Singapore	x	x	x	x	x
Venezuela	x	x	x	x	x
Romania	x	x	x	x	x
Croatia	x	x	x	x	x
Bulgaria	x	x	x	x	x
Germany	x	x	x	x	x
Sweden	x	x	x	x	x
South Korea	x	x	x	x	x
Japan	x	x	x	x	x
Egypt	x	x	x	x	x
Indonesia	x	x	x	x	x
Malaysia	x	x	x	x	x
Belgium	x	x	x	x	x
Puerto Rico	x	x	x	x	x
Serbia & Montenegro	x	x	x	x	x
Bolivia	x	x	x	x	x
Russia	x	x	x	x	
Dominican Republic		x	x	x	x
United Arab Emirates	x	x	x	x	x
Slovakia	x	x	x	x	x
Ukraine	x	x	x	x	x
China	x	x	x	x	x
Ecuador	x	x	x	x	x
Lesser Antilles	x	x	x	x	x

Table 3.1 (Continued)

Country	2003	2004	2005	2006	2007
Latvia	x	x	x	x	x
Uruguay	x	x	x	x	x
Estonia	x	x	x	x	x
Lithuania	x	x	x	x	x
Kenya	x	x	x	x	x
Jamaica	x	x	x	x	x
Bahrain		x	x	x	x
Jordan		x	x	x	x
Kuwait		x	x	x	x
Oman		x	x	x	x
Qatar		x	x	x	x
Curacao			x	x	x
Vietnam				x	x
Nigeria		x	x	x	x

Table 3.2

Summary Statistics of the Variables in Study I

Variable	Year									
	2003					2004				
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>
<i>Foreign/USGini_{iy}</i>	64	1.347	0.199	0.955	1.901	71	1.183	0.190	0.628	1.815
<i>Opt_Hollywood_{iy}</i>	64	57.156	46.005	2	148	71	72.972	42.492	7	158
<i>Opt_Domestic_{iy}</i>										
<i>English_i</i>	64	0.375	0.488	0	1	71	0.423	0.497	0	1
<i>CulDist_{i-US}</i>	57	2.385	1.257	0.020	4.345	61	2.411	1.236	0.020	4.345
<i>GDP_{iy}</i>	61	12.159	11.460	0.404	38.540	68	12.578	11.783	0.413	39.830
<i>Population_{iy}</i>	61	72.036	214.237	0.290	1288.400	69	66.605	204.518	0.292	1296.075
<i>Education_i</i>	61	0.916	0.073	0.643	0.993	68	0.907	0.078	0.643	0.993

Table 3.2 (Continued)

Variable	Year									
	2005					2006				
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>
<i>Foreign/USGini_{iy}</i>	72	1.139	0.156	0.781	1.526	73	1.214	0.174	0.782	1.788
<i>Opt_Hollywood_{iy}</i>	72	68.194	39.489	6	143	73	85.411	42.527	10	173
<i>Opt_Domestic_{iy}</i>	59	78.288	179.858	1	1041	59	71.373	156.108	1	1091
<i>English_i</i>	72	0.431	0.499	0	1	73	0.438	0.500	0	1
<i>CulDist_{i-US}</i>	61	2.411	1.236	0.020	4.345	62	2.421	1.228	0.020	4.345
<i>GDP_{iy}</i>	68	12.862	11.908	0.427	40.584	69	13.038	12.128	0.442	41.245
<i>Population_{iy}</i>	70	66.310	205.194	0.134	1303.720	71	67.193	205.695	0.137	1311.020
<i>Education_i</i>	68	0.907	0.078	0.643	0.993	69	0.906	0.078	0.643	0.993

Table 3.2 (Continued)

Variable	Year									
	2007					All Years Combined				
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>
<i>Foreign/USGini_{iy}</i>	72	1.070	0.169	0.195	1.418	352	1.187	0.198	0.195	1.901
<i>Opt_Hollywood_{iy}</i>	72	88.542	38.182	2	155	352	74.884	43.009	2	173
<i>Opt_Domestic_{iy}</i>	59	87.102	197.208	1	1146	182	81.396	176.653	1	1146
<i>English_i</i>	72	0.444	0.500	0	1	352	0.423	0.495	0	1
<i>CulDist_{i-US}</i>	61	2.394	1.219	0.020	4.345	302	2.405	1.227	0.020	4.345
<i>GDP_{iy}</i>	68	13.518	12.319	0.461	41.904	334	12.846	11.870	0.404	41.904
<i>Population_{iy}</i>	70	66.791	208.924	0.140	1317.885	341	67.677	206.357	0.134	1317.885
<i>Education_i</i>	68	0.905	0.079	0.643	0.993	334	0.908	0.077	0.643	0.993

The Model for the Aggregate Bandwagon Effect on Movie Selections

First, the presence of bandwagon effects at aggregate level was tested. According to *H1*, the value of the variable *Foreign/USGini_{iy}* should be greater than 1, meaning that the concentration level of Hollywood movies' box office revenues in a foreign country should be higher than that of the same set of movies' box office sales in the United States, which reflects the bandwagon.

Then a model was built to test *H2* and answer *RQ1* and *RQ2*. The influences of the number of options and the cultural unfamiliarity on the strength of the bandwagon effect was addressed in the Cobb-Douglas function, as described below.

$$Foreign/USGini_{iy} = C_0 \cdot Opt_Hollywood_{iy}^a \cdot CulDist_{i-US}^b \cdot \exp(c \cdot English_i) \cdot GDP_{iy}^d \cdot Population_{iy}^e \cdot Education_i^f, \quad (1)$$

$$\text{where } a = \alpha + \beta \cdot CulDist_{i-US} + \gamma \cdot English_i. \quad (2)$$

Diagnosis of the data showed that the relationship between the dependent variable and explanatory variables is not linear. Therefore, the Cobb-Douglas function was used to address the issue of nonlinearity. The Cobb-Douglas function estimates the effects of explanatory variables on the dependent variable in elasticity terms, that is, the percentage change in the dependent variable in response to a 1% change in the independent variable.

Furthermore, the Cobb-Douglas function could detect the moderation of cultural unfamiliarity on the effect of the number of options. The parameter of *Opt_Hollywood_{iy}* was expressed as a function of *CulDist_{i-US}* and *English_i*, as shown in Equation (2). This tests whether cultural unfamiliarity would shift the impact of number of available options on the strength of the bandwagon process among audiences.

Accordingly, coefficient α reflects the standalone impact of the number of movie options on the strength of the bandwagon effect and should be positive based on *H2*. Likewise, b and c correspond to *RQ1*, which examines the influence of audiences' unfamiliarity with the American culture on the strength of the bandwagon effect. The coefficients β and γ correspond to *RQ2*, which tests that cultural unfamiliarity moderates the impact of the number of options on the concentration level of the movies' box office revenue distribution in foreign countries relative to that in the United States.

Then Equation (3) was developed by substituting the parameter a in Equation (1) with Equation (2) and conducting logarithm transformation of Equation (1). The

dependent variable $Foreign/USGini_{iy}$ was regressed over the independent variables in log forms, as shown below.

$$\begin{aligned} \log Foreign/USGini_{iy} = & \text{constant} + \alpha \cdot \log Opt_Hollywood_{iy} + \beta \cdot CulDist_{i-US} \cdot \log Opt_Hollywood_{iy} \\ & + \gamma \cdot English_i \cdot \log Opt_Hollywood_{iy} + b \cdot \log CulDist_{i-US} + c \cdot English_i \\ & + d \cdot \log GDP_{iy} + e \cdot \log Population_{iy} + f \cdot \log Education_i \end{aligned} \quad (3)$$

A set of variant $Foreign/USGini_{iy}$ regressions were carried out to check the robustness of the empirical analysis. In Model 1, $Foreign/USGini_{iy}$ was regressed over the independent variables shown in Equation (3) and the four year dummies. The year dummies account for the variations of the dependent variable over time for other reasons than the research hypotheses. As it was diagnosed that the variable $\log Opt_Hollywood_{iy}$ was highly correlated with $\log GDP_{iy}$ and $\log Education_i$, separately ($r = .468$ and $r = .410$, respectively), Model 2 excluded $\log GDP_{iy}$ and $\log Education_i$ from the regression to address this collinearity problem. In Model 3, the variable $\log Opt_Domestic_{iy}$ was added to control for the amount of information about homemade movies that audiences may be confronted with when making a viewing choice and thus account for the impact on audiences' selections of options other than Hollywood movies. Model 4 entered the dependent variable linearly and the independent variables in log form, in order to test the sensitivity of the results to functional specification.

Results

First, the concentration of box office revenue distribution of Hollywood movies released in a given to that the United States (i.e., HI) was tested. The results showed that 307 out of the 352 observations in the sample have greater-than-1 values for the $Foreign/USGini_{iy}$ variable. That is, for about 87.2% of the countries and regions in this study, their concentration levels of Hollywood movies' box office revenue distribution are higher than that of these movies' box office revenue distribution in the United States, which reflects the bandwagon effect. *Figure 3.1* showed the frequency of the $Foreign/USGini_{iy}$ values. Additionally, t test results revealed that the mean value of the $Foreign/USGini_{iy}$ variable for the whole dataset was significantly larger than 1, $t(351) = 17.729$, $p < .001$ (one-tailed). The mean values of $Foreign/USGini_{iy}$ for each year were also larger than 1 and received

statistical significance respectively. In order, t test results for the year 2003 through 2007 were $t(63) = 13.970, p < .001$, $t(70) = 8.083, p < .001$, $t(71) = 7.569, p < .001$, $t(72) = 10.530, p < .001$, and $t(71) = 3.556, p < .001$ (all the tests were one-tailed). Therefore, $H1$ is supported in general.

Figure 3.1. Frequency of the *Foreign/USGini* values for individual countries and regions

Then, OLS regression was conducted to test *H2* and answer *RQ1* and *RQ2*. The zero-order correlations between the variables were reported in Table 3.3. Table 3.4 reported the regression results of the four models. *H2* postulated that the number of movie options would magnify the concentration level of Hollywood movies' box-office revenue distribution in the country relative to that in the United States. The results of Model 1 showed that $\log Opt_Hollywood_{iy}$ had a positive effect on $\log Foreign/USGini_{iy}$, and was statistically significant at moderate level ($p = .053$). In model 2, in which $\log GDP_{iy}$ and $\log Education_i$ were excluded to preempt the collinearity, $\log Opt_Hollywood_{iy}$ also had a positive role in predicting $\log Foreign/USGini_{iy}$, and became significant at high level ($p = .015$). These results suggested that when other factors are fixed, an increase in the number of Hollywood movies available to audiences would lead to an increase in the ratio of a foreign country's Gini coefficient of Hollywood movies' box-office sales to the American counterpart, indicating an increase in the magnitude of the bandwagon effect on foreign audiences' choices of Hollywood movies.

Table 3.3
Zero-Order Correlations among Variables in Study 1

	1	2	3	4	5
1. $\log Opt_Hollywood_{iy}$					
2. $\log CulDist_{c-US}$	-.358				
3. $\log English_c$	-.101	-.148			
4. $\log Population_{cy}$	-.008	-.024	.136		
5. $\log GDP_{cy}$	.476	-.351	-.212	-.475	
6. $\log Education_c$	.437	-.248	-.381	-.451	.716

In Model 3, $\log Opt_Domestic_{iy}$ was included. The results showed that $\log Opt_Hollywood_{iy}$ was still positively associated with the dependent variable, and was statistically significant at marginal level ($p = 0.077$). Additionally, the variable $\log Opt_Domestic_{iy}$ also had a positive and significant impact on $\log Foreign/USGini_{iy}$. These indicated that when making a viewing selection of Hollywood movies, the available options of imported Hollywood movies as well as of homemade movies have

significant influences on audiences' uncertainty level about Hollywood movies, which impact the strength of the choice bandwagon.

Taken together, the results attested to the positive effect of the amount of information about Hollywood movies on the magnitude of the bandwagon effect. So *H2* receives support here. Considering only the standalone effect of the number of available options, the coefficient of $\log Opt_Hollywood_{iy}$ in Model 1 showed that when the number of Hollywood movies doubles in a given country, the ratio of the Gini coefficient of box office revenues in the country to that in the United States will increase by around 3%. It means that the main effect of the number of available movie options on the strength of bandwagon effect is relatively small in its real magnitude.

Table 3.4

Influence of Number of Options and Cultural Unfamiliarity on Bandwagon Effect

Variable	Model 1		Model 2	
	<i>B</i>	<i>t</i>	<i>B</i>	<i>t</i>
Constant	-0.226	-1.24	-0.077	-0.64
$\log Opt_Hollywood_{iy}$	0.040 [#]	1.94	0.046*	2.44
$\log CulDist_{i-US}$	0.080***	3.98	0.080***	4.01
$CulDist_{i-US} \cdot \log Opt_Hollywood_{iy}$	-0.012***	-3.35	-0.013***	-3.63
$English_i$	-0.573***	-5.11	-0.536***	-5.10
$English_i \cdot \log Opt_Hollywood_{iy}$	0.134***	5.14	0.126***	5.05
$\log GDP_{iy}$	0.010	0.87		
$\log Population_{iy}$	0.020**	2.75	0.015**	2.69
$\log Education_i$	-0.045	-0.29		
D_{2004}	-0.118***	-3.99	-0.115***	-3.82
D_{2005}	-0.141***	-4.78	-0.139***	-4.77
D_{2006}	-0.105***	-3.47	-0.106***	-3.55
D_{2007}	-0.240***	-7.84	-0.238***	-7.89
R^2	0.331		0.320	
Adjusted R^2	0.302		0.296	
<i>N</i>	292		296	

Note. [#] $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 3.4 (Continued)

Variable	Model 3		Model 4	
	<i>B</i>	<i>t</i>	<i>B</i>	<i>t</i>
Constant	-0.107	-0.60	0.757	3.95
$\log Opt_Hollywood_{iy}$	0.045 [#]	1.78	0.027	1.27
$\log Opt_Domestic_{iy}$	0.024*	2.16		
$\log CulDist_{i-US}$	0.049*	2.43	0.079***	3.77
$CulDist_{i-US} \cdot \log Opt_Hollywood_{iy}$	-0.008*	-2.06	-0.013***	-3.46
$English_i$	-0.254	-1.40	-0.428***	-3.63
$English_i \cdot \log Opt_Hollywood_{iy}$	0.060	1.47	0.098***	3.60
$\log GDP_{iy}$			0.166	1.33
$\log Population_{iy}$	0.001	0.16	0.024**	3.12
$\log Education_i$			-0.093	-0.56
D_{2004}			-0.133***	-4.27
D_{2005}			-0.167***	-5.41
D_{2006}	0.039 [#]	1.72	-0.114***	-3.59
D_{2007}	-0.060*	-2.58	-0.253***	-7.86
R^2	0.216		0.296	
Adjusted R^2	0.169		0.266	
<i>N</i>	160		292	

Note. [#] $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

RQ1 considers the effect of cultural unfamiliarity on the concentration level of Hollywood movies' box-office revenue distribution in the country relative to that in the United States. The effects of the variables $\log CulDist_{i-US}$ and $English_i$ are consistent across the models. In Models 1 and 2, $\log CulDist_{i-US}$ was found to have a positive and statistically significant relationship with the dependent variable ($p = .000$ and $p = .000$, respectively). When other factors are under control, for a country that is more culturally distant from the United States, the bandwagon effect on the national audiences' selections of Hollywood movies would be stronger.

The variable $English_i$ was found to be negatively connected to the ratio of foreign Gini to American Gini coefficients, with high statistical significance in Models 1 and 2 ($p = .000$ and $p = .000$, respectively). For English-speaking countries or

territories, the magnitude of bandwagon effect on their audiences' viewing selections of Hollywood movies is, on average, smaller than that in non-English speaking countries and regions, when other factors are under control.

On the whole, the above results indicated a significant and positive standalone effect of the cultural unfamiliarity, measured by cultural distance and the use of English language, on the magnitude of the bandwagon effect. Considering the standalone effect of cultural unfamiliarity, the coefficients for $\log CulDist_{c-US}$ and $English_c$ in Model 1 indicate that when the cultural distance between a foreign country and the United State doubles, the $Foreign/USGini_{cy}$ value will increase by about 6%; the $Foreign/USGini_{cy}$ values for English-speaking countries are, on average, smaller than those for other countries by about 40%.

RQ2 examined the interaction effect between the number of movie options and cultural familiarity. The interaction term $CulDist_{i-US} \cdot \log Opt_Hollywood_{iy}$ had a negative sign with strong statistical significance in Models 1 and 2 ($p = .001$ and $p = .000$, respectively). Given the positive sign of the variable $\log Opt_Hollywood_{iy}$, the cultural familiarity-number of choices interaction moderates the positive effects of $\log Opt_Hollywood_{iy}$. That is, the positive impact of the number of available choices on the strength of bandwagon effect is lesser for countries that are culturally distinct from the United States than those which are culturally similar to the United States.

On the other hand, the interaction term $English_i \cdot \log Opt_Hollywood_{iy}$ was positively associated with the dependent variable and is statistically significant at high level in Models 1 and 2 ($p = .000$ and $p = .000$, respectively). For a non-English-speaking country, the impact of the number of available options on the magnitude of bandwagon effect is lesser, as compared to an English-speaking country.

In summary, the positive effect of the number of movie options on the bandwagon effect in the viewership of Hollywood movies is counteracted by audiences' unfamiliarity with the American culture, measured by cultural distance index and the use of English language. Based on Equation (2) and the estimation results of Model 1, the parameter for the number of movie options was $a = 0.040 - 0.080 \times CulDist_{i-US} + 0.134 \times English_i$. Figures 3.2 and 3.3 showed how the effect of the number of options was moderated by $CulDist_{i-US}$ and $English_i$, respectively, for the range of the data in this study. The increase in the strength of the bandwagon effects caused by the number of available options is unequal across countries and is lesser for national audiences unfamiliar with the American culture.

Figure 3.2. The effect of the number of available options on the strength of bandwagon effects, as indicated by the estimated parameter a , is moderated by the cultural distance between the United States and given countries. The variable $English_i$ is fixed at its mean value.

Figure 3.3. The effect of the number of available movie choices on the strength of bandwagon effects, as indicated by the estimated parameter a , is moderated by the use of English language in given countries. The variable $CulDist_{i-US}$ is fixed at its mean value.

In addition, individual countries' population size had a positive impact on the ratio of foreign to American Gini coefficients of Hollywood movies' box office sales, and was statistically significant in Models 1 and 2 ($p = .006$ and $p = .008$, respectively). One possible explanation is that for a larger country, there will be more potential viewers going to the theaters to watch movies, and this is likely to lead to a stronger bandwagon effect in the viewership of Hollywood movies in that country. This is consistent with the information cascade theory, which suggests the likelihood of an information cascade increases with the number of individuals making the decision (Bikhchandani et al., 1992). GDP per capita and education level of individual countries are not significant predictors for the magnitude of bandwagon effect, which may be due to the collinearity in the current models. In general, the results of the year dummies display a decreasing trend in the concentration level of Hollywood movies' box-office revenue distribution in foreign countries compared to that in the United States during the period of 2003-2007, indicating a decline in the strength of the bandwagon process in foreign audiences' viewership of Hollywood movies.

The results of Model 4 resemble closely what has been found with Models 1 and 2. However, the R^2 of Model 4 is .296, which is inferior to the $R^2 = .331$ of Model 1. Overall, the consistent results across the different models safeguard the robustness of the regression analyses.

Discussion

This study examined the aggregate bandwagon effect on audiences' viewing selections of Hollywood movies. The findings confirmed the presence of the bandwagon process. The results showed that the box office revenue distribution of Hollywood movies in a foreign country is generally more concentrated than that in the United States, which signifies the bandwagon effect on audiences' choices of Hollywood movies at the aggregate level. This is consistent with what is suggested by the information cascade theory (Banerjee, 1992; Bikhchandani et al., 1992, 1998) and the dual-process theories (Chaiken et al., 1989; Petty & Cacioppo, 1986).

The findings of this study also provide empirical evidence on the influence of quality uncertainty on the bandwagon process. First, the number of available movie options is positively associated with the strength of the bandwagon effect. The more options available, the more movie-related information to be processed by media users, the more uncertain they are about the quality of the Hollywood movies, and

consequently the more they tend to use the preceding others' actions to infer about the movie's quality. This leads to a greater bandwagon effect. Second, the unfamiliarity with the cultural background of Hollywood movies has an influence on the strength of the bandwagon effect. In a non-English-speaking country or a country that is more culturally distant from the United States, audiences are less familiar or knowledgeable about the American culture. Thus they would feel more uncertain about the quality of the Hollywood movies and consequently rely more on the predecessors' choices as informational cues. Additionally, unfamiliarity with the American culture would moderate the positive influence of the number of options on the strength of the bandwagon effect. Viewers who are more unfamiliar with the American culture are less likely to process specific information about Hollywood movies to sort out the quality of the movies. In this sense, an increase in the number of movie options leads to unequal increases in the strength of the bandwagon process among viewers who are familiar or unfamiliar with the American culture.

Few studies have examined how the level of uncertainty about the quality of the product impacts the choices of audiovisual media content offerings. This study filled in the research gap by empirically testing the existence of the bandwagon effect in audiences' selections of media products (i.e., Hollywood movies) and the impacts of number of options and cultural unfamiliarity, as two major indicators of the level of quality uncertainty, on the magnitude of the bandwagon effect at the country level. This study contributes to both the theoretical literature and the empirical research on bandwagon effects, and provides insights on the dynamics of people's choices of media products and their tendency for choice imitation.

This study tested the aggregate bandwagon effect on movie viewers' choices of Hollywood movies. Nonetheless, how individual users make their viewing selections about media content offerings has not been fully analyzed. In order to fill in the research gap and complement Study 1, Study 2 examines the bandwagon effect on users' selections of Hollywood movies at the individual level, which is reported and discussed in the following chapter.

CHAPTER FOUR

STUDY 2: INDIVIDUAL BANDWAGON EFFECTS ON AUDIENCES' MOVIE SELECTIONS

The previous chapter of the dissertation examined the bandwagon effect on audiences' selections of Hollywood movies at the aggregate level. The bandwagon effect at individual level, that is, how individual users respond to an enormous number of content offerings, cannot be tested in Study 1. In particular, the underlying information-processing mechanism that guides individuals' viewing decisions have remained unexamined. To fill in the research gap, this chapter examines the bandwagon effect on users' selections of media content products at the individual level, which serves to complement the analysis of the aggregate bandwagon effect and reveal a more complete picture on how humans make decisions about content selection. The information cascade theory and the dual-process models are applied in this study to explore how individuals make decisions in consuming media content products.

Furthermore, Study 1 examined the aggregated bandwagon effect of popularity information (i.e., box office sales) on audiences' viewing decisions about Hollywood movies. In addition to the box office revenue records, there may be other bandwagon cues which can be used by movie viewers to infer about the quality of the movies and make viewing selections. De Vany and Lee (2001) suggested that individuals may observe movies' box office revenue records and/or exchange information through word of mouth (WOM) communication, which leads to bandwagon behaviours. Box office performances are quantitative information and word of mouth provides qualitative information. Both quantitative and qualitative information of movies can trigger the bandwagon mechanism, which is based on the idea that if many others think a movie is good, then it should be good for me as well. Put it differently, audiences can use the two types of information to make their viewing choices and this gives rise to a choice bandwagon.

Traditional bandwagon literature focused on examining the role played by quantitative information in forming a choice bandwagon. Typical quantitative information of a product includes sale volume, download or view counts, and number of bids (Dholakia & Soltysinski, 2001; Fu & Sim, 2011; Hanson & Putler, 1996;

Sundar et al., 2008). A larger amount of sales, counts or bits means higher popularity of the content. Individuals could use such popularity information as bandwagon heuristic and make a convenient view choice.

In addition to quantitative information, people may receive qualitative information through interpersonal communication (i.e., WOM). Particularly, the Internet provides a platform for posting and viewing consumer reviews on a product, which facilitates electronic or online WOM (Godes & Mayzlin, 2004). Previous studies have shown the effect of WOM on consumers' evaluation and decision making, which gives rise to the bandwagon process (Park & Kim, 2009; Sundar et al., 2009; Zhu & Zhang, 2010). For movie viewing, online reviews are qualitative information about a movie, which helps shape people's perception of movie quality and facilitate their viewing decisions (Kim, Park & Park, 2013). More positive reviews and comments would lead to a higher perceived quality of a movie among potential viewers and thus receive more subsequent viewing (Kim, Park, & Park, 2013; Liu, 2006).

From the perspective of the dual-process theories, the use of the two types of information leads to the engagement of the two processing modes, respectively. Previous empirical research usually linked processing modes with types of information—systematic processing is mainly based on analysis of semantic content of messages or arguments and heuristic processing is based on the use of cues which trigger simple cognitive heuristics (e.g., Axsom et al, 1987; Chaiken, 1980; Darke et al., 1998; Ferreira et al, 2006; Maheswaran & Chaiken, 1991). In this sense, using the quantitative information as the bandwagon heuristic and cognitive shortcut to make view choices indicates the heuristic processing; using the qualitative information requires detailed scrutinization and analysis of the semantic content of the reviews and thus indicates the operation of systematic processing.

In order to examine the uses of the two types of informational cues and to draw a fuller and clearer picture of bandwagon effects on making consumption decisions of media contents, this study integrates the dual-process theories with the information cascade theory and examines two types of bandwagon effects associated with the use of two types of information are proposed by this study: (1) the quantitative bandwagon effect where audiences use quantitative information (e.g., hit, view, and download counts) as bandwagon cues, and engage in heuristic processing; and (2) the qualitative bandwagon effect where audiences use qualitative information (e.g., user reviews and

comments) and engage in systematic processing. Both quantitative and qualitative information are available on content websites and thus it is important to understand how individuals respond to different types of information to make their choices of various media content products. Previous studies have examined either qualitative or quantitative bandwagon effects in media choice and consumption (e.g., Sundar, Oeldorf-Hirsch, & Xu, 2008; Sundar, Xu, & Oeldorf-Hirsch, 2009). However, few studies have compared the strength of the two types of bandwagon effects or examined the factors influencing them, particularly in the context of consuming audiovisual contents online. How individuals rely on the two types of information and engage in the two information processing modes to make their media choices remained unclear.

The current study fills up this research gap by using a laboratory experiment to examine the bandwagon effects on user responses to movies shown on an online movie website. The experiment tests how individual users respond to movies shown on a website. The online movies provide a suitable test ground for the bandwagon phenomenon for the reason that movies are experience products and it is difficult for audiences to determine the quality of the movies before actually watching it. This leads to the use of others' preceding responses as indicators of movie quality to make a viewing selection.

It is worth noting that this study tests the individual bandwagon effects in an online setting. Compared with making viewing choices of movies offline where only limited popularity information is available, individuals may be provided with richer informational cues when they select movies to watch in an online environment. An online movie site usually offers quantitative information about a movies' hit, view, or download count, and qualitative information, such as user reviews and comments. In this sense, both quantitative and qualitative information are available to the movie audiences in an online setting, which would stimulate the two types of bandwagon behaviors when making a viewing decision.

Furthermore, this study investigates two specific factors with respect to quality uncertainty, which affect the magnitude of the two types of bandwagon effects on audiences' movie choices: cognitive load that audiences are confronted with and audiences' familiarity with movies.

In summary, this study examines how individuals respond to various informational cues and make viewing selections of movies shown on experimental

web pages, in order to test the strength of quantitative and qualitative bandwagon effects and the factors influencing the two types of bandwagon effects.

Research Question and Hypotheses

Based on the literature reviewed above, this study proposes two types of bandwagon effects in audiences' selections of media contents: the quantitative bandwagon effect which involves the use of quantitative information as bandwagon cues and heuristic processing, and the qualitative bandwagon effect which involves the use of qualitative information and systematic processing. To date, few studies have compared the relative strength of the quantitative versus qualitative bandwagon effects associated with the use of the two types of information, especially in the context of media choice and consumption.

Accordingly, this study examines the two types of bandwagon effects associated with the two processing modes in making viewing decisions of Hollywood movies online. This leads to Research Question 3(RQ3):

RQ3: Is the strength of the qualitative bandwagon effect larger or smaller than that of the quantitative bandwagon effect in audiences' viewing selection of Hollywood movies online?

Next, this study investigates factors influencing the strength of the two processes and the two types of bandwagons. First, the effect of cognitive load is incorporated into the study design. According to the dual-process theories, a heavier cognitive load would lead to less cognitive resource available for individuals, which will in turn affect the information processing and decision making. Given the resource demanding nature of systematic processing, when facing high cognitive load, people would be low in cognitive capacity, and thus tend to rely more on heuristic processing. On the contrary, low cognitive load or high cognitive capacity would lead to the use of systematic processing. Experimental studies have examined the role of cognitive load in information processing by imposing a secondary memory task that competes with the primary task for cognitive resources (Ferreira et al., 2006; Reinhard & Sporer, 2008).

In the context of making viewing selections of content products, when audiences are confronted with heavier cognitive load, they would have fewer cognitive resources available to understand and digest the information about media content products when making their content-selection decisions. As a result, audiences would

rely less on systematic processing and more on heuristic processing. That is, the qualitative bandwagon effect will decrease, whereas the quantitative bandwagon effect increases. This produces the following hypothesis:

H3: All other variables held constant, the strength of qualitative bandwagon effect decreases and the strength of quantitative bandwagon effect increases as cognitive load increases.

Furthermore, individuals may have differences in their need for cognition, that is, the tendency to engage in the thinking process and enjoy it (Cacioppo & Petty, 1982; Cacioppo, Petty, & Kao, 1984). Previous studies have examined the impact of people's need for cognition in various areas, including students' academic performance (Sadowski & Gulgoz, 1992, 1996; Tolentino, Curry, & Leak, 1990), legal decisions (Bornstein, 2004), and life satisfaction (Coutinho & Woolery, 2004; Gauthier, Christopher, Walter, Mourad, & Marek, 2006). In particular, the impact of individuals' differences in need for cognition on information-processing modes has been examined. Cacioppo, Petty and Morris (1983) demonstrated that people who have high need for cognition are more likely to engage in systematic processing in response to a persuasive message. Axsom, Yates and Chaiken (1987) further pointed out that the influence of need for cognition on information processing should be moderated by the level of task involvement. However, how individuals' need for cognition affects the magnitudes of the two information processes under different cognitive load conditions has not been fully examined.

For making viewing decisions about movies, individuals' differences in need for cognition may moderate the impact of cognitive load on their engagement in systematic processing and the qualitative bandwagon effect. The effect of cognitive load on the reliance on the qualitative information to make view choices would be different for audiences with different levels of need for cognition. As the integration effect between cognitive load and need for cognition on the strength of qualitative bandwagon effect is not obvious, it is addressed as Research Question 4 (RQ4).

RQ4: Is there an interaction effect between cognitive load and need for cognition on the strength of the qualitative bandwagon effect?

Then, the impact of individuals' familiarity with media content products on the strength of the two types of bandwagon effects is examined. Based on literature reviewed in Chapter 2, familiarity refers to their prior knowledge about or previous experience in consuming a certain type of media content products, and it comprises

three components—informational familiarity, experiential familiarity and perceived familiarity (Baloglu, 2001; Bettman & Park, 1980; Park & Lessig, 1981). Previous research measured product familiarity from the above perspectives and suggested that the level of product familiarity has an influence on consumers' judgment and purchase decisions of new products, including automobiles and microwave oven (Johnson & Russo, 1984; Park & Lessig, 1981; Punj & Staelin, 1983).

Previous studies on dual-process theories have examined the effect of prior knowledge or experience on the two modes of information processing (Ratneshwar & Chaiken, 1991; Wood, Kallgren, & Preisler, 1985). These studies suggested that individuals who have more relevant prior knowledge or experience tend to engage more in systematic processing and those who have little relevant knowledge or experience tend to rely more on heuristic processing. However, the effect of familiarity with or prior knowledge about a certain type of media products on information processing and view selections has not been examined.

According to previous research on product familiarity and prior knowledge, individuals' familiarity with Hollywood movies would affect their viewing selections of new movies. Full analysis of the qualitative movie information requires more prior knowledge about the content products (Wirth, 2006). In this sense, if audiences have or think they have little prior knowledge on or little previous experience with the type of media products, they will feel unfamiliar with this content category and thus would rely more on the quantitative information to make their selections among new content. As a result, systematic processing (i.e., the qualitative bandwagon effect) could be reduced and the heuristic processing (i.e., the quantitative bandwagon effect) could be strengthened. This leads to the fourth hypothesis:

H4: All other variables held constant, the strength of qualitative bandwagon effect increases and the strength of quantitative bandwagon effect decreases as audiences' familiarity with the content increases.

Method

The Process Dissociation Procedure

I used a 2 (tasks: inclusion task with matching quantitative and qualitative cues vs. exclusion task with mismatching quantitative and qualitative cues) x 2 (cognitive load: high vs. low) mixed design to test the bandwagon effect on individuals' selection of movies in an online setting, utilizing the idea generated from the process

dissociation procedure (PDP). The type of task was a within subject factor, while cognitive load was a between subject factor in the mixed design.

The PDP has been used to discern the contributions of the heuristic and systematic processing modes to an observed phenomenon and was applied to different contexts as a general method for estimating the separated contributions of the two processes (Ferreira et al., 2006; Payne, 2001; Payne & Bishara, 2009; Payne & Stewart, 2007). An experiment under the PDP approach involves two conditions: an inclusion task where systematic and heuristic processing modes work in concert and an exclusion task where the two processing modes work in opposite directions. The estimates of the two processes can be calculated by comparing individuals' performance in the inclusion and exclusion tasks.

In this study, the idea of using inclusion and exclusion tasks to separate the contribution of the two processing modes in PDP was utilized with a few adjustments to fit the current context of consuming media contents. First, this study assumed that the two processes do not co-occur, which is consistent with previous literature in dual-process models (Brewer, 1988; Petty & Cacioppo, 1981). Second, we accounted for the probability of not processing information in both inclusion and exclusion tasks. The modified PDP approach was applied in this study to dissociate heuristic processing from systematic processing and to obtain the estimates of the two processing modes, which correspond to the two types of bandwagon effects. Additionally, the influences of cognitive load, movie familiarity and need for cognition on the strength of the two processes were also examined.

Task Types: A Within Subject Factor

Each participant saw 10 sets of Hollywood movies shown on experimental web pages. In each movie set, participants were presented with two Hollywood movies with similar sounding titles and descriptions, the same genre and release year, but different view counts indicating the number of people who have watched the movies on the website and rankings based on the view counts (i.e., quantitative cues), as well as different viewers' feedbacks and comments (i.e., qualitative cues). The movies' information and viewers' comments were modified from existing Hollywood movies and actual reviews on www.gv.com.sg and www.imdb.com. The former provides comprehensive movie information and user reviews for movies shown in Singapore and the latter is one of the most popular and authoritative sources for information and

reviews about movies around the world. Participants were required to choose which movie they would like to watch in each movie set. Once a participant made a choice between the two movies in a set, he or she was asked to proceed to the next movie set and make a choice again. Each participant repeated the same choice procedure for all 10 sets of the movies.

Among the 10 sets of movies, five sets were inclusion tasks with matching quantitative and qualitative cues and the other five sets were exclusion tasks with mismatching quantitative and qualitative cues. In an inclusion task, the first movie had a lower view count of around 2000 whereas the second had a higher view count of around 8000. The view counts were shown as red icons with each icon indicating 1000 people who have watched this movie on the website. Meanwhile, the first movie had a lower view count, ranking it among the last 15 of a total of 100 movies provided on the website; the second movie is ranked within the top 15 of these 100 movies. In addition, the first movie was given three negative and one positive comments by reviewers and movie goers. The second movie had three positive and one negative comments.

In an exclusion task, most information remained the same as that in the inclusion task, except that for each movie set, the user reviews of the two movies were inverted. That is, the first movie had a lower view count and ranking, but more positive comments; the second movie had a higher view count and ranking, but more negative reviews. An example of the inclusion and exclusion tasks used in the experiment is demonstrated in Figure 4.1.

In the experiment, two lists of movies (List 1 and List 2) were created, with each list includes 10 sets of movies for selection. The inclusion tasks in List 1 were the exclusion tasks in List 2, and vice versa. This was to eliminate the possible bias in the selection caused by the movies rather than the experimental manipulation. In order to guarantee that participants did not see the inclusion and exclusion versions of the same set of movies, the participants exposed to List 1 would not be exposed to List 2. Furthermore, the order of the 10 selections of movies in each list was randomized. To control for the possible order effect, two versions for each list were created by arranging the sequence of the 10 selections of movies differently. This leads to Lists 1A and 1B, and Lists 2A and 2B, respectively.

A Magical Adventure

View counts by the first week of release: [10 red hearts, 10 grey hearts]
(Note: Each icon represents 1000 people who have watched this movie via the website.)
Ranking based on view counts: #93 out of 100 movies in this website
Genre: Animation | Family
Release Year: 15 Jan 2013

The Story
A teenage girl is magically transported into a secret valley and joining in a battle between the forces of good who keep the natural world alive and the forces of evil who wish to destroy it.

User Reviews
Viewer A:
This movie disappointed me. It had all the markings of every tedious cliché in a family animation movie.
Viewer B:
This is the most boring movie I have ever watched. The basic story is too simplistic.
Viewer C:
The animation was incredibly poor. There is a lack of imagination and creativity in the production design.
Viewer D:
It is a beautiful creation of art and computer graphics. The storyline is also decent and well paced.

★ Selection

A Wonderful Journey

View counts by the first week of release: [10 red hearts, 10 grey hearts]
(Note: Each icon represents 1000 people who have watched this movie via the website.)
Ranking based on view counts: #09 out of 100 movies in this website
Genre: Animation | Family
Release Year: 15 Jan 2013

The Story
The movie tells the story of a school girl being accidentally transported to a mysterious forest and helps a group of warriors fight against a group of evil creatures to protect their world.

User Reviews
Viewer E:
It was dazzling, grand and spectacular. Watching the movie is a pleasing experience that deserves applause.
Viewer F:
The film is brilliant. It tells an interesting story and features strong emotional depth.
Viewer G:
The graphics and animation in the movie are bad. It overlooks many details in creating the world.
Viewer H:
This is the most fantastic visual animation I've ever seen. Gorgeous graphics and interesting storyline.

★ Selection

(a)

My Dream

View counts by the first week of release: [10 red hearts, 10 grey hearts]
(Note: Each icon represents 1000 people who have watched this movie via the website.)
Ranking based on view counts: #86 out of 100 movies in this website
Genre: Musical | Romance
Release Year: 03 Jan 2013

The Story
This is an intriguing story about love, dream and redemption, which happened in the 19th-century United States. A former gang leader fell in love with a young waitress.

User Review
Viewer A:
I actually liked the movie from start to finish. It was well written, well acted and well directed.
Viewer B:
The movie starts with a bang immediately and keeps going. The story is really exciting.
Viewer C:
The movie was horrible. The leading actors have a lot of talent but didn't use any of it.
Viewer D:
A fantastic performance from the whole cast. The costuming and set design was also impeccable.

★ Selection

My Wish

View counts by the first week of release: [10 red hearts, 10 grey hearts]
(Note: Each icon represents 1000 people who have watched this movie via the website.)
Ranking based on view counts: #02 out of 100 movies in this website
Genre: Musical | Romance
Release Year: 03 Jan 2013

The Story
The movie tells an enthralling story of dream, passion and sacrifice in the 19th-century United States. An ex-prisoner met a shop assistant and fell in love with her.

User Reviews
Viewer E:
It was a poorly-paced movie with bad direction, cinematography, sets and costumes.
Viewer F:
The storyline is too predictable. After watching it for 30 minutes, I know what is going to happen next.
Viewer G:
The whole movie flowed beautifully. And the performances were brilliant and subtle.
Viewer H:
The casting was some of the worst I have ever seen. The main actor's voice was terrible.

★ Selection

(b)

Figure 4.1. Inclusion task in movie selections (a) and Exclusion task in movie selections (b)

Cognitive Load: A Between-Subject Factor

During the viewing selection process, there was a memory task competing with the movie selection task for cognitive resources. Two experimental conditions, corresponding to the two levels of cognitive load, were used in the experiment. In the high cognitive load condition, the participants were required to memorize a 7-digit random number while making the viewing selection between the two movies. In the low cognitive load condition, the participants were not required to memorize any numbers.

Procedure

First, participants were given a brief oral introduction to the experiment and its ostensible purpose when they arrived at the laboratory. Then, they were asked to perform the computer task, which included a series of selections of movies on the experimental web pages. Participants in the high load condition were presented with a web page with a 7-digit serial number shown on the computer screen. The number was displayed for 5 seconds and participants were required to memorize the number. Then they proceeded to the following screen where a set of two Hollywood movies and related information were shown. Participants were required to choose which movie they preferred to watch. At the same time, they were required to keep rehearsing the number showed in the previous screen. Participants were asked to indicate their selection by clicking the selection button under the movie and the responses were collected on the computer. When finishing the selection, they proceeded to the next screen, where they were asked to enter the memorized number. Then they were instructed to press a “continue” button to proceed to the next movie set. This sequence was repeated for each set of movies with a different random number appeared for each set. For the participants in the low cognitive load condition, the task of memorizing serial numbers was absent.

After completing the movie selection tasks, the participants were asked to complete a paper-and-pencil survey, including a trivia quiz of their knowledge about Hollywood movies and a set of questions about their general movie viewing behaviour and demographic information. At the end, participants were thanked and debriefed.

Measures

Dependent Measures

The number of choosing the first movie (i.e., the dominant option) under the inclusion task, and the number of choosing the first movie (i.e., the systematic choice) and of choosing the second movie (i.e., the heuristic choice) under the exclusion tasks were obtained for each participant across the 10 selections, and denoted as *Dominant_Choice_of_Inclusion_Task*, *Systematic_Choice_of_Exclusion_Task* and *Heuristic_Choice_of_Exclusion_Task*, respectively.

In an inclusion task, choosing the dominant option could be the consequences of heuristic processing which involves the use of view counts and rankings as quality indicators, or of systematic processing which involves careful analysis of the user reviews. If people choose an option randomly without processing the movie information, there is a 50% chance of selecting the dominant option. The probability of choosing the dominant option should be the sum of the probability of systematic processing, the probability of heuristic processing, and 50% of the probability of random selection. This leads to the following equation:

$$Dominant_Choice_of_Inclusion_Task = S + H + 1/2(1-S)(1-H) \quad (1)$$

Here S represents the use of systematic processing; H the use of heuristic processing.

In an exclusion task, making the selection based on the detailed reviews would lead to the systematic choice; using the view counts and ranking as quality indicator would lead to the heuristic choice. Additionally, there is an equal chance of choosing either of the two options if people select randomly. Thus, the probability of reaching the systematic choice is the probability of systematic processing plus 50% of the probability of making random selections, as expressed below,

$$Systematic_Choice_of_Exclusion_Task = S + 1/2(1-H)(1-S). \quad (2)$$

Similarly, the probability of choosing the heuristic choice is the probability of heuristic processing plus 50% of the probability of random selection, as stated below,

$$Heuristic_Choice_of_Exclusion_Task = H + 1/2(1-H)(1-S). \quad (3)$$

Then individual H and S estimates were computed based on equations (1) to (3), and were used as the dependent measures:

$$H = \text{Dominant_Choice_of_Inclusion_Task} \quad (4)$$

– *Systematic_Choice_of_Exclusion_Task*,

$$S = \text{Dominant_Choice_of_Inclusion_Task} \quad (5)$$

– *Heuristic_Choice_of_Exclusion_Task*.

Cognitive Load

A dummy variable indicating the experimental condition to which each participant was assigned was generated and denoted as *Load*. The variable *Load* was set at 0 if the participant was in the high load condition and at 1 if the participant was in the low load condition.

Familiarity with Hollywood Movies

In this study, individuals' familiarity with Hollywood movies was measured as a composite of informational familiarity, experiential familiarity and perceived familiarity. This is consistent with previous studies on product familiarity (e.g., Johnson & Russo, 1984; Punj & Staelin, 1983). First, the informational familiarity was measured through a movie trivia quiz, which included 20 multiple choice questions about Hollywood movie facts, quotes, actors, directors and the Oscars. The movie trivia quiz serves to test the amount of information or prior knowledge the participants have about Hollywood movies, which reflect the informational familiarity. The questions were selected from FunTriva.com, one of the largest trivia website in the world, which has over 1,000,000 trivia questions in 10,000 categories and over 1.6 million registered members. Each question in the trivia quiz earned 1 mark. Individuals' scores of the quiz were used as the measure for the informational familiarity with Hollywood movies.

Second, the experiential familiarity was measured by two items. The participants were asked to use a 7-point scale to rate how often they watch Hollywood movies in cinema and/or through other channels, ranging from "once a year or less" to "daily or almost daily", and a 7-point scale to rate how often they search for information about Hollywood movies, ranging from "never" to "always". These items were adapted from previous studies of product familiarity (Johnson & Russo, 1984; Park & Lessig, 1981; Punj & Staelin, 1983).

Third, the perceived familiarity was measured by a single item — "How familiar are you with Hollywood movies and stars?" — with responses ranging from

"not at all familiar" to "very familiar". This item was developed by Johnson and Russo (1984) and adjusted to the present context.

Then the standardized values of the above measures were summed and used as the composite measure for movie familiarity (Cronbach's $\alpha = .605$), denoted as *Familiarity*.

Need for Cognition

The measure of people's need for cognition consisted of 18 items, which was adapted from previous studies. The 18-item Need for Cognition (NFC) scale was developed and utilized to measure individuals' tendency to engage in the thinking process and enjoy it (Cacioppo & Petty, 1982; Cacioppo, Petty, & Kao, 1984) and has been used to measure people's need for cognition in various areas of studies (e.g., Axsom, Yates & Chaiken, 1987; Bornstein, 2004; Cacioppo, Petty & Morris, 1983; Coutinho & Woolery, 2004; Sadowski & Gulgoz, 1992a, 1996; Tolentino, Curry, & Leak, 1990).

The participants were asked to use a 7-point scale to rate if the statements about the tendency to engage in thinking apply to them, ranging from *not at all* to *exactly*. The items were summed and averaged to form the composite measure for individuals' need for cognition (Cronbach's $\alpha = .857$), denoted as *NFC*.

Demographics

Participants were required to report on their general demographic information, which includes gender and age. The two variables were denoted as *Gender* and *Age*, respectively. Note that *Gender* was coded as a dummy variable in this study, with 1 indicating that the participant was male and 0 otherwise.

Participants

The participants of the experiment were recruited at a public university in Singapore. Singapore is an import-dominated movie exhibition market. Accounting for more than 85% of the box-office sales in Singapore, Hollywood movies have been well accepted by local audiences and dominated the local movie market for decades (Fu & Lee, 2008; Uhde & Uhde, 2000).

One hundred and one undergraduate students participated in the study and were randomly assigned to one of the two cognitive load conditions. Note that in this study,

the participants who reported negative values for the variables H or S were excluded from the sample. Based on equations (1) to (5), negative values of H or S indicate that the participant did not process view counts or movie reviews presented on the experimental webpages. That is, participants may make a viewing selection on the basis of information other than view counts and reviews. Although the two movies in each set have similar sounding titles and descriptions, the possibility of relying on personal preference for movie titles or descriptions to make viewing selections cannot be completely ruled out. This may also lead to a negative value of H or S . As this study focused on how individuals respond to qualitative and quantitative information to make their viewing selections of movies, the participants who reported negative values for the variables of H or S were excluded from the sample. This reduced the sample size to 83.

Additionally, under high cognitive load condition, the serial numbers the participants entered were compared with the actual serial numbers to determine whether the participants memorized the numbers correctly. The participants who made more than four errors in the memory tasks (i.e., 40% of total numbers that need to be memorized) were excluded from the sample as making many errors in memorizing the numbers indicate that the participants may not have been engaged in the cognitive load memory task and the task may not occupy their cognitive capacity (Ferreira et al., 2006). It further reduced the sample size to 77. Of the total sample, 54 are female and 23 are male. The average age was 22. Table 4.1 reported the summary statistics.

Results

Pre-Tests and Manipulation Checks

Before the formal experiment, a pre-test was conducted to test whether there was a significant difference between the positive and negative movie reviews. Ten participants were recruited and asked to use a 10-point scale to rate the 80 reviews on how these reviews would impact their viewing decisions, ranging from very negative to very positive. The results of one-way ANOVA showed a significant difference in the ratings between positive reviews and negative ones ($p = .000$), and the ratings of the positive reviews ($M = 7.723$, $SD = 0.407$) were, on average, higher than those of the negative reviews ($M = 2.570$, $SD = 0.651$).

Next, a follow-up interview was conducted. The participants were asked to read the information of 10 pairs of movies and compare the titles and storylines of the two movies in each pair. If the participants felt the two movies did not sound similar, they were further asked to make changes on the movie titles and the descriptions of storylines to improve the similarity. Revisions of the titles and storylines were made according to the participants' responses.

After the experiment, several separate one-way between-subjects ANOVA were conducted to test whether the versions of movie lists or the order of the movie sets in each list affect the S and H estimates. The results showed that there was neither version effect nor list effect on the S estimate ($p = .748$ and $p = .274$, respectively) or the H estimate ($p = .778$ and $p = .202$, respectively).

Table 4.1

Summary Statistics of the Variables in Study 2

<i>Variable</i>	<i>N</i>	<i>Min</i>	<i>Max</i>	<i>M</i>	<i>SD</i>
<i>S</i>	77	0.00	5.00	2.47	1.90
<i>H</i>	77	0.00	5.00	1.91	1.89
<i>Load</i>	77	0.00	1.00	0.49	0.50
<i>Familiarity</i>	77	0.73	3.56	2.16	0.55
<i>NFC</i>	77	1.94	6.00	4.10	0.81
<i>Age</i>	77	19.00	26.00	21.73	1.54
<i>Gender</i>	77	0.00	1.00	0.30	0.46

Testing Hypotheses and Answering Research Questions

First, a one-way within-subjects ANOVA was conducted to compare the values of H and S estimates and thus serves to answer *RQ3* regarding the strength of the qualitative and quantitative bandwagon effects in audiences' viewing selection of Hollywood movies online. The values of H and S measure the strength of heuristic and systematic processing, which reflect the strength of the quantitative and qualitative bandwagon effects, respectively. The results showed that the value of S estimate was larger than that of H estimate ($M = 2.468$, $SD = 1.903$, and $M = 1.909$, $SD = 1.893$, respectively). But the difference between H and S estimates is not statistically significant, $F(1, 76) = 1.831$, $p = .180$. This indicates that there is no significant

difference in the overall strength of systematic and heuristic processes. When the participants made viewing selections of Hollywood movies shown on the experimental web pages, there was no significant difference in their use of qualitative information (i.e., comments and feedbacks from previous users) and quantitative information (i.e., view counts and rankings) as bandwagon cues to judge the quality of the contents and to make consumption decisions.

In the next step, the *S* and *H* estimates were regressed over cognitive load, movie familiarity, need for cognition, as well as demographic variables, in order to test *H3* and *H4* which postulate the effects of cognitive load and movie familiarity on the two types of bandwagon effects, as well as answer *RQ4* regarding the interaction effect between cognitive load and need for cognition. Because the *H* and *S* estimates were assessed as count data, Poisson regression was conducted.

Table 4.2 reported the regression results. In the regression of the *S* estimate, the results showed that there is a significant main effect of cognitive load ($p = .025$). When other factors held constant, the participants under low cognitive load are more likely to engage in systematic processing when making viewing decisions, which leads to a greater qualitative bandwagon effect. The coefficient for the variable *Load* indicated that the strength of qualitative bandwagon effect under low cognitive load is five times greater than that under high cognitive load².

In the regression of the *H* estimate, the results revealed a significant main effect of cognitive load on people's use of heuristic processing mode ($p = .043$). Specifically, switching from high to low cognitive load leads to a decrease in the strength of the quantitative bandwagon effect by around 85%.

Taken together, the cognitive load variable was a significant predictor for both the *S* and *H* estimates, indicating that the cognitive load imposed on audiences has a significantly negative relationship with the strength of qualitative and positive relationship with the strength of quantitative bandwagon effects, in making a viewing selection of Hollywood movies. So *H3* was supported.

² Based on the coefficient of *Load* estimated from Poisson regression, switching from high load to low load condition would lead to an increase in *S* by $\exp(1.812) - 1 = 5.123$.

Table 4.2

Results of Poisson Regressions in Study 2

Variable	<i>S</i>		<i>H</i>	
	<i>B</i>	<i>p</i>	<i>B</i>	<i>p</i>
Constant	-0.166	.896	2.536 [#]	.080
Cognitive load				
High load (reference)				
Low load	1.812*	.025	-1.879*	.043
NFC	0.276 [#]	.078	-0.187	.287
Interaction				
Low Load*NFC	-0.376*	.047	0.436*	.048
High Load*NFC				
Familiarity	0.200	.154	-0.288 [#]	.065
Gender				
Male (reference)				
Female	0.088	.615	-0.226	.260
Age	-0.033	.531	-0.015	.808
<i>N</i>	77		77	

Note. [#] $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

In the *S* regression, there was not any significant relationship between *Familiarity* and the *S* estimate ($p = .154$). On the other hand, the results of *H* regression showed that *Familiarity* was negatively associated with the *H* estimate, which was statistically significant at a marginal level ($p = .065$). These indicate that for participants who are less familiar with Hollywood movies, they tend to rely more on the heuristic cues to make their viewing decisions, which result in a greater quantitative bandwagon effect. However, individuals' familiarity with Hollywood movies has relatively little impact on the strength of the qualitative bandwagon effect. So *H4* was partially supported.

In order to answer *RQ4*, the interaction effect between cognitive load and need for cognition on bandwagon effects was examined. The results of *S* regression revealed that there is a significant interaction between cognitive load conditions and people's need for cognition ($p = .047$), which reflects the different impacts of peoples'

need for cognition on their use of systematic processing under high versus low extraneous cognitive load. For the subjects under high cognitive load, there was a positive relationship between need for cognition and the S estimate, which was significant only at a marginal level ($p = .078$). The coefficient of NFC ($B = 0.276$) indicates that a one-unit increase in the need for cognition will increase the strength of the qualitative bandwagon effect by around 32%. The impact of need for cognition on the strength of the qualitative bandwagon effect is not statistically distinguishable from zero under low cognitive load ($p = .358$). On the other hand, the results of H regression showed a significant interaction effect between cognitive load and need for cognition ($p = .048$), indicating the impact of cognitive load on heuristic processing (i.e., viewing selections) varies, depending on the level of peoples' need for cognition. An increase in people's need for cognition leads to an increase in the strength of heuristic processing under low cognitive load condition ($p = .073$), but have little impact for subjects under high cognitive load ($p = .287$).

The age and gender of the participants were found to have little impact on S or H estimates and thus have little influence on the strength of the qualitative and quantitative bandwagon effects ($p = .531$, $p = .615$, $p = .808$ and $p = .260$, respectively).

To test the robustness of the Poisson regression analyses, an additional set of OLS regressions were conducted to estimate the coefficients of the model. The results were shown in Table 4.3. The signs of the coefficients were consistent with what we found with the Poisson regressions, though at a lower level of significance. Overall, the stability across the two sets of regressions safeguards the robustness of the current model.

Table 4.3

Results of OLS regressions in Study 2

Variable	<i>S</i>		<i>H</i>	
	<i>B</i>	<i>p</i>	<i>B</i>	<i>p</i>
Constant	4.578	.224	1.562	.678
<i>Load</i>	-4.293 [#]	.074	3.445	.152
<i>NFC</i>	-0.273	.435	0.446	.204
<i>Load*NFC</i>	0.896	.117	-0.803	.161
<i>Familiarity</i>	0.476	.250	-0.550	.186
<i>Gender</i>	-0.236	.656	0.425	.425
<i>Age</i>	-0.077	.629	-0.022	.890
<i>R</i> ²	.078		.063	
<i>N</i>	77		77	

Note. [#]*p* < .10. **p* < .05. ***p* < .01. ****p* < .001.

Discussion

This study investigated the relative impact of qualitative (e.g., using qualitative information such as comments and reviews) and quantitative bandwagon cues (e.g., using quantitative information such as view and download counts as bandwagon cues) on people's viewing selection of online movies, based on the underlying psychological mechanism of information processing. The results imply that there is no significant difference in the overall strength of the qualitative and quantitative bandwagon effects when individuals make viewing decisions about movies. Particularly in an online environment where both the quantitative and qualitative information are readily available, audiences may utilize both types of information. In this sense, both qualitative and quantitative bandwagon cues are in presence and there is no clear trend that one of the bandwagon cues is of primary importance.

The relative strength of the two types of bandwagon effects was found to be influenced by individuals' cognitive load and movie familiarity. When audiences are confronted with high cognitive load, there are limited cognitive resources available to make the viewing selections. Under this circumstance, audiences are less likely to use the systematic processing mode, but rely more on the heuristic processing mode. As a

result, the strength of qualitative bandwagon effect is likely to be attenuated, while the strength of the quantitative bandwagon effect is to be magnified.

The results also showed that for participants with higher need for cognition, when they were confronted with high extraneous cognitive load, they depended more on the systematic processing mode. This finding implies a significant moderating effect of need for cognition on the impact of cognitive load on the strength of the qualitative bandwagon effect.

The results also showed that the participants who were less familiar with Hollywood movies relied more on the quantitative information as heuristic cues when they made viewing decisions, which resulted in a greater heuristic processing and thus a stronger quantitative bandwagon effect. This finding implies that a low level of content familiarity can stimulate heuristic processing and thus lead to a greater quantitative bandwagon effect.

Taken together, the results of this study confirmed the presence of bandwagon effects on the viewing selections of movies in an online environment. This is consistent with the existing literature of bandwagon effects (e.g., De Vany & Walls, 1996; Fu & Sim, 2011; Knobloch-Westerwick et al., 2005; Salganik et al., 2006; Xu & Fu, 2013). In addition, this study further specifies two types of bandwagon effects associated with the two information-processing routes, based on dual-process theories. To date, few studies have compared the relative strength of the quantitative versus qualitative bandwagon effects in media consumption. This study filled in this research gap by applying the modified PDP to examine the separate contributions of heuristic and systematic processing modes to individuals' selection process and developing estimates for the qualitative and quantitative bandwagon effects in media choice.

Another contribution of the current study is that it examined how the factors related to quality uncertainty influenced the strength of the two types of bandwagon effects. The cognitive load variable, which is traditionally associated with the two information-processing routes (Chaiken, 1980; Chaiken & Eagly, 1989; Ferreira et al., 2006; Petty & Cacioppo, 1986; Reinhard & Sporer, 2008), was found to influence the strength of both qualitative and quantitative bandwagon effects. The moderating effect of need for cognition on the effect of cognitive load on the strength of qualitative

bandwagon effects is also consistent with what has been suggested by Cacioppo, Petty and Morris (1983). On the other hand, the effect of movie familiarity on the strength of the two types of bandwagon effects in movie selection was also examined by integrating the concept of product familiarity with the dual-process theories. The findings are in general consistent with the existing literature in dual-process theories (Ratneshwar & Chaiken, 1991; Wood, Kallgren, & Preisler, 1985) and consumer research (Johnson & Russo, 1984; Park & Lessig, 1981; Punj & Staelin, 1983).

CHAPTER FIVE CONCLUSION

Findings and Contributions

This dissertation examined bandwagon effects on audiences' selections of media products (i.e., movies) at both the country level and the individual level and investigated how quality uncertainty influences the strength of bandwagon effects at the two levels, respectively. In particular, this dissertation conducted a comprehensive analysis of real-market data on the viewership of Hollywood movies (i.e., Study 1) and a laboratory experiment which tests how individuals respond to movies shown on an online movie website (i.e., Study 2).

Both Study 1 and Study 2 confirm the presence of bandwagon effects in audiences' viewing selections of movies. The findings of Study 1 attest to the bandwagon process at the aggregate level. The results of regression analysis show that the concentration level of Hollywood movies' box office revenues in most foreign countries is higher than that in the United States, which signifies the aggregate bandwagon effect on audiences' choices of Hollywood movies in general.

On the other hand, Study 2 examines bandwagon effects on the viewing selections of movies at the individual level. It further specifies two types of bandwagon effects associated with the two information-processing routes on the basis of dual-process theories. The findings suggest that both qualitative and quantitative bandwagon effects are in presence when individuals make viewing decisions about movies. Put it differently, both qualitative and quantitative informational cues are used when movie audiences make their viewing selections.

Furthermore, both studies investigate the role played by quality uncertainty on the strength of the bandwagon effects. Study 1 reveals a significant impact of quality uncertainty, measured by number of available movies and cultural unfamiliarity, on the bandwagon effect at the aggregate level. Both the number of options and cultural unfamiliarity are positively related to the strength of the bandwagon effect. Moreover, cultural unfamiliarity moderates the positive impact of the number of movie options on the strength of the bandwagon effect. That is, an increase in the number of movie choices leads to unequal increases in the strength of the bandwagon effect among movie viewers who are familiar or unfamiliar with the American culture.

Study 2 examines two specific factors with respect to quality uncertainty, which affect the magnitude of qualitative versus quantitative bandwagon effects at the

individual level: cognitive load that audiences are confronted with, audiences' familiarity with movies, and audiences' need for cognition. The results show that the relative strength of the two types of bandwagon effects is sensitive to the cognitive load imposed on audiences and audiences' unfamiliarity with Hollywood movies. An increase in the cognitive load imposed on audiences would lead to a decline in the strength of the qualitative bandwagon effect and an increase in that of the quantitative bandwagon effect. On the other hand, a higher level of unfamiliarity with Hollywood movies would stimulate heuristic processing and thus lead to a greater quantitative bandwagon effect.

Taken together, this dissertation examined the existence of the bandwagon effect in audiences' selections of media products (i.e., Hollywood movies) and the impacts of quality uncertainty on the magnitude of the bandwagon effect at both the country and individual levels. Study 1 used global data to empirically test the existence of the bandwagon effect in audiences' selections of media products (i.e., Hollywood movies) at the country level. To the best of my knowledge, the impact of people's uncertainty about the quality of the content product on the bandwagon process has remained unexamined. Study 1 filled in the research gap by examining the impacts of the number of movie options and audiences' cultural unfamiliarity, as two major indicators of the level of quality uncertainty, on the magnitude of the bandwagon effect.

Study 2 examined the bandwagon effect on movie selections at the individual level and specified qualitative and quantitative bandwagon effects associated with the systematic and heuristic information-processing routes. To compare the relative strength of the two types of bandwagon effects in media consumption, this study modified PDP to examine the separate contributions of heuristic and systematic processing modes to individuals' selection process and developed estimates for the qualitative and quantitative bandwagon effects. It further examined the influences of cognitive load and movie familiarity on the strength of the two types of bandwagon effects, which provided insights on the role of quality uncertainty.

The two studies make both theoretical and methodological contributions to the literature on bandwagon effects by examining movie audiences' viewing selections at both the country and individual level and inspecting the role played by quality uncertainty. They shed lights to the understanding about how people make content-selection decisions and their tendency for choice imitation.

This dissertation has some practical implications. First of all, the presence of bandwagon effects on the viewing choices of media content products could provide insights for media policy-makers. The diversity of media content has been concerned as a policy objective. Regulations and policies related to diversity usually emphasize on the supply side, for instance, providing more items or channels to audiences. Such regulations are based on the assumption that individuals can carefully consider all the options provided and make a rational choice of media consumption, so that they will consume a diversity of content if they are provided with a diversity of content offerings (e.g., Napoli, 1999). However, the bandwagon mechanism provides a better understanding on the demand side. There is an attention scarcity and people tend to herd, which violates the assumption of rational evaluation of all content offerings. As a result, media users may confirm to the same choice made by predecessors, instead of consuming a diversity of content products. Such a choice bandwagon could be socially inefficient and diminish the overall social welfare. Accordingly, regulations and policies that promote diversity should check the reality on the demand side and inhibit bandwagon effects.

In particular, the findings of Study 1 suggest that the aggregate bandwagon effect is subject to the influence of uncertainty about the quality of the content, reflected by the number of options and cultural unfamiliarity. In this sense, media-policy makers should take into account the number of content products to be imported and the domestic audiences' unfamiliarity with the culture background of the content offerings. Offering too many media products or products from highly unfamiliar cultures may increase the audiences' uncertainty about the quality of the products, which stimulates the bandwagon effect and hinders the diversity in viewing.

On the other hand, the findings of this dissertation could provide implications for the ever-growing media and entertainment industry. It is important for content providers to understand the possible bandwagon effect in consumer behavior so that can offer media users with bandwagon heuristics and effectively impact media consumers' viewing decisions. Particularly, Internet users use different types of bandwagon cues when making viewing choices of online contents. Their cognitive load and familiarity with the content offerings would impact their reliance on different bandwagon cues and affect the magnitudes of different types of bandwagon effects. Accordingly, an online movie or television portal could improve the design of its

website to influence audiences' viewing selections, and in turn attract more users and maximize the profit.

Nowadays, multitasking becomes a prevalent phenomenon in media use, that is, people tend to consume different media items or contents concurrently (Roberts & Foehr, 2008), resulting in a relatively high cognitive load. Given the significant impact of cognitive load on the strength of bandwagon effects found in the current study, online video website administrators or content providers may use quantitative informational cues, such as the view, hit or download counts to promote the quantitative bandwagon effect and attract potential viewer.

Additionally, this dissertation found that audiences' familiarity with media contents has an impact on bandwagon effects. In this sense, if the media content is from a production origin that audiences are unfamiliar with, the online video website could make the view, hit or download counts more salient and in turn impact media users' content-selection decisions.

Limitations and Directions for Future Research

This dissertation does incur some limitations. For Study 1, first of all, because weekly or monthly data on the number of released Hollywood movies or box office revenues in different countries are not available, Study 1 used yearly data and examined the concentration level of Hollywood movies' box office revenues and the influence of the number of available movies on the yearly basis. As the release dates of movies are not random and more movies could be released during specific periods of high demand, such as summer vacations and Christmas holidays, it would be rewarding for future research to examine the bandwagon effect of movie viewing selections using weekly or monthly data. This may contribute to a clearer pattern of the choice bandwagon in movie viewership.

Second, Study 1 used of English and Hofstede's cultural index to proxy the unfamiliarity with American culture. Other measures may be used as proxies for cultural familiarity. For instance, the number of McDonalds per capita has been used as the measure for Americanization (Craig, Douglas, & Bennett, 2009; Craig, Greene, & Douglas, 2005). However, due to the lack of available global data, this variable was not included in Study 1. Future research may incorporate such variables to measure cultural unfamiliarity and improve the estimation results.

Third, over the recent years there has been an emerging trend of international collaboration in movie production and distribution, which leads to a more diverse cultural input. Typical examples include *The Lord of the Rings* and *Iron Man 3*. Such phenomenon of co-producing may cater the taste of the global audiences and overcome the cultural barriers, which helps Hollywood movies attract more foreign audiences. For future research, how the cross-national co-production affect global audiences' viewing selections would be worth investigating.

Fourth, Study 1 examined the bandwagon effect on audiences' selections of movies at the country level. There may be factors other than the historical box office sales that impact audience's choices, such as movie genre, directors, actors, and so forth. Previous studies have also examined the influence of other factors, such as star power and movie genre, on the market performance of individual movies (Bagella & Becchetti, 1999; Desai & Basuroy, 2005; De Vany & Walls, 1999; Prag & Casavant 1994; Ravid, 1999). Future research examining the bandwagon effect of movies can further examine the effect of other factors, such as the impact of movie stars and famous directors on the viewing decision-making process.

Fifth, in Study 1, the number of copies of each Hollywood movie exported and exhibited in foreign countries would affect the availability of the movies to foreign audiences and thus impact on audiences' viewing selections. Due to the data limitation, the impact of the number of copies of Hollywood movies was not examined in this study. However, the availability of a Hollywood movie in a foreign country is determined by both the number of copies available and the length of screening. The distributors could meet market demand by either requesting additional copies or screening the movie for a longer period. Therefore, the number of copies initially imported is unlikely to seriously affect the overall performance of a Hollywood movie in a foreign market.

Sixth, Study 1 focused on audiences' viewing selections of domestic and Hollywood movies, but did not include movies imported from other production origins. Many countries and regions other than U.S., such as India, Hong Kong, France, and Great Britain, produce a large number of movies every year. Additionally, the trade of media products within cultural-linguistic regions is large and growing, particularly in Latin America, Asia and the Middle East (Straubhaar, 2007). It would be rewarding for future research to examine the bandwagon effect of viewing

selections of movies imported from other countries, particularly within the same cultural-linguistic regions.

Seventh, Study 1 examined the bandwagon behavior in movie selection by testing whether foreign audiences would use the preceding U.S. audiences' viewing choices as popularity information to infer about the quality of a movie. However, Hollywood movies have tended to have a simultaneous worldwide release in recent years, and in some cases, movies have been released outside the U.S. first. Thus in some circumstances, audiences' viewing selections may follow the choices made by local predecessors rather than the U.S. audiences. Additionally, audiences' viewing selections could also be affected by the choices made by peers or comments made by experts. Future research could examine the influences of local audiences, peers and expert reviews in the study of the choice bandwagon in movie viewership.

Study 2 also has some limitations. First, the sample size of Study 2 is relatively small. As a result, it may not allow us to fully see the statistical significance in some of the relationships under examination. Future study using a larger sample could be beneficial to improve the estimation and to reveal a clearer picture on the qualitative and quantitative bandwagon effects in media consumption.

Second, most participants of the experiment were university students based in Singapore. In this case, the findings generated from such a non-Western sample may not be generalized to other groups of people. To test the external validity of the findings, future research could replicate the current experiment in another country or region, especially in a Western context.

Third, the computer task of Study 2 requires participants to choose one out of two Hollywood movies in each selection. This laboratory setting is different from the real-life situation where individuals are confronted with hundreds of available movies on a website. Therefore, the findings of this study need to be interpreted with caution, particularly when being applied to explain the viewing selections of online content offerings in reality. It would also be interesting and rewarding to extend the current study to operationalize cognitive load by the number of options in each movie set and thus examine how individuals make their viewing selections when facing more options.

Fourth, the experimental web pages used in Study 2 resembled the design of actual online video sites and put quantitative information before qualitative information. Under this circumstance, participants may read quantitative information

first and thus are more likely to rely on it to make their selection. This could lead to an overestimation of the magnitude of the quantitative bandwagon effect. However, the effects of cognitive load and movie familiarity on bandwagon effects should not be critically confounded. It would be rewarding for future research to examine bandwagon effects when individuals are presented with qualitative and quantitative information in different orders.

Fifth, when making their content choices on the experimental website in Study 2, it is possible that participants might not have read all the reviews provided for each movie. Although such participants might not have fully analyzed all the information, they analyzed at least part of the semantic content and thus should be still counted as replying on the WOM to make content selections, which indicates the qualitative bandwagon.

Finally, there may be other types of quantitative or qualitative information manipulations. In Study 2, the operationalization of qualitative information was based on the semantic content of user reviews and the number of positive versus negative reviews. Future studies can utilize other types of qualitative information, for instance, creating positive versus negative comments with antonymous pairs of words. Furthermore, user rating could be utilized as another type of qualitative information. Future studies can be conducted using user rating to extend the findings of the current experiment.

As a final remark, we believe that the findings of this dissertation make both theoretical and methodological contributions to the literature on bandwagon effects and shed lights on our understanding of information processing and decision making in the context of movie selection at both aggregate and individual levels.

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APPENDICES

Appendix A. Screenshots of Movie Information Pages in List 1A

Movie Set 1

The Movie Channel

My Dream

View counts by the first week of release:

(Note: Each red icon represents 1000 people who have watched this movie on this website.)

Ranking based on view counts: #86 out of 100 movies in this website

Genre: Musical | Romance

Release Date: 03 Jan 2013

Story

This is an intriguing story about love, dream and redemption, which happened in the 19th-century United States. A former gang leader fell in love with a young waitress.

User Review

Viewer A:
I actually liked the movie from start to finish. It was well written, well acted and well directed.

Viewer B:
The movie starts with a bang immediately and keeps going. The story is really exciting.

Viewer C:
The movie was horrible. The leading actors have a lot of talent but didn't use any of it.

Viewer D:
A fantastic performance from the whole cast. The costuming and set design was also impeccable.

★ Selection

My Wish

View counts by the first week of release:

(Note: Each red icon represents 1000 people who have watched this movie on this website.)

Ranking based on view counts: #02 out of 100 movies in this website

Genre: Musical | Romance

Release Date: 03 Jan 2013

Story

The movie tells an enthralling story of dream, passion and sacrifice in the 19th-century United States. An ex-prisoner met a shop assistant and fell in love with her.

User Reviews

Viewer E:
It was a poorly-paced movie with bad direction, cinematography, sets and costumes.

Viewer F:
The storyline is too predictable. After watching it for 30 minutes, I know what is going to happen next.

Viewer G:
The whole movie flowed beautifully. And the performances were brilliant and subtle.

Viewer H:
The casting was some of the worst I have ever seen. The main actor's voice was terrible.

★ Selection

The Movie Channel	
<h3>The Special Operation</h3> <p>View counts by the first week of release:</p> <p>(Note: Each red icon represents 1000 people who have watched this movie on the website.) Ranking based on view counts: #10 out of 100 movies in this website Genre: Action Adventure Release Date: 21 Mar 2013</p> <hr/> <h4>Story</h4> <p>An elite military unit comprised of well-trained soldiers fights against an evil organization led by a notorious arms dealer and safeguards world peace.</p> <hr/> <h4>User Reviews</h4> <p>Viewer A: There are no twists or turns in the film. You can guess the story very well if you miss it a bit. Viewer B: Great movie! It cleverly balances action with intrigue and a bitter sweet ending. Viewer C: I was disappointed with this film. The plot jumped too much, and the action didn't tie in well. Viewer D: The action and fighting scenes are not exciting and there is a lack of fortitude and creativity.</p> <p style="text-align: center;">★ Selection</p>	<h3>The Special Task</h3> <p>View counts by the first week of release:</p> <p>(Note: Each red icon represents 1000 people who have watched this movie on the website.) Ranking based on view counts: #94 out of 100 movies in this website Genre: Action Adventure Release Date: 21 Mar 2013</p> <hr/> <h4>Story</h4> <p>An elite military unit comprised of special operatives fights against an evil force led by an infamous arms merchant to maintain world peace.</p> <hr/> <h4>User Reviews</h4> <p>Viewer E: A magnificent show put up by different characters. It is the action movie that defies all action movies. Viewer F: The movie was neither thrilling enough nor intellectually stimulating enough. Viewer G: Everything is perfect. The cast is excellent, the script is interesting and it has some nice plot twists. Viewer H: It's a great entertaining action movie with real fast-paced action and incredible visuals.</p> <p style="text-align: center;">★ Selection</p>

Movie Set 3

The Movie Channel

A Magical Adventure

View counts by the first week of release: (Note: Each red icon represents 1000 people who have watched this movie on the website.)

Ranking based on view counts: #93 out of 100 movies in this website

Genre: Animation | Family

Release Date: 15 Jan 2013

Story

A teenage girl is magically transported into a secret valley and joining in a battle between the forces of good who keep the natural world alive and the forces of evil who wish to destroy it.

User Reviews

Viewer A:
This movie disappointed me. It had all the markings of every tedious cliché in a family animation movie.

Viewer B:
This is the most boring movie I have ever watched. The basic story is too simplistic.

Viewer C:
The animation was incredibly poor. There is a lack of imagination and creativity in the production design.

Viewer D:
It is a beautiful creation of art and computer graphics. The storyline is also decent and well paced.

★ Selection

A Wonderful Journey

View counts by the first week of release: (Note: Each red icon represents 1000 people who have watched this movie on the website.)

Ranking based on view counts: #09 out of 100 movies in this website

Genre: Animation | Family

Release Date: 15 Jan 2013

Story

The movie tells the story of a school girl being accidentally transported to a mysterious forest and helps a group of warriors fight against a group of evil creatures to protect their world.

User Reviews

Viewer E:
It was dazzling, grand and spectacular. Watching the movie is a pleasing experience that deserves applause.

Viewer F:
The film is brilliant. It tells an interesting story and features strong emotional depth.

Viewer G:
The graphics and animation in the movie are bad. It overlooks many details in creating the world.

Viewer H:
This is the most fantastic visual animation I've ever seen. Gorgeous graphics and interesting storyline.

★ Selection

Movie Set 4

The Movie Channel

Job Internship

View counts by the first week of release:

(Note: Each red icon represents 1000 people who have watched this movie on the website.)

Ranking based on view counts: **#08** out of 100 movies in this website

Genre: Comedy

Release Date: 23 Apr 2012

Story

Two middle-aged bus drivers try to keep up with the digital era and found their ways into a coveted internship at one of the best Internet corporations in the world.

User Reviews

Viewer A:
The jokes, the gags, and the dialogue in the movie were rather bland.

Viewer B:
The plot was creative and clever. The dialogues and jokes are quite funny and humorous.

Viewer C:
It's refreshing to find such a great comedy movie that stands outside of that tiresome trend.

Viewer D:
The movie had a funny script and nice plot. It can keep you smiling the entire time.

The Interns

View counts by the first week of release:

(Note: Each red icon represents 1000 people who have watched this movie on the website.)

Ranking based on view counts: **#89** out of 100 movies in this website

Genre: Comedy

Release Date: 23 Apr 2012

Story

Two shop clerks at their forties want to prove that they are not obsolete in the digital world, and start an internship at one of the world's top web services companies.

User Reviews

Viewer E:
The movie was great from beginning to end. There are plenty of jokes to keep you laughing.

Viewer F:
The movie was a simple film with a simple plot. Not much of humor in the movie.

Viewer G:
The movie lacks originality. There are many similarities between this movie and some other comedies.

Viewer H:
The storyline was clichéd and flat. The script was poorly written and can hardly impress me.

Movie Set 5

The Movie Channel

Future World

View counts by the first week of release: (Note: Each red icon represents 1000 people who have watched this movie on the website.)

Ranking based on view counts: #96 out of 100 movies in this website

Genre: Sci-Fi

Release Date: 26 Feb 2013

Story

One man lives on the future Earth that has nearly been destroyed during a war with alien invaders. He questions what he knows about himself and the world, and starts a battle to save mankind.

User Reviews

Viewer A:
This is an original and groundbreaking sci-fi movie. A must watch movie for sci-fi movie fans.

Viewer B:
The movie has not only excellent technology and graphics, but also a well-written storyline and great cast.

Viewer C:
The storyline is shallow. Some ideas from the movie seem to originate from other sci-fi film.

Viewer D:
Nice gadget and great views. It was one of the most visually spectacular that I have ever seen.

Selection

Future Earth

View counts by the first week of release: (Note: Each red icon represents 1000 people who have watched this movie on the website.)

Ranking based on view counts: #03 out of 100 movies in this website

Genre: Sci-Fi

Release Date: 26 Feb 2013

Story

On the future Earth that has been devastated after decades of war with the alien, one man questions everything he believed about himself and the Earth, and fights for the fate of mankind.

User Reviews

Viewer E:
The plot is predictable and the visuals and sound effects are poor. I was bored by the movie.

Viewer F:
The storyline was too predictable, the actions were poorly designed and the performances were superficial.

Viewer G:
Good storyline and stunning visuals. I thoroughly enjoyed the show without being bored for a second.

Viewer H:
The visual effects in the movie are poor. I must say that I was sorely disappointed by this flick.

Selection

Movie Set 6

The Movie Channel

War against Zombies

View counts by the first week of release:

(Note: Each red icon represents 1000 people who have watched this movie on the website.)

Ranking based on view counts: **#95** out of 100 movies in this website

Genre: Action | Drama | Horror

Release Date: 3 Oct 2012

Story

When a worldwide Zombie panic is threatening the entire human race. The United Nations officers traverse the world to find the origin and to fight against zombies.

User Reviews

Viewer A:
The acting and visual effects in the movie were truly disappointing. Not worth watching.

Viewer B:
It was a very good movie with stunning special effects and exciting action scenes.

Viewer C:
The story was incredibly poor. You cannot get attached to any of the characters on the film.

Viewer D:
The storyline looks very predictable. I was bored from the middle till the end of the movie.

Selection

Battle against Zombies

View counts by the first week of release:

(Note: Each red icon represents 1000 people who have watched this movie on the website.)

Ranking based on view counts: **#11** out of 100 movies in this website

Genre: Action | Drama | Horror

Release Date: 3 Oct 2012

Story

In face of the war against zombies, the United Nations agents track the origin of the zombie pandemic and stop the zombies from spreading to the entire world.

User Reviews

Viewer E:
Overall, this movie is one of the best blockbusters of the year, with good acting, directing, and polished visuals.

Viewer F:
The movie was sold on its special effects, but they are not very impressive by today's standards.

Viewer G:
This movie really managed to capture the sense of hopelessness, fear and urgency.

Viewer H:
Fast pace action from the start till the end. Keep me on the edge of my seat throughout the movie.

Selection

Movie Set 7

The Movie Channel

The Enchanted Land

View counts by the first week of release:

(Note: Each red icon represents 1000 people who have watched this movie on the website.)

Ranking based on view counts: **#06** out of 100 movies in this website

Genre: Crime / Thriller

Release Date: 26 Sep 2012

Story

The movie pits a story of a young dancer accidentally entering a fantasyland and then being involved in a war between sorcerers and sorceresses.

User Reviews

Viewer A:
I love the movie. From great visuals to imaginative characters and plot, this film has everything.

Viewer B:
Overall, I really enjoyed this movie. It starts with more imagination and creativity than any movies I've seen.

Viewer C:
This is a vivid and colorful tale of wonderment. More visually attractive than any other film to date.

Viewer D:
The visuals are poor. There is a big lack of gorgeousness and creativity in the visual artistry.

★ Selection

The Mysterious Land

View counts by the first week of release:

(Note: Each red icon represents 1000 people who have watched this movie on the website.)

Ranking based on view counts: **#91** out of 100 movies in this website

Genre: Adventure / Fantasy

Release Date: 26 Sep 2012

Story

The movie tells a story about a young singer, who is swept away to a magical land and is forced into a power struggle between witches and warlocks.

User Reviews

Viewer E:
The movie was disappointing. The writing is bad, the acting is awkward, and the visuals are dull.

Viewer F:
The movie is terrible. The plot is poorly written which makes the story lacks imagination.

Viewer G:
Going into this film with high expectations for the visual effects will leave you disappointed.

Viewer H:
The visual effects were awesome. The movie can give you a bright and colorful world of wonder.

★ Selection

Movie Set 8

The Movie Channel

National Defence

View counts by the first week of release: (Note: Each red icon represents 1000 people who have watched this movie on the website.)

Ranking based on view counts: #04 out of 100 movies in this website

Genre: Action | Thriller

Release Date: 18 Nov 2012

Story

When the White House is captured by a terrorist mastermind, a visitor who is trapped in the building helps the national security team to retake the White House and avert a bigger disaster.

User Reviews

Viewer A:
It's a great show. Great action and great plot with consecutive waves of laughter.

Viewer B:
A very predictable American Hero movie. The plot is clichéd, and the action is not exciting.

Viewer C:
It's just one of those movies with the same old plot with a bit modification.

Viewer D:
The movie has an absurd plot and poorly designed visual and sound effects.

★ Selection

National Security

View counts by the first week of release: (Note: Each red icon represents 1000 people who have watched this movie on the website.)

Ranking based on view counts: #99 out of 100 movies in this website

Genre: Action | Thriller

Release Date: 18 Nov 2012

Story

When the White House is under a terrorist attack, a tourist finds himself trapped in the building. He works with the nation's security team to protect the White House and save the country.

User Reviews

Viewer E:
The action scenes are so unreal and sometimes insane, which is quite disappointing.

Viewer F:
It's a great action movie and truly heartwarming towards the end. I thoroughly enjoyed this movie.

Viewer G:
It's an original movie from the start to the end. A must-watch for all action movie fans!

Viewer H:
It's another great movie to watch for all the special effects and nice storyline.

★ Selection

Movie Set 9

The Movie Channel

Chasing Your Dream

View counts by the first week of release:

(Note: Each red icon represents 1000 people who have watched this movie on the website.)

Ranking based on view counts: #97 out of 100 movies in this website

Genre: Drama

Release Date: 7 Dec 2012

Story

The movie is set in the early 20th century. Chasing his own American dream, a retired policeman comes to New York City and writes his own legend of love, dream and hope.

User Reviews

Viewer A:
This movie delivered a complete drama in total style. It is filmed so beautifully.

Viewer B:
It is a fine piece of work with stunning visual effects and music. Gives a sense of the modern times.

Viewer C:
The visuals and costumes in the movie were so unreal. The modern music was poorly used.

Viewer D:
The cast is beautiful as is the script. The scenes are a visual feast.

Selection

Pursuing Your Dream

View counts by the first week of release:

(Note: Each red icon represents 1000 people who have watched this movie on the website.)

Ranking based on view counts: #12 out of 100 movies in this website

Genre: Drama

Release Date: 7 Dec 2012

Story

The movie pits a story in the early 20th century, when a war veteran takes a job in New York City, starts his American dream and pens a tale of love, passion and dream.

User Reviews

Viewer E:
The entire movie lacks subtlety and becomes more superficial and boring by the end.

Viewer F:
Everything from the music to the characters is just wrong. The movie was disappointing.

Viewer G:
The visuals and soundtrack were captivating and lavish. The acting was great as well.

Viewer H:
I was disappointed by the slow pace and the poor performance by the actors.

Selection

Movie Set 10

The Movie Channel

The Magicians

View counts by the first week of release: (Note: Each red icon represents 1000 people who have watched this movie on the website.)

Ranking based on view counts: #05 out of 100 movies in this website

Genre: Crime Thriller

Release Date: 22 May 2013

Story

The movie tells a story about a team of elite CIA agents tracking three world-class Vegas magicians, who plot and implement a series of daring robbery against corrupt companies.

User Reviews

Viewer A:
The film was really enjoyable. It has a lot of wit, suspense, magic, twists, and action.

Viewer B:
I absolutely love this film. It is, the visuals, the locations, and the plot twists.

Viewer C:
The storyline was unique and interesting. The big twist in the end surprised me.

Viewer D:
There is a lack of character development and a lack of well-written plot for the movie.

★ Selection

The Illusionists

View counts by the first week of release: (Note: Each red icon represents 1000 people who have watched this movie on the website.)

Ranking based on view counts: #84 out of 100 movies in this website

Genre: Crime Thriller

Release Date: 22 May 2013

Story

The movie pits an elite FBI squad in a game of cat and mouse against a super-team of the world's greatest illusionists who pull off a series of bold heists against corrupt business leaders.

User Reviews

Viewer E:
The movie was poorly directed and edited. You cannot understand what is going on.

Viewer F:
The visuals and tricks in the movie are all unbelievable and unrealistic.

Viewer G:
The plot is not original. In fact it was too predictable and clichéd.

Viewer H:
The plot was fun and wild. It was hard to predict what was going to happen next.

★ Selection

Appendix B. Screenshots of Movie Information Pages in List 2A

Movie Set 1

The Movie Channel

My Dream

View counts by the first week of release:

(Note: Each red icon represents 1000 people who have watched this movie on this website.)

Ranking based on view counts: #86 out of 100 movies in the website

Genre: Musical | Romance

Release Date: 03 Jan 2013

Story

This is an intriguing story about love, dream and redemption, which happened in the 19th-century United States. A former gang leader fell in love with a young waitress.

User Reviews

Viewer A:
It was a poorly-paced movie with bad direction, cinematography, sets and costumes.

Viewer B:
The storyline is too predictable. After watching it for 30 minutes, I know what is going to happen next.

Viewer C:
The whole movie flowed beautifully. And the performances were brilliant and subtle.

Viewer D:
The casting was some of the worst I have ever seen. The main actor's voice was terrible.

Selection

My Wish

View counts by the first week of release:

(Note: Each red icon represents 1000 people who have watched this movie on this website.)

Ranking based on view counts: #02 out of 100 movies in the website

Genre: Musical | Romance

Release Date: 03 Jan 2013

Story

The movie tells an enthralling story of dream, passion and sacrifice in the 19th-century United States. An ex-prisoner met a shop assistant and fell in love with her.

User Review

Viewer E:
I actually liked the movie from start to finish. It was well written, well acted and well directed.

Viewer F:
The movie starts with a bang immediately and keeps going. The story is really exciting.

Viewer G:
The movie was horrible. The leading actors have a lot of talent but didn't use any of it.

Viewer H:
A fantastic performance from the whole cast. The costuming and set design was also impeccable.

Selection

Movie Set 2

The Movie Channel

The Special Operation

View counts by the first week of release: (Note: Each red icon represents 1000 people who have watched this movie on the website.)

Ranking based on view counts: **#10** out of 100 movies in the website

Genre: Action | Adventure

Release Date: 21 Mar 2013

Story

An elite military unit comprised of well-trained soldiers fights against an evil organization led by a notorious arms dealer and safeguards world peace.

User Reviews

Viewer A:
A magnificent show put up by different characters. It is the action movie that defies all action movies.

Viewer B:
The movie was neither thrilling enough nor intellectually stimulating enough.

Viewer C:
Everything is perfect. The cast is excellent, the script is interesting and it has some nice plot twists.

Viewer D:
It's a great entertaining action movie with real fast-paced action and incredible visuals.

★ Selection

The Special Task

View counts by the first week of release: (Note: Each red icon represents 1000 people who have watched this movie on the website.)

Ranking based on view counts: **#94** out of 100 movies in the website

Genre: Action | Adventure

Release Date: 21 Mar 2013

Story

An elite military unit comprised of special operatives fights against an evil force led by an infamous arms merchant and maintains world peace.

User Reviews

Viewer E:
There are no twists or turns in the film. You can guess the story very well if you miss it a bit.

Viewer F:
Great movie! It cleverly balances action with intrigue and a bitter sweet ending.

Viewer G:
I was disappointed with this film. The plot jumped too much, and the action didn't tie in well.

Viewer H:
The action and fighting scenes are not exciting and there is a lack of fortitude and creativity.

★ Selection

Movie Set 3

The Movie Channel

A Magical Adventure

View counts by the first week of release:

(Note: Each red icon represents 1000 people who have watched this movie on the website.)

Ranking based on view counts: **#93** out of 100 movies in the website

Genre: Animation / Family

Release Date: 15 Jan 2013

Story

A teenage girl is magically transported into a secret valley and joining in a battle between the forces of good who keep the natural world alive and the forces of evil who wish to destroy it.

User Reviews

Viewer A:
It was dazzling, grand and spectacular. Watching the movie is a pleasing experience that deserves applause.

Viewer B:
The film is brilliant. It tells an interesting story and features strong emotional depth.

Viewer C:
The graphics and animation in the movie are bad. It overlooks many details in creating the world.

Viewer D:
This is the most fantastic visual animation I've ever seen. Gorgeous graphics and interesting storyline.

★ Selection

A Wonderful Journey

View counts by the first week of release:

(Note: Each red icon represents 1000 people who have watched this movie on the website.)

Ranking based on view counts: **#09** out of 100 movies in the website

Genre: Animation / Family

Release Date: 15 Jan 2013

Story

The movie tells the story of a school girl being accidentally transported to a mysterious forest and helps a group of warriors fight against a group of evil creatures to protect their world.

User Reviews

Viewer E:
This movie disappointed me. It had all the markings of every tedious cliché in a family animation movie.

Viewer F:
This is the most boring movie I have ever watched. The basic story is too simplistic.

Viewer G:
The animation was incredibly poor. There is a lack of imagination and creativity in the production design.

Viewer H:
It is a beautiful creation of art and computer graphics. The storyline is also decent and well paced.

★ Selection

Movie Set 4

The Movie Channel

Job Internship

View counts by the first week of release:

(Note: Each red icon represents 1000 people who have watched this movie on the website.)

Ranking based on view counts: **#08** out of 1000 movies in the website

Genre: Comedy

Release Date: 23 Apr 2012

Story

Two middle-aged bus drivers try to keep up with the digital era and found their ways into a coveted internship at one of the best Internet corporations in the world.

User Reviews

Viewer A:
The movie was great from beginning to end. There are plenty of jokes to keep you laughing.

Viewer B:
The movie was a simple film with a simple plot. Not much of humor in the movie.

Viewer C:
The movie lacks originality. There are many similarities between this movie and some other comedies.

Viewer D:
The storyline was clichéd and flat. The script was poorly written and can hardly impress me.

★ Selection

The Interns

View counts by the first week of release:

(Note: Each red icon represents 1000 people who have watched this movie on the website.)

Ranking based on view counts: **#89** out of 100 movies in the website

Genre: Comedy

Release Date: 23 Apr 2012

Story

Two shop clerks at their forties want to prove that they are not obsolete in the digital world, and start an internship at one of the world's top web services companies.

User Reviews

Viewer E:
The jokes, the gags, and the dialogue in the movie were rather bland.

Viewer F:
The plot was creative and clever. The dialogues and jokes are quite funny and humorous.

Viewer G:
It's refreshing to find such a great comedy movie that stands outside of that tiresome trend.

Viewer H:
The movie had a funny script and nice plot. It can keep you smiling the entire time.

★ Selection

Movie Set 5

The Movie Channel

Future World

View counts by the first week of release:

(Note: Each red icon represents 1000 people who have watched this movie on the website.)

Ranking based on view counts: #96 out of 100 movies in the website

Genre: Sci-Fi

Release Date: 26 Feb 2013

Story

One man lives on the future Earth that has nearly been destroyed during a war with alien invaders. He questions what he knows about himself and the world, and starts a battle to save mankind.

User Reviews

Viewer A:
The plot is predictable and the visuals and sound effects are poor. I was bored by the movie.

Viewer B:
The storyline was too predictable, the actions were poorly designed and the performances were superficial.

Viewer C:
Good storyline and stunning visuals. I thoroughly enjoyed the show without being bored for a second.

Viewer D:
The visual effects in the movie are poor. I must say that I was sorely disappointed by this flick.

★ Selection

Future Earth

View counts by the first week of release:

(Note: Each red icon represents 1000 people who have watched this movie on the website.)

Ranking based on view counts: #03 out of 100 movies in the website

Genre: Sci-Fi

Release Date: 26 Feb 2013

Story

On the future Earth that has been devastated after decades of war with the alien, one man questions everything he believed about himself and the Earth, and fights for the fate of mankind.

User Reviews

Viewer E:
This is an original and groundbreaking sci-fi movie. A must watch movie for sci-fi movie fans.

Viewer F:
The movie has not only excellent technology and graphics, but also a well-written storyline and great cast.

Viewer G:
The storyline is shallow. Some ideas from the movie seem to originate from other sci-fi film.

Viewer H:
Nice gadget and great views. It was one of the most visually spectacular that I have ever seen.

★ Selection

Movie Set 6

The Movie Channel

War against Zombies

View counts by the first week of release:

(Note: Each red icon represents 1000 people who have watched this movie on the website.)

Ranking based on view counts: #95 out of 100 movies in the website

Genre: Action | Drama | Horror

Release Date: 3 Oct 2012

Story

When a worldwide Zombie panic is threatening the entire human race. The United Nations officers traverse the world to find the origin and to fight against zombies.

User Reviews

Viewer A:
Overall, this movie is one of the best blockbusters of the year, with good acting, directing, and polished visuals.

Viewer B:
The movie was sold on its special effects, but they are not very impressive by today's standards.

Viewer C:
This movie really managed to capture the sense of hopelessness, fear and urgency.

Viewer D:
Fast pace action from the start till the end. Keep me on the edge of my seat throughout the movie.

★ Selection

Battle against Zombies

View counts by the first week of release:

(Note: Each red icon represents 1000 people who have watched this movie on the website.)

Ranking based on view counts: #11 out of 100 movies in the website

Genre: Action | Drama | Horror

Release Date: 3 Oct 2012

Story

In face of the war against zombies, the United Nations agents track the origin of the zombie pandemic and stop the zombies from spreading to the entire world.

User Reviews

Viewer E:
The acting and visual effects in the movie were truly disappointing. Not worth watching.

Viewer F:
It was a very good movie with stunning special effects and exciting action scenes.

Viewer G:
The story was incredibly poor. You cannot get attached to any of the characters on the film.

Viewer H:
The storyline looks very predictable. I was bored from the middle till the end of the movie.

★ Selection

Movie Set 7

The Movie Channel

The Enchanted Land

View counts by the first week of release:

(Note: Each red icon represents 1000 people who have watched this movie on the website.)

Ranking based on view counts: #06 out of 100 movies in the website

Genre: Adventure | Fantasy

Release Date: 26 Sep 2012

Story

The movie pits a story of a young dancer accidentally entering a fantasyland and then being involved in a war between sorcerers and sorceresses.

User Reviews

Viewer A:
The movie was disappointing. The writing is bad, the acting is awkward, and the visuals are dull.

Viewer B:
The movie is terrible. The plot is poorly written which makes the story lacks imagination.

Viewer C:
Going into this film with high expectations for the visual effects will leave you disappointed.

Viewer D:
The visual effects were awesome. The movie can give you a bright and colorful world of wonder.

★ Selection

The Mysterious Land

View counts by the first week of release:

(Note: Each red icon represents 1000 people who have watched this movie on the website.)

Ranking based on view counts: #91 out of 100 movies in the website

Genre: Crime | Thriller

Release Date: 26 Sep 2012

Story

The movie tells a story about a young singer, who is swept away to a magical land and is forced into a power struggle between witches and warlocks.

User Reviews

Viewer E:
I love the movie. From great visuals to imaginative characters and plot, this film has everything.

Viewer F:
Overall, I really enjoyed this movie. It starts with more imagination and creativity than any movies I've seen.

Viewer G:
This is a vivid and colorful tale of wonderment. More visually attractive than any other film to date.

Viewer H:
The visuals are poor. There is a big lack of gorgeousness and creativity in the visual artistry.

★ Selection

Movie Set 8

The Movie Channel

National Defence

View counts by the first week of release:

(Note: Each red icon represents 1000 people who have watched this movie on the website.)

Ranking based on view counts: #04 out of 100 movies in the website

Genre: Action / Thriller

Release Date: 18 Nov 2012

Story

When the White House is captured by a terrorist mastermind, a visitor who is trapped in the building helps the national security team to retake the White House and avert a bigger disaster.

User Reviews

Viewer A:
The action scenes are so unreal and sometimes insane, which is quite disappointing.

Viewer B:
It's a great action movie and truly heartwarming towards the end. I thoroughly enjoyed this movie.

Viewer C:
It's an original movie from the start to the end. A must-watch for all action movie fans!

Viewer D:
It's another great movie to watch for all the special effects and nice storyline.

★ Selection

National Security

View counts by the first week of release:

(Note: Each red icon represents 1000 people who have watched this movie on the website.)

Ranking based on view counts: #99 out of 100 movies in the website

Genre: Action / Thriller

Release Date: 18 Nov 2012

Story

When the White House is under a terrorist attack, a tourist finds himself trapped in the building. He works with the nation's security team to protect the White House and save the country.

User Reviews

Viewer E:
It's a great show. Great action and great plot with consecutive waves of laughter.

Viewer F:
A very predictable American Hero movie. The plot is clichéd, and the action is not exciting.

Viewer G:
It's just one of those movies with the same old plot with a bit modification.

Viewer H:
The movie has an absurd plot and poorly designed visual and sound effects.

★ Selection

Movie Set 9

The Movie Channel

Chasing Your Dream

View counts by the first week of release:

(Note: Each red icon represents 1000 people who have watched this movie on the website.)

Ranking based on view counts: #97 out of 100 movies in the website

Genre: Drama

Release Date: 7 Dec 2012

Story

The movie is set in the early 20th century. Chasing his own American dream, a retired policeman comes to New York City and writes his own legend of love, dream and hope.

User Reviews

Viewer A:
The entire movie lacks subtlety and becomes more superficial and boring by the end.

Viewer B:
Everything from the music to the characters is just wrong. The movie was disappointing.

Viewer C:
The visuals and soundtrack were captivating and lavish. The acting was great as well.

Viewer D:
I was disappointed by the slow pace and the poor performance by the actors.

★ Selection

Pursuing Your Dream

View counts by the first week of release:

(Note: Each red icon represents 1000 people who have watched this movie on the website.)

Ranking based on view counts: #12 out of 100 movies in the website

Genre: Drama

Release Date: 7 Dec 2012

Story

The movie pits a story in the early 20th century, when a war veteran takes a job in New York City, starts his American dream and pens a tale of love, passion and dream.

User Reviews

Viewer E:
This movie delivered a complete drama in total style. It is filmed so beautifully.

Viewer F:
It is a fine piece of work with stunning visual effects and music. Gives a sense of the modern times.

Viewer G:
The visuals and costumes in the movie were so unreal. The modern music was poorly used.

Viewer H:
The cast is beautiful as is the script. The scenes are a visual feast.

★ Selection

Movie Set 10

The Movie Channel

The Magicians

View counts by the first week of release: (Note: Each red icon represents 1000 people who have watched this movie on the website.)

Ranking based on view counts: #05 out of 100 movies in the website

Genre: Crime Thriller

Release Date: 22 May 2013

Story

The movie tells a story about a team of elite CIA agents tracking three world-class Vegas magicians, who plot and implement a series of daring robbery against corrupt companies.

User Reviews

Viewer A:
The movie was poorly directed and edited. You cannot understand what is going on.

Viewer B:
The visuals and tricks in the movie are all unbelievable and unrealistic.

Viewer C:
The plot is not original. In fact it was too predictable and clichéd.

Viewer D:
The plot was fun and wild. It was hard to predict what was going to happen next.

★ Selection

The Illusionists

View counts by the first week of release: (Note: Each red icon represents 1000 people who have watched this movie on the website.)

Ranking based on view counts: #84 out of 100 movies in the website

Genre: Crime Thriller

Release Date: 22 May 2013

Story

The movie pits an elite FBI squad in a game of cat and mouse against a super-team of the world's greatest illusionists who pull off a series of bold heists against corrupt business leaders.

User Reviews

Viewer E:
The film was really enjoyable. It has a lot of wit, suspense, magic, twists, and action.

Viewer F:
I absolutely love this film. It is, the visuals, the locations, and the plot twists.

Viewer G:
The storyline was unique and interesting. The big twist in the end surprised me.

Viewer H:
There is a lack of character development and a lack of well-written plot for the movie.

★ Selection

Appendix C. Screenshot of a Movie Serial Number Page under High Load Condition

Appendix D. Screenshot of a Serial Number Entry Page under High Load Condition

Please enter the serial number of this set of movies:

★ Continue

Appendix E. Questionnaire

Hello! I am a graduate student from School of Communication and Information at Nanyang Technological University in Singapore. My school is currently doing a project on the consumption of media content products. I would appreciate if you could spend a few minutes answering the following questions. You do not need to give out your identity throughout the entire survey. Thank you for your cooperation! If you have any question about the survey, please feel free to contact me. Following is my contact information:

Xu Xuexin

Email: xxu2@e.ntu.edu.sg

Phone: 65-67906565

Part 1

In this part, we would like to know your general viewing behavior of Hollywood movies. Please tick the answer which best represents your situation.

1. How often do you search for information about Hollywood movies?

(1) Never ☐	(2) Rarely ☐	(3) Occasionally ☐
(4) Sometimes ☐	(5) Frequently ☐	(6) Usually ☐
(7) Always ☐		

2. How often do you watch Hollywood movies in cinema and/or through other channels (e.g., TV, Internet, DVD and Blu-ray Disc)?

(1) Once a year or less ☐	(2) Several times a year ☐
(3) Once a month ☐	(4) About two or three times a month ☐
(5) About once a week ☐	(6) About two or three times a week ☐
(7) Daily or almost daily ☐	

3. Please choose your **top 3 favourite and least favourite** movie genres from the following. Please write them down in the appropriate category boxes and also rank them. Make sure the genre you place first in each box is the one you feel most strongly about. For example, under the "Like" box, list the genre you like the most first.

Movie genres:

Action Adventure Animation Biography Comedy Crime Drama Family
 Fantasy History Horror Musical Mystery Romance Sci-Fi Sport
 Thriller War Western Other (Please indicate) _____

Like

Dislike

4. How familiar are you with Hollywood movies and stars?

- (1) Extremely unfamiliar (2) Quite unfamiliar ☐ (3) Slightly familiar ☐
☐
 (4) Neutral ☐ (5) Slightly familiar ☐ (6) Quite familiar ☐
 (7) Extremely familiar ☐

5. I am more familiar with Hollywood movies and stars as compared with my peers.

- (1) Strongly disagree ☐ (2) Disagree ☐ (3) Somewhat Disagree ☐
 (4) Neutral ☐ (5) Somewhat agree ☐ (6) Agree ☐
 (7) Strongly agree ☐

Part 2 Trivia Quiz

In this part, we are interested in your knowledge about Hollywood movies. Below are 20 multiple choice questions about movie facts, quotes, the Oscars and information about actors and directors. Please circle the answer which you think is correct. If you have no idea about the answer to a question, please circle "E. Not sure".

1. "After all, tomorrow is another day!" was the last line in which Oscar-winning Best Picture?
 - A. Gone with the Wind
 - B. Great Expectations
 - C. Harold and Maude
 - D. The Matrix
 - E. Not Sure

2. This movie, set as a prequel to the "Lord of the Rings" series, stars Ian McKellen, Martin Freeman and Richard Armitage. In it, a small creature must set out on an impossible adventure with a group of dwarves and a wise wizard. What is this film called?
 - A. Dwarves and Hobbits
 - B. The Hobbit
 - C. The Hobbit: An Unexpected Journey
 - D. Lord of the Rings: The Hobbit
 - E. Not Sure

3. In the movie Life of Pi, the tragedy of the sinking of the Japanese freighter, Tsimtsum, had left Pi drifting on the Pacific Ocean. Which four animals did he find on the lifeboat?
 - A. A tiger, a hyena, a zebra, and an orangutan
 - B. A cheetah, an ostrich, a camel, and a chimpanzee

- C. A lion, a boa constrictor, a hippopotamus, and a gorilla
 - D. A jaguar, a wild boar, a horse, and a lemur
 - E. Not Sure
4. This brilliant musical, starring Anne Hathaway, Hugh Jackman, Russell Crowe, Amanda Seyfried, Samantha Barks and Sacha Baron Cohen and Helena Bonham Carter, takes place in Revolutionary Paris and is based on the book by Victor Hugo. In it, a convict is released on parole, only to become an outcast as a result of this parole. The film was released on Christmas Day 2012. What was it?
- A. The Dark Knight Rises
 - B. Les Misérables
 - C. Evita
 - D. Wicked
 - E. Not Sure
5. In this remake of a classic fairy tale, starring Kristen Stewart, Charlize Theron and Chris Hemsworth, all is not what it seems. The "fairest of them all" may need to fight for her life! Ravens and magic make this a tale to be remembered! What drama is this?
- A. Mirror, Mirror
 - B. Sleeping Beauty.... 2
 - C. Rapunzel and the Huntsman
 - D. Snow White and the Huntsman
 - E. Not Sure
6. Directed by Steven Spielberg, this 2004 movie tells the story of a man arriving in the US from an Eastern European country and being stranded at an airport in New York City, because of revolution breaking out in his country. This makes him a man without a country. What is the name of this movie?
- A. The Station Agent
 - B. People Like Us

- C. Lost in Translation
 - D. The Terminal
 - E. Not Sure
7. Spider-Man operates from which city?
- A. Metropolis
 - B. New York
 - C. Gotham
 - D. Chicago
 - E. Not Sure
8. Every movie in The Godfather trilogy begins with a...
- A. Celebration
 - B. Funeral
 - C. Monologue
 - D. Montage
 - E. Not Sure
9. In which movie of the Terminator series, the artificial-intelligence system Skynet launched nuclear weapons against the human race?
- A. The Terminator (1984)
 - B. Terminator 2: Judgment Day (1991)
 - C. Terminator 3: Rise of the Machines (2003)
 - D. Terminator Salvation (2009)
 - E. Not Sure
10. At the end of the sci-fi movie the Planet of the Apes, Taylor and Nova flee the apes on horseback and head toward a possible jungle, beyond the Forbidden Zone. According to Dr. Zaius, what will Taylor find there?
- A. His kinsmen

- B. His doom
- C. His destiny
- D. His salvation
- E. Not Sure

11. In the movie Kung Fu Panda, what is the secret ingredient in Secret Ingredient Soup?

- A. Paprika
- B. Thyme
- C. Beef
- D. Nothing
- E. Not Sure

12. In the movie Mamma Mia!, which is based on the Broadway play, who sings the song "SOS" with Donna?

- A. Bill
- B. Harry
- C. Sky
- D. Sam
- E. Not Sure

13. In which "Star Wars" movie does Han find out that Leia and Luke are brother and sister?

- A. Episode V: The Empire Strikes Back
- B. Episode VI: Return Of The Jedi
- C. Star Wars Episode IV: A New Hope
- D. None of them
- E. Not Sure

14. In the movie Inception (2010), Leonardo DiCaprio plays Cobb, a man who makes his living by pirating information from people's dreams. When the movie opens, where do we find Cobb?

- A. Asleep in his bed
- B. Playing with his children
- C. Visiting his father-in-law
- D. Washed up on a beach
- E. Not Sure

15. What special photography effect did The Matrix trilogy pioneer?

- A. Bullet time
- B. Frozen lens
- C. Swing cam
- D. Time slice
- E. Not Sure

16. In the movie series Pirates of the Caribbean, Which actress plays Elizabeth Swann?

- A. Zoe Saldana
- B. Keira Knightley
- C. Natalie Portman
- D. Naomie Harris
- E. Not Sure

17. In which Harry Potter movie does future Twilight star Robert Pattinson appear?

- A. Harry Potter and the Chamber of Secrets
- B. Harry Potter and the Goblet of Fire
- C. Harry Potter and the Half-Blood Prince
- D. Harry Potter and the Order of the Phoenix

E. Not Sure

18. What was the first James Bond movie to receive an Oscar?

- A. Diamonds Are Forever (1971)
- B. From Russia with Love (1963)
- C. Goldfinger (1964)
- D. The Spy Who Loved Me (1977)
- E. Not Sure

19. James Cameron received Oscar nominations for Titanic in all of the following categories except which?

- A. Best Director
- B. Best Film Editing
- C. Best Original Screenplay
- D. Best Picture
- E. Not Sure

20. Which of these directors created the masterful 2005 film epic 'King Kong' that intermingles eye-popping action scenes with gentle moments of peaceful tenderness?

- A. Peter Jackson
- B. Michael Apted
- C. Ridley Scott
- D. Alex Proyas
- E. Not Sure

Part 3

In this part, we would like to know your tendency to engage in thinking. Please tell us how much each of the following statement applies to you and circle the corresponding number.

	Not at all							Exactly
1. I would prefer complex to simple problems.	1	2	3	4	5	6	7	
2. I like to have the responsibility of handling a situation that requires a lot of thinking.	1	2	3	4	5	6	7	
3. Thinking is not my idea of fun.	1	2	3	4	5	6	7	
4. I would rather do something that requires little thought than something that is sure to challenge my thinking abilities.	1	2	3	4	5	6	7	
5. I try to anticipate and avoid situations where there is likely a chance I will have to think in depth about something.	1	2	3	4	5	6	7	
6. I find satisfaction in deliberating hard and for long hours.	1	2	3	4	5	6	7	
7. I only think as hard as I have to.	1	2	3	4	5	6	7	
8. I prefer to think about small, daily projects to long-term ones.	1	2	3	4	5	6	7	
9. I like tasks that require little thought once I've learned them.	1	2	3	4	5	6	7	
10. The idea of relying on thought to make my way to the top appeals to me.	1	2	3	4	5	6	7	
11. I really enjoy a task that involves coming up with new solutions to problems.	1	2	3	4	5	6	7	
12. Learning new ways to think doesn't excite me very much.	1	2	3	4	5	6	7	
13. I prefer my life to be filled with puzzles that I must solve.	1	2	3	4	5	6	7	

14. The notion of thinking abstractly is appealing to me.	1	2	3	4	5	6	7
15. I would prefer a task that is intellectual, difficult, and important to one that is somewhat important but does not require much thought.	1	2	3	4	5	6	7
16. It's enough for me that something gets the job done; I don't care how or why it works.	1	2	3	4	5	6	7
17. I usually end up deliberating about issues even when they do not affect me personally.	1	2	3	4	5	6	7
18. I feel relief rather than satisfaction after completing a task that required a lot of mental effort.	1	2	3	4	5	6	7

Part 4

We would like to get some information about you. Please tick the answer or fill in the blanks.

1. Gender: (1) Male ☐ (2) Female ☐
2. Please indicate your age: _____
3. Please indicate your nationality: _____
4. What is the highest degree or level of school you have completed? If currently enrolled, mark the previous grade or highest degree received.
 - (1) No schooling ☐
 - (2) Primary/Partial Primary ☐
 - (3) A/O Level ☐
 - (4) Degree/Diploma ☐
 - (5) Master's degree ☐
 - (6) Doctorate degree ☐
 - (7) Other ☐ Please indicate _____

At last, we would like to ask a question about your experience of navigating the Hollywood movie web pages earlier. Please tick the answer which best represents your situation.

5. I felt distracted while making the viewing selections of movies and remembering the serial numbers.

(1) Strongly disagree ☐	(2) Disagree ☐	(3) Somewhat Disagree ☐
(4) Neutral ☐	(5) Somewhat agree ☐	(6) Agree ☐
(7) Strongly agree ☐		

6. Among various types of movie information shown on the website for each movie (e.g., title, view count, ranking, genre, release date, storyline, and user review), on which information are your choices mainly based?

This is the end of the questionnaire. We thank you for participating in our survey.
Your opinions will be greatly appreciated and it would help us greatly in our research.

Appendix F. Pre-Test Survey and Interview Questions

Hello! I am a graduate student from School of Communication and Information at Nanyang Technological University in Singapore. My school is currently doing a project on the consumption of media content products. I would appreciate if you could spend a few minutes completing this questionnaire and the follow-up short interview. You do not need to give out your identity throughout the entire survey and interview. Thank you for your cooperation!

At the end of the session you will receive *FairPrice* gift vouchers (total value S\$15) as a token of our appreciation.

If you have any question about the survey, please feel free to contact me. Following is my contact information:

Xu Xuexin

Email: xxu2@e.ntu.edu.sg

Phone: 65-67906565

Part 1 Instruction: In this survey, we would like to know how the movie reviews would influence your viewing decision. There are in total 120 movie reviews. Please read each review carefully and rate its influence on you accordingly. Please rate it using the scale from 1 to 10, where 1 equals very negative and 10 equals very positive.

Movie Reviews	Very Negative					Very Positive				
1. I actually liked the movie from start to finish. It was well written, well acted and well directed.	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	8 ☐	9 ☐	10 ☐
2. The movie starts with a bang immediately and keeps going. The story is really exciting.	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	8 ☐	9 ☐	10 ☐
3. The movie was horrible. The leading actors have a lot of talent but didn't use any of it.	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	8 ☐	9 ☐	10 ☐
4. A fantastic performance from the whole cast. The costuming and set design was also impeccable.	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	8 ☐	9 ☐	10 ☐
5. It was a poorly-paced movie with bad direction, cinematography, sets and costumes.	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐	6 ☐	7 ☐	8 ☐	9 ☐	10 ☐

6. The storyline is too predictable. After watching it for 30 minutes, I know what is going to happen next.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
7. The whole movie flowed beautifully. And the performances were brilliant and subtle.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
8. The casting was some of the worst I have ever seen. The main actor's voice was terrible.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
9. There are no twists or turns in the film. You can guess the story very well if you miss it a bit.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
10. Great movie! It cleverly balances action with intrigue and a bitter sweet ending.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
11. I was disappointed with this film. The plot jumped too much, and the action didn't tie in well.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
12. The action and fighting scenes are not exciting and there is a lack of fortitude and creativity.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
13. A magnificent show put up by different characters. It is the action movie that defies all action movies.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
14. The movie was neither thrilling enough nor intellectually stimulating enough.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

15. Everything is perfect. The cast is excellent, the script is interesting and it has some nice plot twists.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
16. It's a great entertaining action movie with real fast-paced action and incredible visuals.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
17. This movie disappointed me. It had all the markings of every tedious cliché in a family animation movie.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
18. This is the most boring movie I have ever watched. The basic story is too simplistic.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
19. It is a beautiful creation of art and computer graphics. The storyline is also decent and well paced.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
20. It was dazzling, grand and spectacular. Watching the movie is a pleasing experience that deserves applause.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
21. The film is brilliant. It tells an interesting story and features strong emotional depth.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
22. The graphics and animation in the movie are bad. It overlooks many details in creating the world.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
23. This is the most fantastic visual animation I've ever seen. Gorgeous graphics and interesting storyline.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

24. The animation was incredibly poor. There is a lack of imagination and creativity in the production design.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
25. The jokes, the gags, and the dialogue in the movie were rather bland.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
26. The plot was creative and clever. The dialogues and jokes are quite funny and humorous.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
27. It's refreshing to find such a great comedy movie that stands outside of that tiresome trend.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
28. The movie had a funny script and nice plot. It can keep you smiling the entire time.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
29. The movie was great from beginning to end. There are plenty of jokes to keep you laughing.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
30. The movie was a simple film with a simple plot. Not much of humor in the movie.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
31. The movie lacks originality. There are many similarities between this movie and some other comedies.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
32. The storyline was clichéd and flat. The script was poorly written and can hardly impress me.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

33. This is an original and groundbreaking sci-fi movie. A must watch movie for sci-fi movie fans.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
34. The movie has not only excellent technology and graphics, but also a well-written storyline and great cast.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
35. The storyline is shallow. Some ideas from the movie seem to originate from other sci-fi film.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
36. Nice gadget and great views. It was one of the most visually spectacular that I have ever seen.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
37. The plot is predictable and the visuals and sound effects are poor. I was bored by the movie.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
38. The storyline was too predictable, the actions were poorly designed and the performances were superficial.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
39. The visual effects in the movie are poor. I must say that I was sorely disappointed by this flick.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
40. Good storyline and stunning visuals. I thoroughly enjoyed the show without being bored for a second.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
41. The acting and visual effects in the movie were truly disappointing. Not worth watching.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

42. It was a very good movie with stunning special effects and exciting action scenes.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
43. The story was incredibly poor. You cannot get attached to any of the characters on the film.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
44. The storyline looks very predictable. I was bored from the middle till the end of the movie.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
45. Overall, this movie is one of the best blockbusters of the year, with good acting, directing, and polished visuals.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
46. The movie was sold on its special effects, but they are not very impressive by today's standards.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
47. This movie really managed to capture the sense of hopelessness, fear and urgency.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
48. Fast pace action from the start till the end. Keep me on the edge of my seat throughout the movie.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
49. I love the movie. From great visuals to imaginative characters and plot, this film has everything.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

50. Overall, I really enjoyed this movie. It starts with more imagination and creativity than any movies I've seen.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
51. This is a vivid and colorful tale of wonderment. More visually attractive than any other film to date.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
52. The visuals are poor. There is a big lack of gorgeousness and creativity in the visual artistry.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
53. The movie was disappointing. The writing is bad, the acting is awkward, and the visuals are dull.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
54. The movie is terrible. The plot is poorly written which makes the story lacks imagination.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
55. Going into this film with high expectations for the visual effects will leave you disappointed.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
56. The visual effects were awesome. The movie can give you a bright and colorful world of wonder.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
57. It's a great show. Great action and great plot with consecutive waves of laughter.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
58. A very predictable American Hero movie. The plot is clichéd, and the action is not exciting.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

59. It's just one of those movies with the same old plot with a bit modification.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
60. The movie has an absurd plot and poorly designed visual and sound effects.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
61. The action scenes are so unreal and sometimes insane, which is quite disappointing.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
62. It's a great action movie and truly heartwarming towards the end. I thoroughly enjoyed this movie.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
63. It's an original movie from the start to the end. A must-watch for all action movie fans!	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
64. It's another great movie to watch for all the special effects and nice storyline.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
65. This movie delivered a complete drama in total style. It is filmed so beautifully.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
66. It is a fine piece of work with stunning visual effects and music. Gives a sense of the modern times.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
67. The visuals and costumes in the movie were so unreal. The modern music was poorly used.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

68. The cast is beautiful as is the script. The scenes are a visual feast.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
69. The entire movie lacks subtlety and becomes more superficial and boring by the end.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
70. Everything from the music to the characters is just wrong. The movie was disappointing.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
71. The visuals and soundtrack were captivating and lavish. The acting was great as well.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
72. I was disappointed by the slow pace and the poor performance by the actors.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
73. The film was really enjoyable. It has a lot of wit, suspense, magic, twists, and action.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
74. I absolutely love this film. It is, the visuals, the locations, and the plot twists.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
75. The storyline was unique and interesting. The big twist in the end surprised me.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

76. There is a lack of character development and a lack of well-written plot for the movie.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
77. The movie was poorly directed and edited. You cannot understand what is going on.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
78. The visuals and tricks in the movie are all unbelievable and unrealistic	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
79. The plot is not original. In fact it was too predictable and clichéd.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
80. The plot was fun and wild. It was hard to predict what was going to happen next.	1	2	3	4	5	6	7	8	9	10
	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

This is the end of the survey.

Part 2 Instruction: In this part, we would like to present you 10 pairs of movies with their titles, genres and short descriptions of the storylines. Please read information of each pair of movies carefully and answer the questions from the interviewee.

Pair 1.	
Movie Title: Dream	Movie Title: Hope
Genre: Musical Romance	Genre: Musical Romance
<p>Story</p> <p>The story was set in 19th-century United States. It tells an enthralling story about love, dream and redemption. A man broke parole and fell in love with a young waitress.</p>	<p>Story</p> <p>The movie tells a story of dream, passion and sacrifice. In the 19th-century United States, an ex-prisoner met a factory worker's daughter and fell in love with her.</p>
Pair 2.	
Movie Title: The Special Force	Movie Title: The Special Operation
Genre: Action Adventure	Genre: Action Adventure
<p>Story</p> <p>An elite military unit comprised of special operatives fights against evil forces to protect the country. After being framed with crimes</p>	<p>Story</p> <p>An elite military unit comprised of well-trained soldiers not only fights against an evil organization, but also contends with threats from within</p>

against the country, they have to go underground to clear their names.	the government that jeopardize their very existence.
Pair 3.	
Movie Title: Future World	Movie Title: Future Earth
Genre: Sci-Fi	Genre: Sci-Fi
<p>Story</p> <p>One man lives on the future Earth that has nearly been destroyed during a war with alien invaders. He begins to question what he knows about the world, and starts a journey of discovery and a battle to save mankind.</p>	<p>Story</p> <p>On a spectacular future Earth that has evolved beyond recognition, a remaining technician discovers a secret that bring into question everything he believed about himself, and even put the fate of mankind in his hands.</p>
Pair 4.	
Movie Title: Fallen	Movie Title: Down
Genre: Action Thriller	Genre: Action Thriller
<p>Story</p> <p>In the movie, the White House is under a terrorist attack and the</p>	<p>Story</p> <p>When the White House is captured by a terrorist mastermind, a former</p>

President is kidnapped. A former Presidential guard uses his inside knowledge about the White House and works with national security team to rescue the President from his kidnappers.	government agent finds himself trapped within the building. The national security team has to rely on his inside knowledge to help retake the White House and avert a bigger disaster.
Pair 5.	
Movie Title: The American Dream	Movie Title: Dream in New York
Genre: Drama	Genre: Drama
<p>Story</p> <p>The movie is set in the year 1925, an era of glittering jazz and bootleg kings. Chasing his own American Dream, the Yale graduate student comes to New York City and gradually draws into the captivating world of the super-rich, their illusions, loves and deceptions.</p>	<p>Story</p> <p>In the spring of 1922, a Midwestern war veteran takes a job as salesman in New York City and starts his American dream. He finds himself drawn to the lifestyle of his millionaire neighbor and pens a tale of impossible love and incorruptible dreams.</p>
Pair 6.	
Movie Title: A Brave Adventure	Movie Title: A Wonderful Journey

Genre: Animation Family	Genre: Animation Family
<p>Story</p> <p>The movie tells the story of a teenage girl being magically transported into a secret forest and joining in a battle between the forces of good who keep the natural world alive and the forces of evil who wish to destroy it.</p>	<p>Story</p> <p>In this movie, a teenager is accidentally transported to a mysterious forest setting and helps a group of tiny soldiers and warriors fight against a group of evil creatures to protect the forest and to save their world.</p>
Pair 7.	
Movie Title: The illusionists	Movie Title: The Magicians
Genre: Crime Thriller	Genre: Crime Thriller
<p>Story</p> <p>The movie pits an elite FBI squad in a game of cat and mouse against a super-team of the world's greatest illusionists who pull off a series of daring heists against corrupt business leaders.</p>	<p>Story</p> <p>A CIA agent and an Interpol detective investigate and track a team of three world-class Vegas magicians, who rob corrupt banks during their performances and reward the audience with the money.</p>

Pair 8.	
Movie Title: Intern Wisdom	Movie Title: Internship
Genre: Comedy	Genre: Comedy
<p>Story</p> <p>Two shop clerks at their thirties want to prove that they are not obsolete in the digital world, and start an internship at one of the world's top web services companies, competing with a group of the most brilliant, tech-savvy geniuses.</p>	<p>Story</p> <p>Two waiters at a fast food restaurant try to keep up with the digital era and develop successful careers, so found their ways into a coveted internship at a multinational Internet corporation, along with a large number of fresh graduates.</p>
Pair 9.	
Movie Title: The War against Zombies	Movie Title: Survival from Zombies
Genre: Action Drama Horror	Genre: Action Drama Horror
<p>Story</p> <p>The movie starts with a worldwide Zombie panic, which is toppling armies and governments, and is threatening the entire human race.</p>	<p>Story</p> <p>An agent of the United Nations describes the history of the war against zombies, how he tracks the origin of the zombie pandemic, fight with</p>

United Nations employee traverses the world to find the origin and to fight against them.	his colleagues to stop the zombies from spreading to the entire world.
Pair 10.	
Movie Title: The Great Land	Movie Title: The Magic Land
Genre: Adventure Fantasy	Genre: Adventure Fantasy
<p>Story</p> <p>A circus magician is swept away to an enchanted land and is forced into a power struggle between three witches and warlocks.</p>	<p>Story</p> <p>A young man once accidentally entrances a vibrant land. He tries to find the way home but is involved in a war between two groups of witches.</p>

Interview Questions

1. Do you think the titles of the two movies sound identical?
2. If not, what are the differences between the two?
3. What changes would you recommend to make them more similar?
4. Do you think the storyline of the two movies sound similar to each other?
5. If not, what are the differences between the two?
6. What changes would you recommend to increase the similarity between the two storylines?