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The influence of Online Ratings on Film Choice: Decision Making and Perceived Risk

Miscellaneous

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Abstract

Online users' empowerment is an undeniable fact that has brought significant changes to the world of information. Society is becoming increasingly reliant on the online contributions shared by the users of social platforms. This paper focuses on the information provided by peers in movie-based online communities, in the form of numbers (ratings). Given the wide and varied offerings of films, the huge amount of information about each film and the experiential nature of cinema, this study analyses the influence of ratings at the moment of film choice. To test the influence of ratings on a moviegoer's choice, controlling as they do the subject's susceptibility to interpersonal influence, we conducted an experiment. A three-way, between-groups design (without rating and film critics/with rating/with rating and film critics) in a decision-controlled setting considers making a decision about what film to watch. Results provide empirical evidence that the addition of ratings simplifies the decision making. Also, ratings exert a significant influence in reducing risk perceptions, either global risk or each specific dimension of risk considered in the study –temporal risk, financial risk, experiential risk. Finally, academic and managerial implications and future research are also discussed.

Keywords

Online interpersonal influence, numerical information, online ratings, movie-based online communities, perceived risk.

1. Introduction

According to the report *La Sociedad de la información en España* (Fundación Telefónica, 2015), 47% of all internet users look for information about films; among them, 76.9% use this information to make their choice. Moreover, 70% of cinephiles tend to feel insecure about their choice of films prior to making their decision (*Think with Google*, 2014). This situation poses a challenge to moviegoers who have to deal with a considerable number of alternatives from which to choose, besides the wealth of information about each film. In this new context, online ratings become one of the most helpful and trusted sources of information to help make decisions. People have faith in these ratings and view them as reliable (Gavilan, Avello & Martinez-Navarro, 2018). A Nielsen report found that ratings provided by other users were the second-most trusted source of information, after

recommendations from friends and family (Nielsen, 2012). Today, all such information is available on the social media, and users turn to online communities in search of it.

In the cinema domain, movie-based online communities –where moviegoers rate and post their film reviews– have become a valuable source of information. The informational content they gather is huge: casting, director, trailers, film critics, etc. However, among all this information, the users' contributions stand out for their importance. Today, users are assuming new roles. These roles have evolved from their being mere content consumers to becoming content producers –the so-called digital empowerment (Linares-Palomar & Baraybar-Fernández, 2017). This empowerment encourages people to actively participate in the social media with their opinions (Levine, Locke, Searls & Weinberger, 2011). However, this new voice poses some questions, about how to present this information adequately to make it suitable for use by other users.

The challenge is to organise the contributions made by the users to generate content that is easy to understand, easy to use and meaningful for the audience. In this context, the use of ratings emerges as a suitable option to channel contributions from users. Evaluations are expressed as an aggregated number, usually in a bracket between zero and five, which represents a precise and easy-to-assimilate informational content that becomes a quality index for a good or service.

Any good or service is liable to be rated by users with a number. With experiential goods, such as films, ratings become even more relevant. In the entertainment industry, movies are consumed for pleasure, illumination, or any other specific experience difficult to evaluate objectively (Eliashberg & Shugan, 1997). Since film ratings summarise the evaluation of the audience experience numerically, ratings become an experiential promise, easy to understand, supported by peers and therefore trustworthy, that may reduce perceived risk associated with the available alternatives (Arrow, 1976).

Prior research on films suggests that many consumers make offline purchase decisions based on online information. Liu (2006) found that online movie reviews offer significant explanatory power for both aggregated and weekly box office revenues. Dellarocas, Zhang and Awad (2007) pointed out that adding online movie ratings to their revenue-forecasting model significantly improved the model's predictive power. Reinstein and Snyder (2005) have demonstrated that users' ratings –and reviews– affect box-office revenues; from a different perspective, Souza, Nishijima and Fava, (2018) provide evidences of the effect of reviews on the length of time a film is kept on screens; however, to the best of our knowledge, there is no empirical study of the role played by the numerical rating of a movie as a facilitator of the decision choosing what film to watch.

From a multidisciplinary perspective on user behaviour in digital environments, the goal of this paper is to verify that peer evaluation presented in the form of aggregated numerical rating simplifies the decision making and reduces the perceived risk when making a film choice. To verify this hypothesis on the role played by ratings, we conducted a three-way, between-groups experiment. Results show that the presence of aggregated numerical information in the form of rating will facilitate the choice of a certain film among the available alternatives and will potentially reduce undesirable consequences in the decision making process.

In the following sections, we present the literature review and hypotheses. Subsequently, we report a three-way between-groups experiment (without rating/with rating/with rating and film critics) in a decision-controlled setting, followed by the results description. We conclude by discussing results and presenting suggested future research direction in this area.

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2. Theoretical framework

Our society has fully democratised access to information. The novelty is that subjects not only use the information available but also generate content based on their knowledge or their personal opinions (Christakis & Fowler, 2010). This new form of social and virtual interaction facilitated by the Internet technology has proliferated in online communities (Lopez-Gonzalez, Guerrero-Solé & Larrea, 2014). The empowered user has the capacity to post his content, thus undertaking a role that was restricted to professional critics until recently.

In addition, parallel to the development of cyberspace the phenomenon of online interpersonal influence is taking place (Senecal & Nantel, 2004). A cardinal rule of human behaviour is that people have the ability to exert a powerful influence upon each other (Kelman, 1961). Nowadays, we rely more and more upon the anonymous aggregate opinions of peers who share information and experiences, to infer how to proceed through online communities (Amblee & Bui, 2012). Subjects may change their thoughts, feelings, attitudes, or behaviours as a result of their interaction with others who may be perceived as equal.

Online interpersonal influence represents a key factor in the decision making process (*Cisco System Report*, 2013) that takes place in online communities. The term online community describes a social relationship aggregation facilitated by the internet technology, in which members communicate and build personal relationships (Hagel & Armestrong, 1997; Kozinets, 2002). A wide range of companies, from the hospitality to the education sectors, focus on the relevant impact of interpersonal influence in online communities. Specifically, movie-based online communities are sites of social interaction that allow moviegoers to engage actively in the process of choice and post-consumption (Hagel & Armestrong, 1997; Kozinets, 2002). The online communities enable users to participate and share experiences about films, changing the traditional role played by the audience in the motion picture industry (Ponnamma-Divakaran & Nørskov, 2016). Research has shown that online communities foster trust and knowledge sharing among their members, and also provide a platform for social support (Leimeister *et al*., 2008).

The design of online communities has standardised certain type of online information that may exert interpersonal influence. The three most common types of information provided by online communities are ratings, reviews and recommendations. An anonymous person, an expert in the field or a close and trusted friend can write ratings and reviews. The three of them differ in the nature of the information they provide. Ratings are numbers that represent certain value on a scale, whereas reviews offer personal opinions freely expressed that vary in length. Recommendations provide propositions based on users' past behaviour, experts' advice, or expert systems (Amblee & Bui, 2012).

Among these, online ratings have become an important source of information when a person is making a decision, substituting and complementing other forms of communication about the quality of goods or services, such as film criticism or trailers in the cinema domain. People increasingly trust online ratings, which are becoming even as relevant as personal recommendations when making purchase decisions (*BrightLocal*, 2014).

Several factors contribute to the growing importance of ratings as a means of information that people trust. First is the fit between the stage of the decision process in which the person is immersed and the information provided by the rating. When making a decision, users are in a goal-oriented mode that favours an easy information processing approach (Van Schaik & Ling, 2009). Ratings are easy-to-process information that can be easily employed as a quick summary of a large quantity of information and help in establishing selection criteria, e.g., only options over 4 in a 5-point scale. Ratings become a readily accessible informational cue (Pennington, 2000) that may help users to make their choice.

The second factor is the nature of the author who has provided the rating. Online interpersonal influence involves the acceptance of information or advice from unknown

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people who provide reliable evidence of reality, as people accept information from unknown peers (Burnkrant & Cousineau, 1975). The term 'peers' refers to a group consisting of members who may or may not know each other, but share mutual knowledge and life experience, and serve as a comparison or reference for each other (Newman, 1982).

Scholars argue that since non-commercial information is perceived to be more objective and credible, consumers tend to regard information from their peers as more trustworthy (Litvin, Goldsmith & Pan, 2008).

In addition, film ratings commonly are accompanied by a certain number of reviews that have been taken into account to form the aggregated figure. Therefore, the trustworthiness of the ratings follows from the heuristic of social proof (Cialdini, 2001), which facilitates the decision making process by presenting easy-to-read information provided by a large group of others. The heuristic of social proof provides a rule of thumb that summarises the following rationale: "If they all agree on this evaluation then it must be right." Social proof induces a sort of imitation as a characteristic response to the uncertainty context that occurs when subjects are able to observe others' behaviour or experiences (Salmon *et al*., 2015). Therefore, the volume of reviews without any commercial interest supports reliance on such a rating.

Thirdly, the effect of the rating on the decision making process can be described in terms of the reduction of the perceived risk. Decision theory describes purchasing-risk perception as the individual's subjective feeling of uncertainty about the possible outcomes: gains or losses associated with a particular alternative (Arrow, 1976). Subjects perceive risk because they face uncertainty and tend to anticipate the associated potentially undesirable consequences when making a choice. A global analysis of decision situations identifies different types of perceived risks (Roselius, 1971), according to the type of associated gains or losses: financial risk, performance/experiential risk, physical risk, psychological risk, social risk and temporal risk. The role of risk perception has been widely discussed in the literature as a mediator between attitude and behaviour (Gurhan-Canli & Batra, 2004). Film ratings act as a source of reliable information that reduces the perceived risk of an option and consequently increases the certainty about the quality of the film by means of the agreement of a large number of reviews written by a large number of individuals.

Lastly, the importance of ratings is even greater for experiencing goods and services such as films which are consumed mainly for pleasure. Experiential consumption (Hoolbrook & Hirschman, 1982) involves a variety of hedonic responses and aesthetic criteria; the evaluation of consumption takes place in terms of fun, enjoyment and pleasure obtained from the experience.

It is difficult and unreliable to shape an accurate idea of the experience that will be provided by the film prior to watching the movie since the key attributes are subjective. The essence of the film consumption experience is the interaction between the movie and the viewer (Eliashberg & Shugan, 1997). These specific characteristics of films provide ample justification for the helpfulness of online ratings (Mudambi & Schuff, 2010).

Drawing on the preceding, we hypothesise as follows, referring to the role played by ratings in the process of choosing a film in a movie-based online community:

H1: Peer information of films shaped by numbers (ratings) significantly facilitates the decisional process when choosing a film.

H2: Peer information of films shaped by numbers (ratings) significantly reduces the perceived risks (financial, temporal and experiential) associated with the decisional process when choosing a film.

3. Methodology

We anticipate that online aggregated evaluation by peers presented in the form of a rating will provide a valuable source of information at the time of choosing what movie to watch. Ratings

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simplify the moviegoer's decision and reduce the risk perception associated with the choice, particularly the perceived financial, temporal and experiential risks.

To test the influence exerted by ratings in a moviegoer's choice of a film we conducted an experiment consisting of three between-groups conditions (without rating/with rating/control group) in a decision-controlled setting, in which participants were asked to consider making a decision about what film to choose. Participants rated the ease of making a decision and the risk perception in each condition.

Stimuli: In order to design a suitable stimulus, we conducted a focus group with 6 participants (age ranged between 18 and 45) to explore the way users carry out their film selection decision process. Participants provided us with the information they consider relevant to decision making, as well as information about the context description to be used in the experiment we subsequently carried out. We also gathered information about the role played by verbal reviews made by users and those made by film critics. No differences were observed by gender.

To appraise Spanish movie-based online communities, we analysed the main sites using web analytics tools. In the digital domain, traffic is comparable to the audience of a site. Based on the track stats of users' traffic, the ranking by *Alexa.com* presents *Filmaffinity.com* as the community of reference and the undisputed leader of the sector, followed by *Sensacine.com*, *Ecartelera.com* and *Fotogramas.es* (Table 1). Filmaffinity's position in the ranking by *Alexa.com* (39) is better than that on other popular sites in Spain such as El Corte Inglés (42) or Amazon.com (44).

The six main websites listed in table 1 get over 6.5 million visitors per month and exceed 3 million unique visitors, that is to say, the number of single visitors without repetition. The index of pages per visit and the time spent in the website suggests a high level of interest among users, corroborated by the low bounce rate, which measures the percentage of visitors who enter and exit the site without any further interaction. Filmaffinity, Ecartelera and Guiadelocio show a very low and therefore satisfactory bounce rate, meaning there is a high level of interaction among visitors.

Table 1: Spanish movie-based online communities' key performance index of traffic.

Movie-based online communities	Rank in Country (ES)	Visits / month	Unique visitors	Pages / visit	Time on site (min.)	Bounce rate (%)
Filmaffinity.com	39	4,1 M	1,4M	4.55	7:25	41.23
Sensacine.com	184	1,4 M	932,3 K	2.72	2:33	60.34
Ecartelera.com	566	551,4 K	370,1 K	2.58	2:05	56.03
Fotogramas.es	873	362,7 K	249,8 K	1.65	2:14	74.67
Guiadelocio.com	1,127	213,1 K	166,6 K	3.10	2:58	54.77
Cinemania.es	1,733	188,6 K	102,7 K	2.97	3:16	71.54

Source: Own elaboration based on *Alexa.com*, monthly data (February 2017).

Then we delved into a descriptive analysis of these six main movie-based online communities, focusing on the items of information available to users in each community. Despite the existing disparity in the information provided by the different communities, 15 items were found to be common to all of them:

- Title and original title
- Year of production
- Duration
- Country
- Director
- Screenwriter

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- Cast
- Producer
- Genre
- Synopsis
- Trailer
- Poster and movie images
- Rating displayed either by a number or by an icon
- Peer reviews
- Film critics

From this list of items, the information about peer reviews was deliberately excluded from the experiment. Peer reviews are highly dependent on the reviewer's expertise. On the contrary, film critics are more standardised and less biased, and therefore film critics were included in the experiment. It is important to highlight that film critics are not the focus of the research, and that we do not expect to provide further specific explanations about this item's contribution to the decision process.

Based on the previous information, we designed the input for the experiment simulating a summary of the information provided in a movie-based online community. The information consisted of several items referring to objective information about the film: translated and original title, year of production, duration and country, director, screenwriter, producer, the cast , genre, synopsis, trailer, poster and movie images, together with subjective information about the assessment of the film: numerical rating, film critics.

Presenting a list of these items did not seem very compelling from the perspective of the participants, and so a picture, with icons accompanied by the input name they were referring to, was designed (Appendix I).

The objective information remained the same in all conditions of the experiment, while the subjective assessment of the film varied across experiments. Three different levels of subjective information were established to test the importance given by the users to the rating when deciding which film to choose.

Accordingly, the design of the groups was as follows: one group was given as stimulus the list of available information about films, without any information on ratings or comments from film critics (without rating or film critics). Another group was given as stimulus the list of available information about films with information on ratings but without comments from film critics (with rating) and finally, a third group was given the stimulus with both ratings and comments from film critics (with rating and film critics). The three pictures used as stimulus were identical, only the amount of information in each condition was different.

Pretest: To assess the appropriateness of the stimuli manipulation, the understandability of the questions and the wording, and also to obtain feedback on the questionnaire, we conducted a pre-test with a total sample of 30 panellists. Participants were told that they had to evaluate their satisfaction with the amount of information provided about the films they were to choose from. Each participant was randomly assigned to one of the three experimental conditions. Participants then rated their satisfaction with the amount of information provided about the films, the understandability of the questions and the wording on a seven-point Likert scale (1 = lowest and 7 = highest). In addition, the questionnaire contained an open-ended question, so that participants could indicate what information they missed in making their choice decision.

Results show that the amount of information provided during the decision making process significantly increased users' satisfaction ($F(2,27) = 10.09$, $p < .00$). Participants exposed to the information without rating or film critics' reviews reported a significantly lower satisfaction with the amount of information (M = 2.10, SD = 1.29) than those exposed to information including a rating but no film critics (M = 4.80, SD = 1.81), and those exposed to information including both rating and film critics (M = 5.20, SD = 1.89). There were no

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significant differences between groups in the understandability of the questions ($F(2,27) = .339$, $p > .05$) and wording ($F(2,27) = .935$, $p > .05$). No significant differences were observed by gender.

The most frequent answer to the open-ended question about the information users missed in their choice decision process was: for the no rating and no film critics condition participants reported they missed a numerical rating, users' reviews and film critics; those who received information about rating but without film critics missed users' reviews; and finally, for the rating plus film critics condition, subjects reported they missed the reviews of friends and relatives.

Main study: The target population of this study consists of individuals, men and women, aged up to 18 years old, potentially interested in films. To test the proposed hypotheses, an online survey was carried out among panellists (N = 100, cell sizes from 33 to 34) between 18 and 55. Two hundred fifty panellists were invited to participate in the study via an e-mail invitation (response rate: 40%). Respondents were given a gift consisting of points redeemable for prizes. The study was conducted through a web survey (Schonlau, Fricker & Elliott, 2002). Participants were informed at the beginning that the study involved research on films, but there was no explicit mention of ratings. According to their month of birth, each participant was randomly assigned to one of the three experimental conditions. To contextualise the decision, subjects were told that they would be choosing a film to watch at the cinema next Saturday. To help them make a good decision, they would consider several information items about each film provided in the picture. They were allowed to view the picture for as long as they wanted. Immediately after, they had several scale items to evaluate the constructs. Filling in the questionnaire lasted between 3 and 5 minutes. Table 2 provide a description of the sample.

Table 2: Sample description.

Variables		
Gender	Male Female	39% 61%
Generation	Gen Z (1999-) Millenials (1978-1998) Gen X (1962-1977) Boomers (1946-1961)	2% 48% 46% 4%
Films per week	Less than 1 film per week 1-2 films per week 3-4 films per week A film everyday	45% 39% 14% 2%
Film interest (1-10)	8.67 (1.51)	
Being rater (1-10)	3.34 (2.91)	
Usual Movie-based online communities visited	Filmaffinity.com IMDb.com Sensacine.com Ecartelera.com Fotogramas.es Cinemania.es Rottentomatoes.com	47% 28% 23% 22% 22% 21% 6%

Measurement scales: The independent variable was the information provided: without rating or film critics (NO R-FC)/with rating but without film critics (R-NO FC)/with rating and film critics (R-FC). There were two dependent variables: the ease of making a decision and the perceived risk associated with the decision.

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The ease of making the decision was measured using a semantic differential of 4 items, rated on a ten-point Likert scale: no need of additional information-need of additional information, effortless-demanding, easy-difficult, straightforward-complicated. Items were adapted from Venkatesh (2000). After testing the reliability (α = .92), the scale was summed and averaged (Ease_Decision) to form an ease of decision index to be used in further analysis.

This study uses 4 dimensions to gauge moviegoers' perceived risk: global risk referred to unspecified gains or losses, financial risk focused on monetary losses, temporal risk is when consumption represents losses of time, and experiential risk, a counterpart of performance risk, is suitable for experiential products, since it captures gains or losses in terms of worthwhile experiences. Thus, perceived risk was measured using four items, rated on a five-point Likert scale (1 = completely disagree and 5 = completely agree), adapted from Flavián-Blanco & Guimaliú-Blasco (2007).

Nevertheless, the role of ratings cannot be fully understood, unless consideration is given to the effect of interpersonal influence; it has been proven that "subject's susceptibility to interpersonal influence is a general trait that varies across individuals" (Bearden, Netemeyer & Teel, 1989, p. 473). Defined as the tendency to learn about products and services by observing others and/or seeking information from others, it refers to "inferences made by consumers based upon the observation of the behavior of others" (Park & Lessig, 1977, p. 103). Thus, we also measured "subject susceptibility to interpersonal influence" (SRI) as a covariate, using four items adapted from Bearden *et al.* (1989) scale rated on a five-point Likert scale (1 = completely disagree and 5 = completely agree). Cronbach alfa (α = .84) was satisfactory, and therefore the scale was also summed and averaged to form an index of the subject's susceptibility to ratings influence (SRI) to be used in the analysis (Table 3).

Table 3: Measurement scales.

Variables	Items	Reliability	Literature
Ease of making the decision	*no need of additional information-need of additional information*	α = .92	Adapted from Venkatesh (2000)
	effortless-demanding		
	easy-difficult		
	straightforward-complicated		
Perceived risk	*global risk*		Adapted from Flavián-Blanco & Guimaliú-Blasco (2007).
	financial risk		
	temporal risk		
	experiential risk		
Subject susceptibility to interpersonal influence (SRI)	*Listen to others opinion*	α = .84	Adapted from Bearden et al. (1989)
	Attention to other opinion		
	Interest in others opinion		
	Interest in profesional opinion		

4. Data Analysis and Results

The analysis of variance (ANOVA) could have been adequate to test the null hypothesis that all the means of the groups of the independent variable are equal. However, the inclusion of the covariate SRI (Subject Susceptibility to Interpersonal Influence) in the analysis to reduce the variance of errors within the group, as well as the elimination of possible confusions in the interpretation of the results, led us to perform a Multivariable Covariance Analysis (MANCOVA).

A Multivariate Analysis of Covariance (MANCOVA) was performed with the information provided as a predictor, the ease of making a decision (Ease_Decision) and the perceived risk

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as explained variables, and the individual's score of susceptibility to ratings influence (SRI) as a covariate.

The average level of SRI was roughly the same in the three conditions, $F(2,97) = .14$, $p = .87$, thus the assumption of the independence of the predictor and covariate was fully satisfactory; Leven's test was non-significant for each dependent variable: Ease_Decision ($p = .075$); Global_risk ($p = .143$); Temporal_risk ($p = .21$); Financial_risk ($p = .226$); Experiential_risk ($p = .098$).

Multivariate tests are all significant ($p < .05$), despite partial Eta Squared value indicates that the effect size is small, according to Cohen's guidelines (0.2 – small effect, 0.5 – moderate effect, 0.8 – large effect). (Table 4).

Table 4: Multivariate tests.

Effect		Value	*F*	Hypothesis df	Error df	Sig.	Partial Eta Squared
SRI	Pillai's Trace	.094	4.947[a]	2	95	.009	.094
	Wilks' Lambda	.906	4.947[a]	2	95	.009	.094
	Hotelling's Trace	.104	4.947[a]	2	95	.009	.094
	Roy's Largest Root	.104	4.947[a]	2	95	.009	.094
Information provided	Pillai's Trace	.419	12.707	4	192	.000	.209
	Wilks' Lambda	.595	14.060[a]	4	190	.000	.228
	Hotelling's Trace	.656	15.419	4	188	.000	.247
	Roy's Largest Root	.618	29.667[b]	2	96	.000	.382

a. Exact statistic. b. The statistic is an upper bound on *F* that yields a lower bound on the significance level.

The MANCOVA results indicate that information input exerted a significant influence in simplifying the decision making; $F(2,96) = 20.17$, $p = .000$ (Table 5). Also, the addition of ratings and film critics exerted a significant influence on perceived risk, from a global perspective (Global_Risk $F(2,96) = 13.59$, $p = .000$), and in each specific dimension of risk considered in the study (Temporal_Risk $F(2,96) = 5.25$, $p = .00$; Financial_Risk $F(2,96) = 6.33$, $p = .00$; Experiential_Risk $F(2,96) = 15.73$, $p = .000$). On the other hand, SRI is significantly related to simplifying decision making (Ease_Decision $F(1,96) = 5.01$, $p < .05$), Global_Risk perception ($F(1,96) = 4.15$, $p < .05$ and Temporal_Risk perception ($F(1,96) = 6.48$, $p < .05$), but not to Financial_Risk ($F(1,96) = .03$, $p > .05$) or Experiential_Risk perception ($F(1,96) = .49$, $p > .05$).

Table 5: Means[a] and (Standard Deviation) for the information input.

	TREATMENTS		
	No rating / no film critics NO R-FC **(n = 33)**	With rating but no film critics R- NO FC **(n = 34)**	With rating and film critics R-FC **(n = 33)**
Ease_Decision	5.80[a] (.313)	8.34[a] (.308)	8.1[a] (.312)
Global_risk	3.99[a] (.195)	3.07[a] (.194)	2.55[a] (.197)
Temporal_risk	3.99[a] (.155)	3.43[a] (.152)	3.33[a] (.154)
Financial_risk	3.85[a] (.178)	3.12[a] (.176)	3.03[a] (.178)
Experiential_risk	4.04[a] (.157)	3.41[a] (.155)	2.79[a] (.157)

[a] Covariates appearing in the model are evaluated at the following values: SRI=3.44 (.97).

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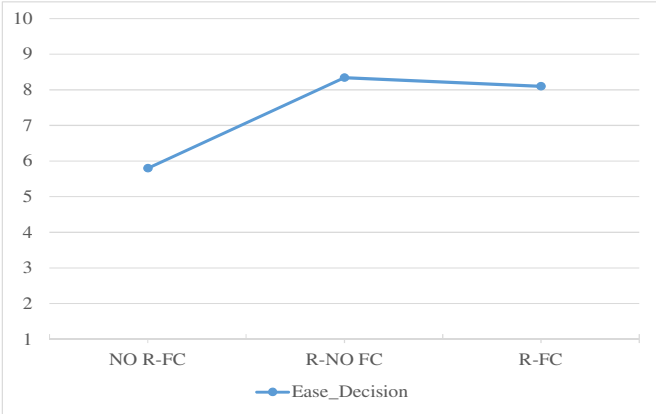
Planned contrasts show that the addition of ratings significantly simplified the decision making (p < .000). Compared to the first condition –without rating and film critics– the addition of both informational inputs, ratings and film critics, simplifies the decision making (p < .000). Thus, H1 is supported.

However, there are no significant differences between the mere addition of ratings and the addition of ratings and film critics regarding simplifying decision making (p = .926) (Figure 1).

Figure 1: Means of Ease_Decision for the information input.

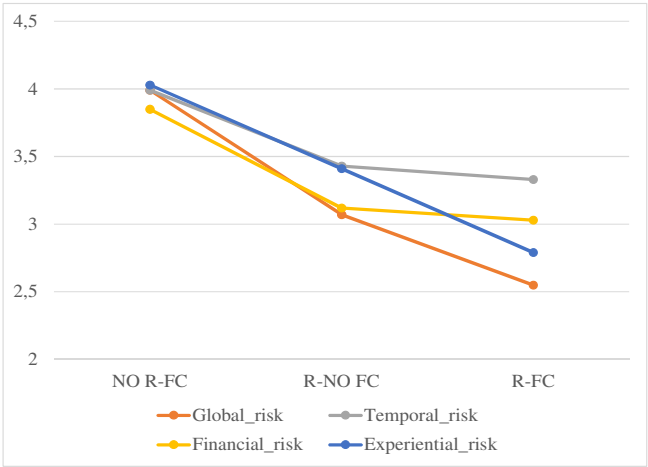


Concerning perceived risk, planned contrasts show that the addition of ratings significantly reduces Global_risk (p =.004), Temporal_risk (p =.035), Financial_risk (p =.014) and Experiential_risk (p =.017). The addition of ratings and film critics, compared to the condition without rating and film critics, reduces Global_risk (p <.000), Temporal_risk (p =.010), Financial_risk (p =.005) and Experiential_risk (p <.000). Therefore, H2 is supported.

Again, there are no significant differences between the addition of ratings and the addition of ratings and film critics to reduce the Global _risk (p = .173), the Temporal_risk (p = .958), and the Financial_risk (p = .979). Only Experiential_risk significantly decreases, as long as informational input provided by others increases (Figure 2). Throughout the data analysis no significant differences were observed by gender.

Therefore, the addition of online ratings facilitates the decisional process when choosing a film by means of reducing perceived risks.

Figure 2: Means of Global_risk, Temporal_risk, Financial_risk and Experiential_risk for the information input.



IBM SPSS Statistics 23.0 was used to conduct data analysis.

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5. Discussion and conclusions

This research began with the premise that new technologies bring about relevant changes to the world of information, and cinema is not an exception (Christakis & Fowler, 2010). Movie-based online communities' users assume new roles, from being content consumers to becoming content producers. Empowered users, either in the form of posting reviews or by rating films, provide information that becomes a highly influential source of information (Linares-Palomar & Baraybar-Fernández, 2017). As consumers, we rely more and more on the anonymous aggregate opinions of peers (Amblee & Bui, 2012).

In this context, the contribution of this research is to verify that peer evaluation presented in the form of an aggregated numerical rating simplifies decision making (Pennington, 2000) and reduces perceived risks when making a film choice. The empirical study provides evidence that the presence of aggregated numerical information in the form of ratings facilitates the choice of a film and reduces potentially undesirable consequences in the decision making process. This conclusion suggests that at the moment of choosing a certain film, users favour the easier and faster deliberation process associated with the consideration of attractive alternatives, such as highly rated films (Sokolova & Krishna, 2016).

We found that online community users trust numerical ratings and therefore will tend to shortlist those films that are better rated. This study suggests that ratings are trustworthy because they are supported by a high number of raters (Litvin, Goldsmith & Pan, 2008; Gavilan, Avello & Martinez-Navarro, 2018) and underpinned by the heuristic of social proof (Cialdini, 2009).

This effect is moderated by individuals' susceptibility to interpersonal influence. Accordingly, this trait may distort the influence exerted by ratings. As long as customers become more susceptible to interpersonal influence, the utility of the rating increases.

Results provide evidence of the significant influence of film critics only in reducing the experiential risk perception. This may occur because the information provided by film critics is more complex than a mere number. Users may pay attention to film critics only in specific situations of uncertainty about whether the film is going to meet their expectations. Therefore, the results are consistent with Reinstein and Snyder (2005), who suggest that the influence of film critics on films' release may not be significant. The influence of film critics should be analysed in the light of the cinema genre. In fact, film critics influence only certain users, highly qualified or experts in cinema, who will later influence their peers.

The addition of a rating represents an increase in information load. In this regard, the literature suggests that increases in information load boost complexity of decision making (Malhotra, 1982), however the results show that this data does not overload the user. On the contrary, users rely on this because they find such data more helpful and trustworthy than other types of information inputs.

In our conceptual framework and experimental design, we have tried to keep the context as simple as possible. We are conscious of the complexity of the decision making process, the relevance of motivations, the influence of expertise, preferences, etc.; but we have tried to focus on the specific problem of the influence of ratings when users visit a movie-based online community. Accordingly, we have deliberately avoided peer review information in the study, since its value or usefulness is uncertain, beforehand. Nevertheless, we are aware of the need for further research that will address richer conditions under which the influence of rating information combined with reviews should be studied. It would also be interesting to take into consideration the eventual manipulation of these ratings. The fake news phenomenon is not exclusive to the journalistic field, but it may be happening in all the processes where users give their opinion. Unfortunately, research in this area is still scarce.

This paper analyses the decision process as a whole. Further research is needed to improve understanding of moviegoers' behaviour through the different stages of the decision

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process. Such analysis would allow us to understand how consumers start choosing at the first stage of the consideration set building and then narrow down the alternatives, rejecting films one by one until the final decision is made. At this point, it could be of interest to delve into the influence of round vs precise numbers; how users focus their attention on round numbers at the early stage of the decision making process and how the precision of decimals influences the final decision (Pena-Marin and Bhargave, 2016). Numerical cognition represents a new research perspective to manage the influence of ratings.

Another relevant future research line could be to go into the real empowerment of moviegoers. To what extent is the audience conscious of this new power? And, to what extent do they exert it through these movie-based online communities?

The current research yields numerous and directly implementable managerial implications. First, moviemakers must pay attention to what is spoken and said in movie-based online communities throughout a movie's theatrical lifetime to have a better understanding of consumers' attitude, perceptions, opinions, etc. towards their movie. Highly rated films with favourable reviews may be screened in cinemas for longer periods of time.

Secondly, it would be wise for movie producers and studios to participate in the conversation. This means directing their communication efforts towards users of online communities, i.e., provide incentives such as discounts for increasing community participation. Good ratings supported by numerous raters exert a positive influence on a film's performance over its lifetime. Also, prior research warns about the influence of prior ratings and reviews on the evaluation made by users. In this regard, initial evaluations tend to exert a crucial influence on the later evaluation of the film.

The use of aggregated ratings from peers is more than a criterion to choose films. Information shaped by data is ubiquitous and serves as a decoy that facilitates browsing for internet users. The number of followers on Twitter, Instagram or Facebook, the number of retweets, the number of views, the number of likes, or the number of downloads... all belong to a new category of information shaped by numbers that have become the social data revolution.

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Appendix I: Pictorial input

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