

## RESEARCH ARTICLE

# Culture and social well-being value cognition, a comparative study of social preference from movie reviews

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## ABSTRACT

Analyzing the Japanese movie reviews given by both Chinese and Japanese movie followers, this research provides empirical evidence to explore the cultural and social well-being diversified preference. The results show that cultural inspiration and social well-being have a significant influence on movie reviews and preferences. The more collectivist Chinese followers prefer starring and giving their comments to the movies. Whereas even Japanese reviewers give their review scores, but they are more uncertain to share their feelings to praise or blame the high and low-score movies. The findings reflect the culture and social value and provide considerable social policy decision-making significance to increase social well-being sustainability.

**Keywords:** movie review; social well-being; Chinese collectivism; Japanese individualism; uncertainty; starring effect; shame culture

## 1. Introduction and background

Movies do not only introduce a story but lead us to consider social values and responsibilities. A good movie can arouse our value cognition by confirming our own experience or social value with the plot in the movie. Furthermore, we often use movies to express our emotional catharsis<sup>[1]</sup>. Some movie genres typically have a stronger catharsis function. For example, our laughs and entertainment after watching comedy, as the thrilling feeling after watching action movies, could both relax our anxiety and increase our well-being. From a macro level, social well-being involves satisfaction, social welfare, and psychological health<sup>[2]</sup>. The movie reviews<sup>[3]</sup>, scores, and comments reflect the satisfaction after watching the movie, and the movie plots may stay longer in people's minds to further affect social behavior<sup>[4]</sup>. Different societies may focus on social satisfaction from different angles and values based on their cultures and traditions. This research observes and analyzes the movie selection feedback, showing that even though China and Japan share a similar culture, the behavior and cognition of movie lovers are different. The comparative study provides the connection between cultural uniqueness and social well-being preference.

The development of online media and increased information spreading speed affect movie choice. Many

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movie lovers share their views and opinions online through internet forums or using the moment function in online Apps<sup>[5]</sup>. The online movie review can significantly affect the marketing decision of movies displayed in theatres and the movie's income<sup>[6,7]</sup>. The star effect could attract audiences, and its performances are a large movie box revenue contribution<sup>[8]</sup>. Movie producers must also decide the optimal time to release the movies on over-the-top media platforms. There is a tradeoff of too early release because it reduces the audience going to the theatres to watch the movies<sup>[9]</sup>. The cultural impact is one of the important factors to consider when using online reviews to evaluate a movie's quality since some more diversified and individualist cultures may underestimate the quality<sup>[10]</sup>.

Chinese and Japanese are culturally similar. Confucianism thoughts influence both countries, and both have shame, embarrassment and guilt cultures traditionally<sup>[11]</sup>. When people provide an opinion or have different ideas, people from both countries usually do it politely, but compared with the Chinese, the Japanese make more apologies when disagreeing<sup>[12]</sup>. A polite apology is also a remedial response when the Japanese feel embarrassed<sup>[13]</sup>. Sometimes the interaction between two cultures is very strong, but fitting in Chinese and Japanese as a foreigner could still be difficult<sup>[14]</sup>. Language and culture can affect social values cognition and preference for movies<sup>[15]</sup>.

The movie follower's characteristic, including demographic, lifestyle and personality, may affect their preference for movie choices<sup>[16]</sup>. The age difference causes the information synchronization to preserve idiosyncratic differences in the brain in some areas when watching movies<sup>[17]</sup>. Not all movies are suitable for all audiences. Many audiences fell horror movie is a very special genre. Research indicates that increased face-dependent superior parietal activation and decreased speech-dependent auditory cortex activation contribute to anxiety levels<sup>[18]</sup>. Some people find they are much more relaxed after watching a horror movie, but some people have their anxiety increased afterward. Most of horror movie lovers are young people. The brain responses to complex emotional information are different when people have different levels of anxiety and depressiveness<sup>[19]</sup>. The movie can be an instrument to reflect our cognition. Audiences can assess health management information and learn our emotions from watching movies<sup>[20,21]</sup>.

This research contributes by providing real evidence of close culture evaluation. Such a comparative study is usually done by surveying and comparing the results. The problem with taking a survey has a higher sample bias risk. The self-utility discovery by taking a survey may differ from experiencing reality, making the survey less trustable than real evidence. Secondly, most movie studies focus on box income and preference. We connect the cultural and psychological behavior reflected by social choice.

The rest of the paper is arranged as follows. The next section provides the theoretical framework and the hypotheses. Section three explains the data selection, treatments, and show the regression methods used in the analysis. Sections four shows the empirical results. The last section concludes and provides some future research suggestions.

## **2. Literature review and hypothesis**

### **2.1. Starring effect**

The online platform provides a faster information delivery channel. Douban is a forum allowing movie lovers to express their ideas in China. Movies are products with shorter life span, and the reputation of the movie spreading directly affect ticket income. For such a new product, word of mouth (WOM) and information herding could significantly influence consumer behavior<sup>[22]</sup>. When there are tendentious reviews with the dominant number, it strongly influences the later reviews and creates biased cognition<sup>[23]</sup>. Movies and TV programs can increase the audience's perceived well-being, and such perceived feeling comes from parasocial

interaction<sup>[24]</sup>. The information discussed on the online platform is the inflow information, and the shared information by users to other users is the outflow information. The endogenous social effect experiences peer review, and it gets weaker and disappears after a single level of propagation<sup>[25]</sup>. People are more self-selected when they hold similar ideas, they collectively form a group<sup>[26]</sup>. Chinese society is more collectivist and seeking for social harmony, but Japanese social value emphasizes more on subtle self-imposed controls<sup>[27]</sup>. For Japanese movies to successfully attract Chinese audiences, the fans' recognition of the movie and spreading the reputation is important. Also, the collectivist feature of Chinese society indicates that a star actor or actress with a large name would help the movie receive high social recognition. Understanding the satisfaction resource is important. Sometimes, the value of the starring is higher than the value of the good performance from the star followers' perspective. A large star performance can significantly increase social well-being if society is more starring focused rather than performance-emphasized. Because of such features, we make the following hypothesis.

H1a. The starring effect would positively contribute to the final movie score given by Chinese audiences.

H1b. The starring effect would positively contribute to the final movie score given by Japanese audiences.

## **2.2. Japanese embarrassment and shame culture**

Even though Japan and China are close neighbors and share similar historical cultures, Japanese society's value moves more toward individualism from collectivism. Probably, it is the consequence of the faster economic growth summarized by the modern theory<sup>[28]</sup>. It is probably more significant among the younger generation. By studying the comparative case of the willingness to use the socially responsible corresponding crowdfunding toward Chinese and Japanese university students, Chinese samples show higher levels of social interactives, but the Japanese samples show higher self-oriented reactions<sup>[29]</sup>. The social structure change in Japan, including a higher divorce rate, the nuclear family rate, and a lower marriage rate, contributes to society's change from more collectivist to more individualistic<sup>[30]</sup>. When the individualism level increases, the more self-oriented but less interpersonal relationship<sup>[31]</sup> could negatively affect personal well-being, and the willingness to self-expression becomes low<sup>[32]</sup>. Another reason that affects the Japanese to have a low interest of making self-expression is the Japanese embarrassment culture, which is also known as shame culture. When they make mistakes or fall into an embarrassing condition, the Japanese are not good at solving their embarrassing condition by involving autonomous-preserving strategies such as giving humor<sup>[33]</sup>.

On the other hand, the Japanese care what others think about them and are afraid to have a negative image in others' minds. The anxiety of giving a negative image leads to uncertainty about expressing their ideas<sup>[34]</sup>. The shame culture represents the Japanese social value. Making mistakes or providing different opinions could hurt Japanese self-esteem and make them feel they are creating trouble for others. Such self-shame could negatively affect well-being, give self-pressure, and even influences psychological health. From the unwillingness to express their ideas, we make the second hypothesis for the Japanese audiences.

H2a. The number of participants positively contributed to the scores given by the Japanese audiences.

H2b. The number of comments does not contribute to the scores given by the Japanese audiences.

## **2.3. High-regulated society and social coherence**

The study shows teenagers are exposed to extremely violent movies<sup>[35]</sup>. Both China and Japan have adopted strict propagation and movie check systems. China emphasizes social harmony and gives special importance to social values. Similarly, Japan has a strict movie classification system, and both countries strictly control movies with too many violent scenes. Gore and violence are the most rating-increasing genres in the movie classification system<sup>[36]</sup>. Even though the original purpose is catharsis in reliving unconscious conflicts

such as anxiety or negative stress, the horror movie is cyclothymic temperament related<sup>[37]</sup>. It creates binary extremes considered socially unstable in most East Asian cultures. Confucianism emphasizes social coherence and peaceful society. From such a view, we propose our third hypothesis.

H3. Adult and horror genres should negatively contribute to the review scores in both China and Japan.

## **2.4. Heterogeneity analysis and comments credibility**

Movie comments are commonly used to predict public sentiments and attitudes toward the movie. The reviews and the impact of the star actors and actresses<sup>[38]</sup> are often used as important factors to predict box income<sup>[39]</sup>. Some studies argue that the comments and review sentiments may be difficult to analyze since the number of reviews is large. Some sentiments of the information delivered are vague, and difficult to make a judgment<sup>[40]</sup>. Rather than using the sentiment to judge, the number of reviews could deliver some information. In both Chinese and Japanese cultures, providing negative criticism in public is impolite. If the audience does not like the movie, they can give a low review score but usually keep silent and avoid making negative comments. We make our last hypothesis as follows.

H4a. Comments positively contribute to the 5-star review percentage in the Chinese sample.

H4b. Comments negatively contribute to the 1-star review percentage in the Chinese sample.

## **3. Data and empirical methodology**

### **3.1. Data**

The main data is collected from the China Stock Market and Accounting Research (CSMAR) which discloses Douban forum rating information of all movies played in China between the year 2013 to the year 2019. Douban forum is an active discussion forum for giving score ratings, writing comments and reviews and raising questions about movies, plays, and books. We select the movies made in Japan from that data set. The original data has the movie's name, the Internet Movie Database (IMDB) link if the movie is on the IMDB website, the starring actors and actresses, the score out of ten, and the weight of reviewers' percentage giving stars to the movie. A movie's maximum star is five, and the minimum is one. Since the specific calculation of the score is not given, we used the star weights percentage given by the reviewers to calculate the score, the possible highest weighted score is five, and the lowest is one. The data set also includes the movie genres, number of comments, long reviews, and reviewer questions.

Further, we split the starring actor and actress for all Japanese movies and get the set of starring names. Then, we count the number of appearances of each name and sum up all the numbers for each movie, then divide that sum by the number of starring actors and actresses who appeared in that movie to get the starring score. We then build the genre fixed effect matrix, but since each movie may belong to more than one genre, we ignore the martial art genre since it has the lowest count and use it as the basis to avoid the dummy variable trap.

Then we select only movies with IMDB numbers and connect them with Japanese data from Yahoo movies. The number of reviews, number of participated reviewers, and the weight of five starts to one star are collected. Similar to the Chinese data, we calculated the Japanese review score by using the weight of starts given by reviewers. Then we match the Chinese data with Japanese data by the IMDB number. The final data has 784 Japanese movies. **Table 1** shows the general descriptive statistics. For the Chinese data, the variable all starts with capital C, and for Japanese, they all start with capital J.

**Table 1.** General statistics, overall sample.

Variable	Observation	Mean	Standard deviation	MIN	PCTL (25%)	PCTL (75%)	MAX
CScore	784	3.365	0.558	1.653	3.008	3.763	4.658
Star	784	6.126	3.317	1.000	3.600	8.2	20
CComments	784	2726.329	8408.283	10	232	1904	149,566
CReviews	784	46.971	224.304	0	2	21.2	4632
CQuestions	784	3.348	10.690	0	0	3	206
CFive	784	15.104	13.321	0	5.875	19.4	75.1
CFour	784	28.966	13.448	1.8	17.775	40.4	57.1
CThree	784	37.808	12.856	4.2	29.475	48	69.8
CTwo	784	13.575	12.009	0	3.8	20.2	48
Cone	784	4.548	6.552	0	0.8	5.025	59.3
JScore	784	3.361	0.555	0	3	3.8	4.6
JReviewer	784	1900.806	4116.204	0	225.2	2133.8	61,506
JComments	784	314.393	592.620	0	40.8	399.2	9103
JFive	784	27.944	9.11	0	17	37	81
JFour	784	23.380	8.380	0	17	29	65
JThree	784	21.552	6.776	0	15	27	59
JTwo	784	11.341	12.159	0	6	16	56
Jone	784	15.625	592.620	0	7	20	70

**Table 1** shows some features of the data. The weighted scores are very close. They both have a similar mean and standard deviation. The distribution among five stars, the Chinese data is much closer to a normal distribution. The highest score is three. The Japanese data is higher score biased. Such a fact reflects a social value difference. The Chinese reviewers can easily give their critical scores, even if they do not think the movie is good enough. Japanese reviewers are much more reluctant to give lower scores and avoid criticizing ideas.

**Table 2** shows the variables' names and definitions and briefly introduces the variable treatments.

**Table 2.** Variable definitions.

Variable	Symbol	Variable treatment
Star	Star	Estimated by the number of performances actors and actresses appear in all sampled movies.
The score given by Chinese audiences	CScore	Using Douban information, a maximum of 5 points, calculated by points multiplied by the weight of audiences, give that point.
Comments from Chinese audiences	CComments	Collected from Douban forum.
Long reviews from Chinese audiences	CReviews	Collected from Douban forum.
Questions raised by Chinese audiences	CQuestions	Collected from Douban forum.
The score given by Japanese audiences	JScore	Using Yahoo movies information, a maximum of 5 points, calculated by points multiplied by the weight of audiences, give that point.
Number of Japanese reviewers participate in giving scores for the movie	JReviewer	Collected from Yahoo movies.
Number of comments given by Japanese reviewers	JComments	Collected from Yahoo movies.
Score difference	Diff	Chinese weighted review score minus Japanese weighted review score.

The movie genres are summarized in **Table 3**.

**Table 3.** Movie genres.

<b>Drama</b>	<b>Horror</b>	<b>Crime</b>	<b>War</b>
Anime	Action	Adult	LGBT
Thriller	Short	Narrative	Sports
Mystery	Historical Drama	Family	Adventure
Scientific	Costume Drama	History	Kids
Comedy	Romance	Musical	Disaster
Documentary	Costume Drama	Fantasy	-

### 3.2. Methodology

#### 3.2.1. Starring effect

We expect the estimated star index would contribute positively to the review scores to test whether the Chinese audience prefers a movie with big stars. Equations (1) and (2) are used to test the Chinese star effect sample. The Chinese starring effect is then compared with the Japanese case to demonstrate the movie satisfaction resource difference.

$$CScore_i = \beta_0 + \beta_1 Star_i + \beta_2 CComments_i + \beta_3 CReviews_i + \beta_4 CQuestions_i + \epsilon_i \quad (1)$$

$$CScore_i = \beta_0 + \beta_1 Star_i + \beta_2 CComments_i + \beta_3 CReviews_i + \beta_4 CQuestions_i + \sum Movie Genres_i + \epsilon_i \quad (2)$$

#### 3.2.2. Japanese embarrassment and shame culture

Equations (3) and (4) are used to test for the Japanese sample starring effect and the embarrassment, shame culture. The number of reviewers is expected to contribute positively to the Japanese audience movie scores, but if Japanese audiences try to avoid the uncertainty of making mistakes or giving negative images to others, then they should avoid providing comments or evenly giving comments regardless of the movie scores. The “JComments” are then compared with “CComments” to demonstrate the behavior difference and express satisfaction in different cultures.

$$JScore_i = \beta_0 + \beta_1 Star_i + \beta_2 JReviews_i + \beta_3 JComments_i + \epsilon_i \quad (3)$$

$$JScore_i = \beta_0 + \beta_1 Star_i + \beta_2 JReviews_i + \beta_3 JComments_i + \sum Movie Genres_i + \epsilon_i \quad (4)$$

#### 3.2.3. High-regulated society and social coherence

Since both Japan and China are strictly law-enforced countries, the control of movie classification should be very tight. In Equations (2) and (4), the marginal contribution of the type of movie to the local score is tested. Adult, horror, and violence-related movies are expected to negatively contribute to the audience’s score in both environments.

#### 3.2.4. Robustness test

To show that the relationship is stable, we use the Chinese score minus the Japanese score to get the variable *diff*, which indicates the score difference. As described by Equations (5) and (6), the relationship between the original starring effect and the embarrassment-shame culture situation should still hold.

$$Diff_i = \beta_0 + \beta_1 Star_i + \beta_2 CComments_i + \beta_3 CReviews_i + \beta_4 CQuestions_i + \beta_5 JReviews_i + \beta_6 JComments_i + \epsilon_i \quad (5)$$

$$Diff_i = \beta_0 + \beta_1 Star_i + \beta_2 CComments_i + \beta_3 CReviews_i + \beta_4 CQuestions_i + \beta_5 JReviews_i + \beta_6 JComments_i + \sum Movie Genres_i + \epsilon_i \quad (6)$$

### 3.2.5. Heterogeneity analysis and comments credibility

In the heterogeneity test, the Equations (1)–(6) are retested using the percentage of 5-stars weight and 1-star weight as the dependent variables. To test whether the comments in Chinese sample are a creditable variable, we set Equations (7)–(10). The expectation for Equations (7) and (8), the comments contribute positively to the five-star weight. For Equations (9) and (10), the contribution of the comments to the one-star should be negative to show unlike Japanese audiences, and the Chinese audiences would give the comments which attract more reviewers to follow and give more ratings and comments.

$$CFive_i = \beta_0 + \beta_1 Star_i + \beta_2 CComments_i + \beta_3 CReviews_i + \beta_4 CQuestions_i + \epsilon_i \quad (7)$$

$$CFive_i = \beta_0 + \beta_1 Star_i + \beta_2 CComments_i + \beta_3 CReviews_i + \beta_4 CQuestions_i + \sum Movie Genres_i + \epsilon_i \quad (8)$$

$$COne_i = \beta_0 + \beta_1 Star_i + \beta_2 CComments_i + \beta_3 CReviews_i + \beta_4 CQuestions_i + \epsilon_i \quad (9)$$

$$COne_i = \beta_0 + \beta_1 Star_i + \beta_2 CComments_i + \beta_3 CReviews_i + \beta_4 CQuestions_i + \sum Movie Genres_i + \epsilon_i \quad (10)$$

## 4. Results and discussion

### 4.1. The starring effect

The results of the relationship for Equations (1) and (2) are shown in **Table 4**, columns (1) and (2). The star term has positive coefficients without and with the fixed movie genre control. The positive relationship between the star and the Chinese audience review score shows that if the movie actors or actresses have bigger names, the Chinese reviewers give higher scores. The collectivist social feature also amplifies the star effect in the movies when people share after-movie feelings or expectations about the movie performance. Hypothesis H1a, a significant positive star effect toward the Chinese sample, has been supported.

**Table 4.** Movie preference factors and review scores.

	Dependent variable			
	Chinese review score		Japanese review score	
	(1)	(2)	(3)	(4)
Star	0.030*** (0.006)	0.018*** (0.005)	0.004 (0.006)	-0.007 (0.006)
CComments	0.00002*** (0.00001)	0.00002*** (0.00001)		
CReviews	-0.001*** (0.0002)	-0.001*** (0.0002)		
CQuestion	0.007** (0.003)	0.009*** (0.008)		
JReviewer			0.00002*** (0.00001)	0.00003*** (0.00001)
JComments			0.00000 (0.0001)	-0.00002 (0.0001)
Constants	3.128*** (0.040)	2.999*** (0.049)	3.293*** (0.041)	3.231*** (0.054)
Movie genres control	N	Y	N	Y
Observations	780	780	780	780
R <sup>2</sup>	0.096	0.375	0.033	0.206

**Table 4.** (Continued).

	Dependent variable			
	Chinese review score		Japanese review score	
	(1)	(2)	(3)	(4)
Adjusted R <sup>2</sup>	0.091	0.350	0.029	0.175
Residual std. error	0.532 (df = 775)	0.450(df = 749)	0.543 (df = 776)	0.501 (df = 750)
F statistic	20.526*** (df = 4; 775)	14.998*** (df = 30; 749)	8.730*** (df = 3; 776)	6.712*** (df = 29; 750)

Note: \*\*\*, \*\*, and \* denote the statistical significance at the 1%, 5% and 10%, standard errors are shown in parentheses.

#### 4.2. Japanese embarrassment and shame culture

Note that columns (3) and (4) in **Table 1** shows the relationship between Equations (3) and (4). Interestingly the starring effect in Japan is insignificant. The lack of connection between starring and movie review scores is probably due to the more individualist change in Japanese society, causing diversification of the value and starring judgements. The number of reviewers in the Japanese sample has a positive significant coefficient. The positive significant coefficient indicates that if more reviewers participated, then the movies get higher scores. The coefficient of comments in the Japanese sample is insignificant, as expected. Such a result confirms the Japanese embarrassment and shame culture, avoiding uncertainty to give a bad image to others by hiding their self-feeling. The results do not support the hypothesis H1b but support the hypotheses H2a and H2b.

#### 4.3. High-regulated society and social coherence

**Table 5** shows the coefficients of the different movie genres for Equations (2) and (4), the Chinese and the Japanese fixed moved genre effect. The strictly rated, more violent genres like adult and horror negatively contribute to the Chinese and Japanese movie scores. Even though the thriller and adventure are only horror related, they both have significant negative coefficients. Hypothesis three is proved.

**Table 5.** Movie genres fixed effect.

Movie genres	Chinese review genre effect	Japanese review genre effect	Movie genres	Chinese review genre effect	Japanese review genre effect
Drama	0.209*** (0.038)	0.127*** (0.042)	Crime	0.078 (0.075)	0.077 (0.083)
Anime	0.560*** (0.046)	0.379*** (0.051)	Adult	-0.409*** (0.140)	-0.403*** (0.155)
Thriller	-0.214*** (0.079)	-0.261*** (0.088)	Narrative	0.164 (0.210)	0.141 (0.234)
Mystery	-0.030 (0.059)	-0.059 (0.066)	Family	0.421*** (0.090)	0.297*** (0.098)
Scientific	-0.077 (0.070)	-0.099 (0.078)	History	0.045 (0.142)	0.078 (0.158)
Comedy	0.152*** (0.045)	0.080 (0.050)	Musical	0.015 (0.128)	0.010 (0.142)
Documentary	0.880*** (0.207)	-0.045 (0.230)	Fantasy	-0.011 (0.073)	0.059 (0.080)
Romance	-0.140***	-0.038	Kids	0.099	0.577**



Table 5. (Continued).

Movie genres	Chinese review genre effect	Japanese review genre effect	Movie genres	Chinese review genre effect	Japanese review genre effect
	(0.050)	(0.056)		(0.232)	(0.258)
Horror	-0.480***	-0.424***	War	0.040	0.032
	(0.096)	(0.107)		(0.130)	(0.145)
Action	-0.144***	-0.103*	LGBT	0.076	0.238*
	(0.056)	(0.062)		(0.124)	(0.138)
Short	0.183	-0.316	Sports	-0.208	0.281*
	(0.207)	(0.230)		(0.153)	(0.170)
Historical drama	0.195	-0.008	Adventure	-0.231***	-0.222***
	(0.177)	(0.196)		(0.087)	(0.096)
Costume drama	0.550***	0.454*	Disaster	-0.133	0.158
	(0.229)	(0.254)		(0.322)	(0.359)

Further, **Table 6** shows audiences from different but culturally closed countries' movie genre preferences. Again, the preferred genres show more variation, but the unpreferred genres for both cultures are almost identical, except the Chinese sample has romance as less preferred. Such preference shows both China and Japan share similar social values of negation.

Table 6. Movie genres preferred and least preferred by Chinese and Japanese audiences.

<b>Chinese audiences preferred genres</b>	Drama	Anime	Comedy	Documentary	Costume drama	Family	
<b>Japanese audiences preferred genres</b>	Drama	Anime	Costume drama	Family	Kids	LGBT	Sports
<b>Difference</b>	Comedy (China)	Documentary (China)	Kids (Japan)	LGBT (Japan)	Sports (Japan)	Adult	
<b>Chinese audiences LESS preferred genres</b>	Thriller	Romance	Horror	Action	Adult	Adventure	
<b>Japanese audiences LESS preferred genres</b>	Thriller	Horror	Action	Adult	Adventure		
<b>Difference</b>	Romance (China)						

#### 4.4. Robustness test

The results of the robustness test are reported in **Table 7**. After changing the original measurement and using the Chinese score minus the Japanese score, the results show similar features. Such difference would reduce the risk of suffering omitting variables and alleviate the endogenous problem. The coefficient of the star is positive and significant. The large starring effect would increase the Chinese minus Japanese score difference, equivalent to increasing the Chinese score. The number of Japanese reviewers has a significant negative coefficient. The higher number of Japanese reviewers would decrease the score difference, equivalent to increasing the Japanese score. The Japanese comment still has an insignificant coefficient, which means it has no contribution to changing the Japanese score. Such results confirm the robustness of the previous tests.

**Table 7.** Movie preference factors and difference of review scores (Chinese minus Japanese scores).

	Dependent variable	
	Diff	
	(1)	(2)
Star	0.029*** (0.006)	0.026*** (0.006)
CComments	0.00000 (0.00001)	0.00000 (0.00001)
CReviews	-0.0001 (0.0002)	-0.0002 (0.0002)
CQuestion	0.010*** (0.003)	0.009*** (0.003)
JReviewer	-0.00003*** (0.00001)	-0.00003*** (0.00001)
JComments	0.0001 (0.0001)	0.0001 (0.0001)
Constants	-0.162*** (0.039)	-0.229*** (0.055)
Movie genres control	N	Y
Observations	780	780
R <sup>2</sup>	0.069	0.137
Adjusted R <sup>2</sup>	0.061	0.100
Residual std. error	0.515 (df = 773)	0.504 (df = 747)
F statistic	9.478*** (df = 6; 773)	3.702*** (df = 32; 747)

Note: \*\*\*, \*\*, and \* denote the statistical significance at the 1%, 5% and 10%, standard errors are shown in parentheses.

#### 4.5. Heterogeneity analysis and comments credibility

**Tables 8** and **9** show the results of Equations (7)–(10). In **Table 8**, columns (1) and (2), the Chinese comments have positive and significant coefficients when using five-star as the dependent variable. More comments lead to higher Chinese audience scores, so the comments can be treated as a high score indicator. In **Table 9**, columns (1) and (2), the Chinese comments coefficient is negatively significant when using one-star as the coefficient. It means the higher number of comments leads to a smaller one-star percentage, which is equivalent to a higher score since one-star is the lowest score to receive. Those two results show that the number of comments is a credible indicator in China, leading other later reviewers to follow. Therefore, it is a qualified indicator to predict the score given by Chinese audiences. Hypothesis H4a and H4b have been proved.

The significant negative contribution of the starring effect in column (4) in both **Tables 8** and **9** for the Japanese sample show that the Japanese recognition of starring is very independent. The more common starring decrease both the percentage of high and low review scores, which means the big starring names usually receive average scores in the Japanese sample. Such a result enhanced the robustness of Japanese society’s more socially individualist feature.

**Table 8.** Movie preference factors and review five stars.

	<b>Dependent variable</b>					
	<b>Chinese review 5 stars percentage</b>		<b>Japanese review 5 stars percentage</b>		<b>Difference of China and Japan 5 stars percentage</b>	
	<b>(1)</b>	<b>(2)</b>	<b>(3)</b>	<b>(4)</b>	<b>(5)</b>	<b>(6)</b>
Star	0.444*** (0.140)	0.180*** (0.127)	-0.018 (0.156)	-0.352** (0.147)	0.569*** (0.148)	0.576*** (0.153)
CComments	0.001*** (0.0002)	0.0004*** (0.0002)			-0.00004 (0.0002)	0.00004 (0.0002)
CReviews	-0.0015*** (0.006)	-0.017*** (0.005)			0.002 (0.006)	-0.00004 (0.006)
CQuestion	0.154** (0.078)	0.226*** (0.008)			0.329*** (0.081)	0.295*** (0.081)
JReviewer			0.001*** (0.0002)	0.001*** (0.0002)	-0.001*** (0.0002)	-0.001*** (0.0002)
JComments			-0.001 (0.002)	-0.002 (0.001)	-0.0004 (0.002)	-0.001 (0.002)
Constants	11.047*** (0.968)	7.217*** (1.187)	26.336*** (1.068)	23.62*** (1.364)	-15.083 (1.010)	-16.411 (1.408)
Movie genres control	N	Y	N	Y	N	Y
Observations	780	780	780	780	780	780
R <sup>2</sup>	0.081	0.358	0.074	0.291	0.107	0.187
Adjusted R <sup>2</sup>	0.077	0.332	0.070	0.264	0.100	0.153
Residual std. error	12.826 (df = 7 75)	10.908 (df = 749)	14.122 (df = 776)	12.567 (df = 750)	13.326 (df = 773)	12.933 (df = 747)
F statistic	17.164*** (df = 4; 775)	13.9115*** (df = 30; 749)	20.611*** (df = 3; 776)	10.618** (df = 29; 750)	15.476*** (df = 6; 773)	5.385*** (df = 32; 747)

Note: \*\*\*, \*\*, and \* denote the statistical significance at the 1%, 5% and 10%, standard errors are shown in parentheses.

**Table 9.** Movie preference factors and review one star.

	<b>Dependent variable</b>					
	<b>Chinese review 1 star percentage</b>		<b>Japanese review 1 star percentage</b>		<b>Difference of China and Japan 1 star percentage</b>	
	<b>(1)</b>	<b>(2)</b>	<b>(3)</b>	<b>(4)</b>	<b>(5)</b>	<b>(6)</b>
Star	-0.386*** (0.070)	-0.277*** (0.067)	-0.006 (0.133)	-0.352** (0.147)	-0.388*** (0.121)	-0.428*** (0.127)
CComments	-0.0002** (0.0001)	-0.0002* (0.0002\1)			-0.00001 (0.0002)	0.00002 (0.0002)
CReviews	0.006* (0.003)	0.007** (0.003)			0.004 (0.005)	0.001 (0.005)
CQuestion	-0.030 (0.038)	-0.050 (0.036)			-0.014 (0.066)	0.009 (0.067)
JReviewer			0.0001 (0.0002)	0.001*** (0.0002)	-0.00001 (0.0002)	0.00003 (0.0002)

Table 9. (Continued).

	Dependent variable					
	Chinese review 1 star percentage		Japanese review 1 star percentage		Difference of China and Japan 1 star percentage	
	(1)	(2)	(3)	(4)	(5)	(6)
JComments			-0.001 (0.001)	-0.002 (0.001)	-0.001 (0.002)	-0.001 (0.001)
Constants	7.250*** (0.480)	7.782*** (0.626)	15.737*** (0.909)	16.435*** (1.244)	-8.441 (0.820)	-8.598*** (1.174)
Movie genres control	N	Y	N	Y	N	Y
Observations	780	780	780	780	780	780
R <sup>2</sup>	0.061	0.257	0.002	0.125	0.018	0.059
Adjusted R <sup>2</sup>	0.056	0.227	-0.002	0.091	0.010	0.018
Residual std. error	6.356 (df = 775)	5.751 (df = 749)	12.027 (df = 776)	11.455 (df = 750)	10.820 (df = 773)	10.777 (df = 747)
F statistic	12.624*** (df = 4; 775)	8.646*** (df = 30; 749)	0.398 (df = 3; 776)	3.685** (df = 29; 750)	2.354** (df = 6; 773)	1.454* (df = 32; 747)

Note: \*\*\*, \*\*, and \* denote the statistical significance at the 1%, 5% and 10%, standard errors are shown in parentheses.

#### 4.6. Summary of findings

Table 10 summarizes the finding of the hypotheses with the discussion.

Table 10. Summary of findings.

Hypotheses	Validation	Discussion
H1. The starring effect would positively contribute to the final movie score given by Chinese audiences.	Supported	The starring effect reflects that Chinese society is more collectivist. On the other hand, the insignificant starring effect in Japan relets more individual independent selection.
H2a. The number of participants positively contributed to the scores given by the Japanese audiences.	Supported	The results reflect even movie followers give their ratings, but they are reluctant to give significantly more comments to the movie they like or unwilling to give reviews to show their preferences.
H2b. The number of comments does not contribute to the scores given by the Japanese audiences.	Supported	
H3. Adult and horror are violence-related genres, they should negatively contribute to the scores in both China and Japan.	Supported	The strict movie classification policy and regulation put more horror movies under the violent-related classification. Traditional Confucianism emphasizes peace and social coherence.
H4a. Comments positively contribute to the 5-star review percentage in the Chinese sample.	Supported	H4a and H4b show that the number of comments significantly reflects the score outcome. More follow-up comments push up the review score.
H4b. Comments negatively contribute to the 1-star review percentage in the Chinese sample.	Supported	

### 5. Conclusion and future research

In this research, we use the movie originally from Japan but played in China to conduct a comparative study of the reviews from movie followers in both countries to understanding the culture and social well-being impact on preferences and behaviors. The results discover the impact of change from collectivist to more individualist in Japanese society compare with the more traditionally collectivist Chinese society. The better understanding of the social change demonstrated by the behavior evidence provide us the clue of how social values are formed and how should we sustainably develop our social well-being to provide quality live to each of the social members.

The social development sustainability is a closely connected topic. Both China and Japan face older population and more monoculturalism. Japan has had high speed economic growth in the past, but the older population and low birth rate depress the economic growth. The bigger social well-being problem is lack of labor population and older generation cannot enjoy their welfare. The recent change adopted is to allow the foreign labor population to come to Japan to increase the labor force population. How to successfully help the immigrated labor force to melt into the local society is a bigger challenge. It is worth to look for a sustainable norm and a doable pattern to follow since as a non-immigration country, the social structure is drastically different. The social acceptance and understanding would increase the social well-being.

## Author contributions

Conceptualization, DS, JS and WZ; methodology, DS, JS and WZ; software, DS, JS and WZ; validation, DS, JS and WZ; formal analysis, DS, JS and WZ; investigation, DS, JS and WZ; resources, DS, JS and WZ; data curation, DS, JS and WZ; writing—original draft preparation, DS, JS and WZ; writing—review and editing, DS, JS and WZ; project administration, DS, JS and WZ; . All authors have read and agreed to the published version of the manuscript.

## Conflict of interest

The authors declare no conflict of interest.

## Reference

1. Morais EM, Moreira PR, Winkelmann ER. Movie watching during dialysis sessions reduces depression and anxiety and improves quality of life: A randomized clinical trial. *Complementary Therapies in Medicine* 2020; 52: 102488. doi: 10.1016/j.ctim.2020.102488
2. Marttila E, Koivula A, Räsänen P. Does excessive social media use decrease subjective well-being? A longitudinal analysis of the relationship between problematic use, loneliness and life satisfaction. *Telematics and Informatics* 2021; 59: 101556. doi: 10.1016/j.tele.2020.101556
3. Ladhari R. The movie experience: A revised approach to determinants of satisfaction. *Journal of Business Research* 2007; 60(5): 454–462. doi: 10.1016/j.jbusres.2006.12.007
4. Finn ES, Bandettini PA. Movie-watching outperforms rest for functional connectivity-based prediction of behavior. *NeuroImage* 2021; 235: 117963. doi: 10.1016/j.neuroimage.2021.117963
5. Castillo A, Benitez J, Llorens J, Luo XR. Social media-driven customer engagement and movie performance: Theory and empirical evidence. *Decision Support Systems* 2021; 145: 113516. doi: 10.1016/j.dss.2021.113516
6. Legoux R, Larocque D, Laporte S, et al. The effect of critical reviews on exhibitors' decisions: Do reviews affect the survival of a movie on screen? *International Journal of Research in Marketing* 2016; 33(2): 357–374. doi: 10.1016/j.ijresmar.2015.07.003
7. Feng N, Feng H, Li D, Li M. Online media coverage, consumer engagement and movie sales: A PVAR approach. *Decision Support Systems* 2020; 131: 113267. doi: 10.1016/j.dss.2020.113267
8. Karniouchina EV. Impact of star and movie buzz on motion picture distribution and box office revenue. *International Journal of Research in Marketing* 2011; 28(1): 62–74. doi: 10.1016/j.ijresmar.2010.10.001
9. Sharma M, Basu S, Chakraborty S, Bose I. Determining the optimal release time of movies: A study of movie and market characteristics. *Decision Support Systems* 2023; 165: 113893. doi: 10.1016/j.dss.2022.113893
10. Koh NS, Hu N, Clemons EK. Do online reviews reflect a product's true perceived quality? An investigation of online movie reviews across cultures. *Electronic Commerce Research and Applications* 2010; 9(5): 374–385. doi: 10.1016/j.elerap.2010.04.001
11. Ho DYF, Fu W, Ng SM. Guilt, shame and embarrassment: Revelations of face and self. *Culture & Psychology* 2004; 10(1): 64–84. doi: 10.1177/1354067X04044166
12. Ren W, Fukushima S. Perception and evaluation of requests on social media in Chinese and Japanese. *Language & Communication* 2022; 87: 231–243. doi: 10.1016/j.langcom.2022.09.002
13. Cupach WR, Imahori TT. Managing social predicaments created by others: A comparison of Japanese and American facework. *Western Journal of Communication* 1993; 57(4): 431–444. doi: 10.1080/10570319309374466

14. Peltokorpi V, Zhang LE. Host country culture and language identification, and their workplace manifestations: A study on corporate expatriates in China and Japan. *Journal of International Management* 2022; 28(3): 100926. doi: 10.1016/j.intman.2022.100926
15. Barza S, Memari M. Movie genre preference and culture. *Procedia-Social and Behavioral Sciences* 2014; 98: 363–368. doi: 10.1016/j.sbspro.2014.03.427
16. Palomba A. Consumer personality and lifestyles at the box office and beyond: How demographics, lifestyles and personalities predict movie consumption. *Journal of Retailing and Consumer Services* 2020; 55: 102083. doi: 10.1016/j.jretconser.2020.102083
17. Geerligs L, Cam-CAN, Campbell KL. Age-related differences in information processing during movie watching. *Neurobiology of Aging* 2018; 72: 106–120. doi: 10.1016/j.neurobiolaging.2018.07.025
18. Kirk PA, Robinson OJ, Skipper JJ. Anxiety and amygdala connectivity during movie-watching. *Neuropsychologia* 2022; 169: 108194. doi: 10.1016/j.neuropsychologia.2022.108194
19. Gruskin DC, Rosenberg MD, Holmes AJ. Relationships between depressive symptoms and brain responses during emotional movie viewing emerge in adolescence. *NeuroImage* 2020; 216: 116217. doi: 10.1016/j.neuroimage.2019.116217
20. Yesildag AY, Bostan S. Movie analysis as an active learning method: A study with health management student. *The International Journal of Management Education* 2023; 21(1): 100759. doi: 10.1016/j.ijme.2022.100759
21. Ullah R, Zeb A, Kim W. The impact of emotions on the helpfulness of movie reviews. *Journal of Applied Research and Technology* 2015; 13(3): 359–363. doi: 10.1016/j.jart.2015.02.001
22. Zhen X, Cai GG, Song R, Jang S. The effects of herding and word of mouth in a two-period advertising signaling model. *European Journal of Operational Research* 2019; 275(1): 361–373. doi: 10.1016/j.ejor.2018.11.015
23. Zhang Y, Feng X, Wu Y, Xiao J. The dynamics of online ratings with heterogeneous preferences in online review platform. *Chaos, Solitons & Fractals* 2018; 109: 26–30. doi: 10.1016/j.chaos.2018.02.003
24. Bi Y, Yin J, Kim I. Fostering a young audience’s media-induced travel intentions: The role of parasocial interactions. *Journal of Hospitality and Tourism Management* 2021; 47: 398–407. doi: 10.1016/j.jhtm.2021.04.011
25. Li Y, Cao H, Li J, et al. Social effects of topic propagation on Weibo. *Journal of Management Science and Engineering* 2022; 7(4): 630–648. doi: 10.1016/j.jmse.2022.05.001
26. Li L, Zhou C, He J, et al. Collective semantic behavior extraction in social networks. *Journal of Computational Science* 2018; 28: 236–244. doi: 10.1016/j.jocs.2017.11.003
27. Winfield BH, Mizuno T, Beaudoin CE. Confucianism, collectivism and constitutions: Press systems in China and Japan. *Communication Law and Policy* 2000; 5(3): 323–347. doi: 10.1207/S15326926CLP0503\_2
28. Hamamura T. Are cultures becoming individualistic? A cross-temporal comparison of individualism-collectivism in the United States and Japan. *Personality and Social Psychology Review* 2012; 16(1): 3–24. doi: 10.1177/1088868311411587
29. Hashinaga M, Schenk P, Ishibashi A, Rössel J. Socially responsible crowdfunding across the globe: A comparative analysis of Swiss, Japanese, and Chinese university students. *Technology in Society* 2023; 73: 102247. doi: 10.1016/j.techsoc.2023.102247
30. Ogihara Y. The rise in individualism in Japan: Temporal changes in family structure, 1947–2015. *Journal of Cross-Cultural Psychology* 2018; 49(8): 1219–1226. doi: 10.1177/0022022118781504
31. Ogihara Y, Uchida Y, Kusumi T. How do Japanese perceive individualism? Examination of the meaning of individualism in Japan. *Psychologia* 2014; 57(3): 213–223. doi: 10.2117/psysoc.2014.213
32. Ogihara Y, Uchida Y. Does individualism bring happiness? Negative effects of individualism on interpersonal relationships and happiness. *Frontiers in Psychology* 2014; 5: 135. doi: 10.3389/fpsyg.2014.00135
33. Sueda K, Wiseman RL. Embarrassment remediation in Japan and the United States. *International Journal of Intercultural Relations* 1992; 16(2): 159–173. doi: 10.1016/0147-1767(92)90016-N
34. Gudykunst WB, Nishida T. Anxiety, uncertainty, and perceived effectiveness of communication across relationships and cultures. *International Journal of Intercultural Relations* 2001; 25(1): 55–71. doi: 10.1016/S0147-1767(00)00042-0
35. Sargent JD, Heatherton TF, Ahrens MB, et al. Adolescent exposure to extremely violent movies. *Journal of Adolescent Health* 2002; 31(6): 449–454. doi: 10.1016/S1054-139X(02)00399-3
36. Leenders MAAM, Eliashberg J. The antecedents and consequences of restrictive age-based ratings in the global motion picture industry. *International Journal of Research in Marketing* 2011; 28(4): 367–377. doi: 10.1016/j.ijresmar.2011.06.001
37. Infortuna C, Battaglia F, Freedberg D, et al. The inner muses: How affective temperament traits, gender and age predict film genre preference. *Personality and Individual Differences* 2021; 178: 110877. doi: 10.1016/j.paid.2021.110877
38. Karniouchina EV. Impact of star and movie buzz on motion picture distribution and box office revenue. *International Journal of Research in Marketing* 2011; 28(1): 62–74. doi: 10.1016/j.ijresmar.2010.10.001

39. Hur M, Kang P, Cho S. Box-office forecasting based on sentiments of movie reviews and independent subspace method. *Information Sciences* 2016; 372: 608–624. doi: 10.1016/j.ins.2016.08.027
40. Kim MS, Lim BY, Shin HS, Kwon HY. Historical credibility for movie reviews and its application to weakly supervised classification. *Information Sciences* 2023; 630: 325–340. doi: 10.1016/j.ins.2023.01.138