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# Explaining Global Box-Office Tastes in Hollywood Films: Homogenization of National Audiences' Movie Selections

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W.Wayne Fu<sup>1</sup> and Achikannoo Govindaraju<sup>1</sup>

## Abstract

This study examines the cross-country homogeneity of audience tastes in theatrical consumption of Hollywood films. It constructs empirical schemes to measure and explain similarities between national cinema audiences in box-office acceptance of common sets of Hollywood movies, using annual 2002-2007 panel data of ticket-sales receipts worldwide at the country-by-film level. The results show that countries more culturally like the United States tend to have box-office tastes more closely resembling those of American audiences for the same Hollywood titles than other countries do. The similarity in movie taste is also positively related to an importing country's cinema market size. Moreover, the tastes of individual countries have converged with those of American audiences over the years. Also, correlational statistics calculated from the country-by-film cross-tabulations of box-office sales uncover the trend that the world's tastes have become increasingly homogeneous.

## Keywords

global tastes in Hollywood movies, homogenization, cultural similarity

How local audiences select and receive foreign media products is a canonical subject to scholars of international and cross-cultural communication, as imported media content has played an increasing part in serving people around the world in the midst of globalization. The audience reception study has inquired whether audiences interpret foreign programs in ways indigenous to local cultures or contexts or whether they simply devour the content's meanings as originally intended for home audiences. Analysts recognize that recipients of

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<sup>1</sup>Nanyang Technological University, Singapore

## Corresponding Author:

W.Wayne Fu, Wee Kim Wee School of Communication and Information, Nanyang Technological University, Singapore

E-mail: [TWJFU@ntu.edu.sg](mailto:TWJFU@ntu.edu.sg)

international media can fashion distinct perceptions and evaluations toward globally shared media products via selective consumption and active negotiation (see Lee, 2006a, for a review of the literature). A ramification of the local mediation process is that different societies react to the same audiovisual products heterogeneously depending on their cultures' peculiarities, such as social norms, taste preferences, and aesthetic judgments. Also, the economic literature of media flow has modeled the factor of cultural discount in the consumer valuation of a media product used outside its base market. Media economists deem that the appeal of a media product to a foreign market is reduced by the cultural differences between the consumer and producer, among other factors (Hoskins, McFadyen, & Finn, 1997; Hoskins & Mirus, 1988; Owen & Wildman, 1992; Waterman, 1988; Wildman, 1995; Wildman & Siwek, 1988).

However, the critical approaches contend that the worldwide media consumption is on a trajectory of homogenization. Advocates of media imperialism and authors on media globalization, albeit oriented from different conceptual premises, have stressed that media tastes around the world have gravitated toward uniformity. Since national media markets are liberalized and commercialized, individual societies have been exposed to audiovisual products that not only originate from the same sources but also carry commonness in content. This would condition the separate audiences to develop similar preferences and likings in choosing media offerings.

Despite these contrasting views about audience reactions to global media, which will be reviewed in detail later, empirical evidence concerning the global use of shared media products is virtually absent. One exception is Fu (2006), which detects a trend of homogenization among countries in choosing international sources to import theatrical films from. Moreover, studies in media trade and local reception have typically focused on specific geographies (see Fu, 2006, and Lee, 2006a, respectively, for reviews of these empirical literatures). Looking at isolated contexts inevitably prevents testing cross-cultural differences in international communication (Gudykunst, 2002), which are presumably an antecedent to locals' responses to foreign media. Furthermore, longitudinal investigations of global media habits are also lacking, as Lee (2006a) acknowledged, so that the evolution of audience tastes has hardly been documented. In sum, the issues remain wide open regarding how cultural groups in the world select media products, whether their media likings have converged, and what the driving factors are.

To fill the research vacuum, this empirical study examines the theatrical choices and preferences about Hollywood films among countries or territories worldwide, in the context of the ubiquity of American movie exports. We quantify and explain the (dis)similarity of tastes across national audiences of U.S. movies, to address the overarching questions about world media use under the climate of globalization. Have audiences in different parts of the world converged or diverged in movie selection? More precisely, do movies that are popular in one country tend to be so in other countries also and vice versa? Conversely, have countries developed more distinct film tastes? What reasons contribute to the (dis) similarities in movie consumption across countries?

First, we measure the resemblance of individual countries' patronage of the annual sets of Hollywood movies with the United States's patronage of the same movies from 2002 to

2007, through correlating film-specific box-office sales revenues earned in the United States and each foreign country. Then the measure of similarity in country-level consumption is attributed to cultural and economic factors as well as time trend. Also, we construct a scheme to assess the across-the-board homogeneity of film tastes among all importing countries and trace its trend over the years. The investigations advance our understanding of the state of international media use under the veneer of media globalization.

## Cross-Country Taste Similarities in Hollywood Films

Audience acceptance of cross-border media products is rigorously explained in the economic theory of international media flow. In the economic models of a market's demand for foreign media products, one key factor is culture, simply for the reason that audiovisual media products are, in essence, cultural materials specific to the values, beliefs, styles, attitudes, and customs shared amid the population the products target at.

Apart from other aspects, content consumers intrinsically prefer productions that are fabricated from similar or familiar cultures as the products are easier to absorb and relate to. Therefore, audiences in disparate societies constitute separate cultural markets for media products; media content goods are discounted in their value when exported to a different culture (Hoskins & Mirus, 1988; Waterman, 1988; Wildman, 1995; Wildman & Siwek, 1988). The more culturally different the export and import markets are from each other, the greater is the value discount to the media products in trade; that is, the local demand for the imports is dampened more.

Thereby, *cultural distance* has been defined to signify the degree of cultural difference between countries in exchange (Hoskins et al., 1997; Hoskins & Mirus, 1988; Owen & Wildman, 1992; Waterman, 1988; Wildman, 1995; Wildman & Siwek, 1988). Two countries whose cultures are more disparate are regarded as having a wider cultural distance between themselves. Empirical transnational media flow studies corroborate the cultural discount effect in various trade contexts (Fu & Lee, 2008; Fu & Sim, in press; Lee, 2006b; Lee & Bae, 2004; McFadyen, Hoskins, & Finn, 2003, 2004; Oh, 2001).

The cultural distance conception accords with a presumption reiterated in the intercultural and cross-cultural communication theories—systematic differences versus similarities in cultural dimensions precede how exchange or communication takes place across cultures (e.g., Gudykunst, 1997; Hofstede, 1980; Kluckhohn & Strodtbeck, 1961). Scholars in this discipline in general hold that intercultural adaptation or adoption between two cultures will be enhanced if they share more likeness (e.g., Ellingsworth, 1983; Kim, 2001). Dimensions of intracultural variability, such as high or low contextuality, language-use patterns, and expression modes, are contemplated as antecedents to consequences of cross-cultural communication (Gudykunst, 1997; Gudykunst & Mody, 2002). In addition, the Hofstede dimensions of cross-cultural variability, namely, individualism-collectivism, power distance, uncertainty avoidance, and masculinity-femininity, have been construed widely in cross-cultural communication research (see Gudykunst & Mody, 2002) and cross-cultural psychology research (see Berry, Poortinga, & Pandey, 1997), and applied to

measure between-country cultural distance in a broad range of areas, as reviewed in the Method section later.

Hence, the different sociocultural backgrounds of countries would nurture distinct tastes among their audiences, who then respond differently to the same media content. On the contrary, cinemagoers in comparable cultures should display less differentiated preferences in motion pictures; that is, they should either favor or disfavor the same films in similar ways. It follows that how a country's aggregate preferences over individual Hollywood titles are compared to the American audience's should hinge on the country's cultural distance from the United States. We hypothesize the following:

*Hypothesis 1:* The resemblance of a given country's preference pattern for individual Hollywood films to that of the United States is decreased by the cultural distance between the two countries, *ceteris paribus*.

Other than culture, the economic scale of the cinema market can also influence importation and consumption of foreign films. Because of the economic advantage accrued by home market size, large and affluent consumer markets are better able to sustain a domestic movie production industry catering to locals (Hoskins & Mirus, 1988; Waterman, 1988; Wildman & Siwek, 1988). Audiences in a more self-sufficient national cinema industry not only are less dependent on imports but can also cultivate native tastes. In contrast, productions from small or fledgling economies are handicapped in vying with international mainstream films in content quality and market appeal. In such markets, the populaces might be thirsty for media content enough to gulp imported fares indiscriminately and so become susceptible to assimilation to the dominant film tastes. Besides, a larger and/or richer audience market carries a greater demand for variety of movie sources (Fu & Sim, in press). Fu (2006) has discovered that wealthier countries import from various film origins more evenly than less developed markets do. In turn, more diversified source exposure can serve to check the process of taste assimilation.

However, the economics of a national cinema market may also be linked to film taste similarity in the opposite way. Given the positive contribution of market size to the demand for foreign movies, a larger cinema market imports more Hollywood films (Fu & Sim, in press). As such, from among all Hollywood titles exhibited in the United States, more are circulated into the country. This immediately means that the state of the demand for Hollywood by the importing country, compared to one which imports fewer Hollywood films, aligns with the U.S. audience's more closely. Moreover, as more extensive Hollywood repertoire are steadily offered, the cinema-going public can naturally develop tastes in this sort of film similar to Americans'. Conversely, in a market where only a limited Hollywood menu is on display, it is hard for at least some audiences to find films to their liking. In theory, the poorer fit between the demand and supply of U.S. films may prevent the forming of taste adaptation. Assuming this logic, the enlarged scale of a cinema-importing market would stimulate the intercountry similarities in film taste.

These opposing explanations render the net effect of cinema market scale on intercountry taste similarity theoretically indeterminate. Which of the predictions prevails is an

empirical question. Here, we use national theater attendance and per capita gross domestic product (GDP) to gauge the scale of a national cinema market, following Fu and Sim (in press). The two economic descriptors jointly demarcate the vigor of a domestic cinema sector. The first measures the audience pool by which to buttress the industry; the latter is the average wealth level of the population, which proxies the ticket revenue contribution that an average cinema customer makes to the industry. So we ask the following:

*Research Question 1:* Is the similarity of a given country's preferences to the United States's preferences for the same Hollywood films increased or decreased by its cinema audience size, *ceteris paribus*?

*Research Question 2:* Is the similarity of a given country's preferences to the United States's preferences for the same Hollywood films increased or decreased by its per capita GDP, *ceteris paribus*?

The critical schools forebode convergence of global tastes in media products. The cultural imperialism thesis propounds that the potent export of American media propagates and popularizes the culture worldwide, which in turn perpetuates the exporter's political influence and corporate interests (Boyd-Barrett, 1977; Lee, 1980; Mattelart, 1979; Schiller, 1992; Smythe, 1981). Through market mechanisms, transnational corporations reinforce a process of cultural synchronization across societies whereby media systems are privatized and commodified. As a result, media habits and diets in many parts of the world become normalized by the prevailing lifestyles and consumption modes of the media-rich countries (Hamelink, 1984, 1997; Herman & Chomsky, 1988; Herman & McChesney, 1997). While taking a less radical view, scholars of globalization argue that the unleashed transborder cultural traffic transforms the human population into a single community with an increasing degree of sameness (Albrow, 1990; Featherstone, 1990, 1995; Ferguson, 1992; Giddens, 1990; Rantanen, 2004; Robertson, 1992; Tomlinson, 1999). Others hold that the drive of capitalism for profits promotes a unified marketplace in global tastes (e.g., Chew & Denemark, 1996; Crothers, 2006; Hirst & Thompson, 1996; Short & Kim, 1999; Wallerstein, 1990).

The cultural convergence theory (Barnett & Kincaid, 1983; Kincaid, 1988), derived from the convergent nature of interaction between communicating parties, characterizes the adaptation of immigrants from peripheral cultures to a dominant host culture. Extending the theory to the international context, Barnett and Kincaid (1983) and Rogers and Kincaid (1981) visualize that the globalization of mass media exchange spurs homogenization or convergence of the indigenous cultures of the world into a universal culture, which evolves around the culture of those societies that are most central in the global communication system. Barnett (2001) discovers certain patterns amid the 1978-1996 international telecommunications network traffic that attest these trends.

Hollywood filmmakers' production and marketing strategies per se also set in motion the affinity in viewing preferences among their global customers. The studios have invested dearly in universalizing the content and theme of films to formulate a broad appeal to international audiences, in the wake of the fast-rising foreign sales receipts (e.g., Dancyger, 2001; Gitlin, 1983; Meisel, 1986; Miller, Maxwell, Govil, McMurria, & Wang,

2005; Scott, 2002; Wasser, 1995). Their movies have been strategized to arouse repeated exposure to the same content type, in order to facilitate the acquisition of the background knowledge necessary to appreciate the product (Lee, 2006a).

Nonetheless, the literature on cross-cultural audience reception has made sense of audience responses to foreign content in a different light. A host of studies have examined local audience receptions in specific geographic or cultural contexts (see Lee, 2006a, for a recent survey). Overall, this thread of analysis informs that foreign content is not used wholesale but appropriated by users through the process of localization, which entails cultural peculiarities like social norms, taste preferences, and aesthetic judgments. It is held that communities with distinct cultural axes perceive the same content differently. Lee (2006a) found that the predictability of Hollywood movies' box-office sales revenues in Hong Kong with respect to their home (U.S.) receipts decreased during the period from 1989 to 2004 and concluded that this market was under way to depart from the United States's movie taste. Beside, some commentators on globalization have discussed that assorted social and cultural mechanisms or movements work to counteract homogenization of cultural habits (Hall, 1992; Robertson, 1990, 1992; Said, 1978, 1993; Smith, 1990; Waters, 1995).

All in all, the literatures concerning international media consumption have painted incongruent pictures of the trend of the world's media tastes. Thus far, the bifurcated views have not yet been empirically reconciled. We seek to investigate the question:

*Research Question 3:* Have the tastes of individual national audiences worldwide in Hollywood films become more homogeneous or heterogeneous over the past years?

Even if there is a common trend in global film taste, it would not occur in worldwide uniformity to the face of the massive diversities in national history, background, and status. More concretely, some countries can undergo taste assimilation to a greater degree than others can during a particular time period, depending on their cultural positions relative to the United States. In the recent years, many parts of the world that were traditionally more conservative or insular have speeded up opening themselves up to international media trade and imports in the force of globalization. Such populations should gain media tastes like the exporters' in a faster pace than those countries that had experienced it long before. The analysis will delve into whether the taste homogenization trend varies systematically across countries.

## Method

### *Box-Office Sales Revenue Data*

The study employed box-office admission revenues of Hollywood movies in the United States and other countries to examine taste similarities between countries. Nationwide admission receipts manifest the realized audience demand for individual movies, that is,

films' general popularity in a given country. Movie sales figures are collected from the Box Office Mojo (2008) Web site ([www.boxofficemojo.com](http://www.boxofficemojo.com)). To our best knowledge, this online database is the only publicly accessible source for systematic worldwide box-office information. It archives charts of weekly and annual ranking top-grossing movies and films' admission receipts in U.S. dollars from a large number of countries or territories<sup>1</sup> that regularly publish box-office records.<sup>2</sup> Its international box-office compilation is dated back to 2001, when only a few countries were recorded, and has expanded the country inclusion since then. As of this writing, 57 countries other than the United States are posted in the Web site. The study draws the box-office data of 2002 to 2007.

To ensure the completeness and accuracy of movies' total revenue figures within a country for each observed year, we observed only countries that have all weekly box-office charts archived in Box Office Mojo through the year but not those that miss any weekly charts during that year. Table 1 lists the countries that survive this screening criterion for the 6 respective years.

For each year of observation, all Hollywood films theatrically released to any of the enlisted foreign countries are cataloged. For an identified movie, its cumulative box-office sales gross, in millions of U.S. dollars, from each country listed, is tracked from Box Office Mojo. The total revenue gross is gathered from the annual top-grossing chart directly or the weekly chart where the movie is ranked the last time for that country if the movie does not appear in the yearly chart or the yearly chart is not available.<sup>3</sup> In this Web site, an annual sales chart may exist for a country only when the weekly charts exist.<sup>4</sup>

Evidently, not all U.S. movies are theatrically exhibited in a country. In the business or economic sense, a title is not imported to a cinema market mainly because the film is not anticipated to meet sufficient demand to be profitable, lest running it in theaters in the market would lead to a financial loss. Also, it is possible that a movie that was indeed released might never manage to enter any top sales chart, whether weekly or annually, for a country. However, such occasions are extremely rare because selected Hollywood imports are hardly unpopular. For either case, not being listed in any box-office charts ever of a country signals the condition of lack of demand for the film; therefore, zero sales revenue is recorded for the title for the country.<sup>5</sup>

For the most part, a film was exhibited in the same year by a vast majority of those countries that ever exhibited it. Sporadically, a film can be released to a country in a year different from its worldwide release year (with the actual release year being, by and large, the following year). In the event of a deviating release year, the sales revenue is still cataloged for the worldwide release year instead of the actual release year. This arrangement ensures that each movie be listed for only one recorded year and sets straight the comparison of the movie's sales across countries.

According to the above procedure, we identified a total of 247 films released to 24 foreign countries and the United States for 2002; that is, the box-office revenues for 25 countries ( $c$ )  $\times$  247 films ( $f$ ) were cross-tabulated. Likewise, we arrived at the 19 ( $c$ )  $\times$  279 ( $f$ ) cross-tabulation for 2003, 26 ( $c$ )  $\times$  254 ( $f$ ) for 2004, 24 ( $c$ )  $\times$  215 ( $f$ ) for 2005, 28 ( $c$ )  $\times$  269 ( $f$ ) for 2006, and 30 ( $c$ )  $\times$  326 ( $f$ ) for 2007.

**Table 1.** Number of Titles Among U.S. Film Samples Ever to Appear in the Box-Office Charts of Each Listed Hollywood-Importing Country

Country	2002		2003		2004		2005		2006		2007	
	A <sup>a</sup>	B <sup>b</sup>	A	B	A	B	A	B	A	B	A	B
Argentina	91	33.4	173	81	160	109	142	81	180	112	181	120
Australia	188	495	246	785	227	883	198	724	231	830	238	936
Austria	125	114	179	178	155	163	—	—	—	—	180	150
Belgium	—	—	—	—	—	—	—	—	67	88	206	196
Bulgaria	128	6.4	—	—	—	—	96	6.6	140	9.8	138	12.5
Czech Republic	108	29	145	32	142	40	122	27	150	37	159	43
Denmark	—	—	—	—	—	—	—	—	—	—	151	149
Egypt	43	4.9	109	6.2	127	7.2	117	8.5	—	—	—	—
Finland	96	51.5	143	71	147	69	123	51	—	—	—	—
France	165	844	195	564	169	1,053	166	816	173	896	233	1,118
Germany	167	1,016	226	1,283	222	1,194	178	863	188	957	237	1,091
Greece	63	88.8	—	—	126	105	—	—	148	117	178	138
Hong Kong	71	46	—	—	136	114	103	82	114	94	142	109
Hungary	115	24	152	32	116	39	—	—	—	—	—	—
Italy	161	416	—	—	—	—	141	387	152	570	221	781
Japan	99	1,336	110	1,478	115	1,522	100	916	103	880	134	1,029
Lebanon	—	—	—	—	—	—	—	—	—	—	169	8.3
Mexico	153	439	220	581	189	558	—	—	—	—	204	643
Netherlands	132	165	220	232	180	233	155	165	154	200	192	231
New Zealand	133	71.4	180	96	195	137	166	118	200	120	172	123
Norway	—	—	—	—	166	129	138	112	142	132	175	143
Poland	64	39	139	97	121	114	127	90	164	128	168	151
Portugal	—	—	—	—	160	78	—	—	111	101	197	104
Romania	—	—	—	—	—	—	—	—	118	9.1	163	15.4
Russia	—	—	—	—	137	239	143	232	184	333	207	498
Slovakia	—	—	—	—	—	—	89	4.1	134	11	—	—
South Africa	134	53	182	100	130	90	—	—	—	—	—	—
South Korea	80	275	—	—	—	—	—	—	83	320	162	560
Spain	185	622	237	837	240	978	194	729	200	805	256	934
Sweden	—	—	—	—	—	—	—	—	105	125	160	170
Taiwan	117	72	—	—	—	—	99	68	142	82	198	99
Thailand	—	—	—	—	106	67	100	65	110	64	150	83
Turkey	82	38	149	77	127	97	115	78	148	97	183	136
United Arab Emirates	—	—	—	—	116	28	145	36	87	24	—	—
United Kingdom	152	1,346	207	1,953	210	2,025	197	1,668	210	1,942	265	2,218
United States	247	12,706	279	13,423	254	13,456	215	10,117	269	11,895	326	11,865

Note: Dashes indicate countries not included in the panel data of the year. A = Number of U.S. films a country imported. B = Total box-office sales revenues in million US\$ earned by the U.S. films.

Table 1 profiles the country-by-film ( $c \times f$ ) cross-tabulations by year. For each year observed, the Hollywood-importing countries as described above are listed with the number of U.S. films that they exhibited out of the entire movies of that year. A total of 35

countries other than the United States are identified for the data period. Among them, 12 are entered for all 6 years, 1 for 5 years, 12 for 4 years, 4 for 3 years, 4 for 2 years, and 2 for 1 year. In other words, a country on average is observed for 4.2 out of 6 years. Because not all identified countries appear for each observed year, the yearly country panels are unbalanced—That is, the compositions of the country panels do not coincide from year to year. The concern about whether the missing country-by-year entries would sway the analysis will be inspected in the Discussion section.

Table 1 makes clear that the level of Hollywood film consumption varies considerably across the countries. Some countries exhibit nearly thrice the number of Hollywood titles than do others. The dispersions in box-office sales receipts across the countries are very large too, which can be an artifact of sheer differences not only in population size and cinema attendance rate but also in receptivity to Hollywood content. However, the figures within countries are much steadier over time and in fact mostly are on the rise, showing that countries have been importing and watching U.S. films increasingly over the years.

### *Measuring Intercountry Similarities in Consuming Hollywood Films*

We assessed the similarity of tastes in Hollywood films between the aggregate theatrical audiences in the United States and a foreign country. Similarity of consumption tastes is measured as the strength of the correlation between the domestic and foreign box-office receipts for individual films. Several studies have uncovered the link between the domestic and foreign sales performance of Hollywood films based on certain overseas markets (Elberse & Eliashberg, 2003; Fu & Lee, 2008; Hennig-Thurau, Walsh, & Bode, 2004; Sawhney & Eliashberg, 1996). However, neither cross-country nor longitudinal variations in this relationship has been examined.

The taste similarity between the United States and country  $c$  is operationalized as follows: The box-office revenues of the Hollywood films in a given year  $y$  earned from country  $c$  are regressed over their U.S. (domestic) revenues, using the Tobit model.<sup>6</sup> Denoted as the variable  $BOSimilarity_{cy}$ , the  $t$  value of the U.S. revenue regressor indicates the strength of the correlation between the collective tastes of the United States and foreign audiences in the same Hollywood films.<sup>7</sup> A larger  $t$  value, technically, means that the films' box-office popularity in country  $c$  is better explained by theirs in the U.S. market; therefore, it symbolizes a greater coherence between the country's and the United States's viewing preferences about the Hollywood titles. Then, the same regression is reiterated for each observed country ( $c$ ) and year ( $y$ ) combination, that is, each observation of  $cy$ , forming a  $cy$  panel data set of film-taste similarity.

Because the taste similarity measure is based on the  $t$  statistic of a regressor's correlation, the floor of a country's sales revenue generation per se does not affect the measure. Merely scaling up or down the revenue figures of films in the country vis-à-vis the U.S. figures does not shift the similarity measure. As long as a film that sells well in the United States also does well in the country relative to other films, the intercountry consumption similarity will be great regardless of the revenue level in the country.<sup>8</sup>

The similarity measure ranges from 4.34 to 33.02 in Tobit  $t$  values (and from 0.265 to 0.904 in Pearson's correlation) among  $c$ 's. First, countries differ greatly in how alike their Hollywood film tastes are from the U.S. audience's. Also, the similarity measures ( $t$  values), across the board, are statistically significant given their significance levels all being below 5%. That is, despite the wide variations in similarity level, all the countries' tastes in Hollywood have been fairly like the United States's in the statistical sense.

We consider whether the scheme of constructing the box-office consumption similarities would be associated with any measurement prejudice. It is not impossible that specific Hollywood films are or are not channeled into a country due to peculiar structures or historical relationships in the film importation-distribution market or even other esoteric reasons but not exactly because of sales prospects. Such circumstances will weaken the linkage between the ability to draw ticket sales and the importability of a film, which is presumed in our taste-similarity qualification. In this event, the inclusion of nonimported or zero-revenue films in the similarity calculation can create a measurement bias in favor of  $c$ 's cases where more Hollywood films are found with a real sales figure. To check this potential bias, another set of similarity ( $t$ ) statistics is also computed observing only those titles that actually earned sales revenues from the country. The same analysis using the alternative similarity measure still produces results that are highly agreeable. This deepens the confidence that the analytical outcomes are resilient to the measurement of film-consumption similarity.

Then, we conjecture that the similarity of a country's Hollywood film tastes with the United States's depends on cultural distance and the economic characteristics of the market, and also changes in time.

### Independent Variables

**Cultural distance.** To test Hypothesis 1, we operationalized intercountry cultural distance by employing Geert Hofstede's cultural index (1980, 2001). As described earlier, Hofstede classifies the cultures of countries worldwide according to the dimensions of individualism, power distance, uncertainty avoidance, and masculinity, and the index has been adopted in the media flow studies (Fu & Lee, 2008; Fu & Sim, in press; McFadyen et al., 2003, 2004; Oh, 2001) and international trade and marketing studies (see Tihanyi, Griffith, & Russell, 2005, for a review) to measure cultural distance.<sup>9</sup>

In this study, the overall cultural distance between a country  $c$  and the United States, denoted by variable  $CulDist_{c-US}$ , is computed using Kogut and Singh's (1988) formula:

$$CulDist_{c-US} = \sum_{d=1}^4 \left[ \frac{(I_{dc} - I_{dUS})^2}{V_d} \right] / 4$$

Here,  $I_{dc}$  and  $I_{dUS}$  are country  $c$ 's and the United States's Hofstede indices, respectively, on the four cultural dimensions ( $d$  = individualism, power distance, uncertainty avoidance, or masculinity). So the difference between  $I_{dc}$  and  $I_{dUS}$  (i.e.,  $I_{dc} - I_{dUS}$ )

measures the extent of dissimilarity between the two countries with regard to cultural dimension  $d$ .  $V_d$  is the variance of the  $d$  indices of Hofstede's country sample. The raw between-country differential  $I_{dc} - I_{dUS}$  is standardized by the sample variance for that dimension to correct for the scale differences across the dimensions. The four standardized differentials are interpreted as how culturally different country  $i$  and the United States are according to the dimensions on a common scale applied to all countries. Lastly, the standardized differentials are averaged to give  $CulDist_{c-US}$ . According to Hypothesis 1,  $CulDist_{c-US}$  should decrease  $BOSimilarity_{cy}$ . Because the Hofstede index is a one-time measurement,  $CulDist_{c-US}$  is invariant to time ( $y$ ) or, equivalently, purely cross-sectional for country ( $c$ ).

**Average economic wealth.** To mark the average affluence of a national population for Research Question 1, we used the constant-value per capita GDP. The GDP figures in thousands of U.S. dollars, standardized in the value of Year 2000, were drawn from the *World Development Indicators* (World Bank Group, 2004). The per capita GDP of country  $c$  in year  $y$  is indicated as  $GDP_{cy}$ .

**National audience size.** For Research Question 2, the figures of annual nationwide cinema admissions from Screen Digest (2007) were used. This source covers all countries listed in the study but one.<sup>10</sup> The attendance measure of country  $c$  in year  $y$  is denoted as  $CineAttd_{cy}$  in the unit of million times.

**Time trend.** The variable Year represents the year of observation from 2002 to 2007. It is meant to detect any longitudinal trend in  $BOSimilarity_{cy}$  to answer Research Question 3.

Table 2 summarizes the basic statistics of the variables. Table 3 reports the zero-order correlations between the variables. No correlations between the independent variables are large enough to concern a regression analysis in general. The highest correlation among them occurs between  $GDP_{cy}$  and  $CineAttd_{cy}$ , being  $r = .32$ . Still, we will verify whether this correlation complicates the regression results.

Figure 1 maps the box-office consumption similarity  $BOSimilarity_{cy}$  and cultural distance  $CulDist_{c-US}$  among the country sample, for 2002, 2004, and 2006, without the other factors accounted for. An inverse association between the two aspects is pronounced on the scatter plot (the Pearson correlation between the variables across  $cy$  is  $r = -.45$ ,  $p = .000$ ). Several other facts are also salient. First, a country's box-office similarity level is largely steady over the years, as the  $BOSimilarity_{cy}$  dispersions within countries over time are limited. Second, countries in sociocultural, linguistic, religious, and/or geographic affinity often cluster together in this similarity-distance map. The English-speaking Commonwealth nations, such as the United Kingdom, Australia, and New Zealand, all of which are the least culturally different from the United States, stay closely surpassing the other countries in box-office similarity. Meanwhile, Taiwan, Korea, Hong Kong, and Japan, all with a Confucian background rooted in the Far East, are close to one another also. The Middle Eastern Muslim countries, such as Egypt, the United Arab Emirates, and Turkey, are at a great proximity, while Eastern European countries, like Austria, the Czech Republic, Hungary, and Poland, are not far from each other either.

**Table 2.** Summary Statistics of the Variables by Year

Variable	2002			2003			2004		
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>
BOSimilarity <sub><i>cy</i></sub>	24	11.94	4.22	18	18.00	6.74	25	15.48	5.18
CulDist <sub><i>c-US</i></sub>	24	1.68	1.08	18	1.36	0.90	25	1.85	1.17
CineAttd <sub><i>cy</i></sub>	24	64.24	64.27	18	69.07	65.23	25	60.67	64.45
GDP <sub><i>cy</i></sub>	24	14.89	9.92	18	15.11	10.75	25	16.11	11.60
Variable	2005			2006			2007		
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>
BOSimilarity <sub><i>cy</i></sub>	23	14.34	5.12	27	14.46	5.25	29	14.66	3.13
CulDist <sub><i>c-US</i></sub>	23	1.90	1.19	27	2.18	1.28	29	2.11	1.84
CineAttd <sub><i>cy</i></sub>	23	54.91	57.81	27	53.36	57.57	29	55.59	58.56
GDP <sub><i>cy</i></sub>	23	16.86	12.09	27	17.35	11.64	29	17.50	11.78
Variable	Combined								
	<i>n</i>	<i>M</i>	<i>SD</i>						
BOSimilarity <sub><i>cy</i></sub>	146	14.68	5.16						
CulDist <sub><i>c-US</i></sub>	146	1.88	1.16						
CineAttd <sub><i>cy</i></sub>	146	59.03	60.28						
GDP <sub><i>cy</i></sub>	146	16.41	11.22						

Note: BOSimilarity<sub>*cy*</sub> = extent of similarity in box-office consumption of Hollywood films between country *c* and the United States; CulDist<sub>*c-US*</sub> = cultural distance between country *c* and the United States; CineAttd<sub>*cy*</sub> = the derived number of aggregate theater attendances, measured in millions, of country *c* in year *y*; GDP<sub>*cy*</sub> = GDP per capita in US\$1,000 of country *c* in year *y*, standardized to the value in Year 2000.

## Results and Discussion

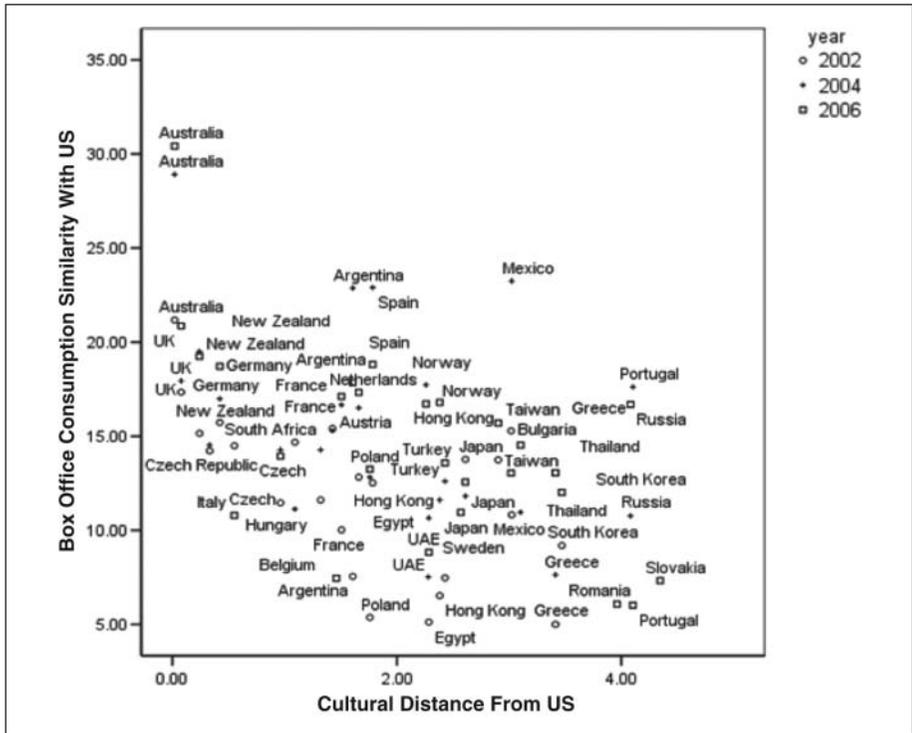
The dependent variable BOSimilarity<sub>*cy*</sub> is regressed over the factors using ordinary least squares (OLS). Four variants of the regression are executed in order to appraise the robustness of the results. Model 1 is the baseline specification entering all variables as original. Model 2 incorporates the interaction term for Year and CulDist<sub>*c-US*</sub>, which is simply equal to their product. By factoring in the interaction between the year-specific (longitudinal) and country-specific (cross-sectional) variables, we can probe whether the time trend of BOSimilarity<sub>*cy*</sub> varies for countries with unequal cultural distances.

Models 3 and 4 control for the fixed country (*c*) effects. That is, in these two models, the idiosyncrasies in taste similarity of the individual countries are accounted for so as to allow the factors to explain the similarity level of a given country over time. Therein, we have to exclude the stand-alone CulDist<sub>*c-US*</sub> regressor, a country-specific but time-invariant measure, from the fixed-effect models to avoid perfect multicollinearity.

**Table 3.** Zero-Order Correlations Between Variables

	1	2	3	4
1. BOSimilarity <sub>cy</sub>				
2. CulDist <sub>c-US</sub>	-0.47			
3. GDP <sub>cy</sub>	0.27	-0.26		
4. CineAtt <sub>d<sub>cy</sub></sub>	0.35	-0.21	0.32	
5. Year	0.04	0.19	0.09	-0.07

Note: N = 146.



**Figure 1.** Relationship between similarity of box-office consumption with the United States and cultural distance from the United States among Hollywood-importing countries

Table 4 reports the regression results. In Model 1, CulDist<sub>c-US</sub> is statistically significant in predicting BOSimilarity<sub>cy</sub> and receives a negative coefficient. The coefficient estimate translates that an increase in CulDist<sub>c-US</sub> by one reduces the similarity measure by 1.91, fixing the other variables. A country more culturally distant from the United States is inclined to use Hollywood films in ways more dissimilar than the American market does.

**Table 4.** Regression of Film Consumption Similarity ( $BOSimilarity_{cy}$ ) Over Cultural Distance, Economic Difference, and Year

Variable	Model 1		Model 2		Model 3		Model 4	
	B	t	B	t	B	t	B	t
Constant	-778.74	-1.82	207.52	0.26	-288.41	-0.54	-298.41	-0.56
CulDist <sub>c-US</sub>	-1.91***	-5.79	-538.10*	-2.44				
CineAttd <sub>cy</sub>	0.02**	3.41	0.02**	3.46	0.08*	2.45	0.07*	2.07
GDP <sub>cy</sub>	0.03	0.78	0.03	0.88	1.09	1.83	1.07	1.79
Year	0.40	1.86	-0.10	-0.24	0.44*	2.52	-0.05	-0.12
Year × CulDist <sub>c-US</sub>			0.27*	2.43			0.20*	2.59
Fixed country effects	No		No		Yes		Yes	
R <sup>2</sup>	0.32		0.33		0.10 <sup>a</sup>		0.10 <sup>a</sup>	
					0.17 <sup>b</sup>		0.33 <sup>b</sup>	
					0.12 <sup>c</sup>		0.21 <sup>c</sup>	

Note:  $N = 146$ . In Model 3, the fixed country effects are statistically significant:  $F(34, 108) = 5.07, p = .000$ , for the test of all country-specific intercepts being zero. In Model 4, the fixed country effects are also significant:  $F(34, 107) = 3.48, p = .000$ .

a. Within  $R^2$ .

b. Between  $R^2$ .

c. Overall  $R^2$ .

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

In other words, countries with a greater cultural proximity to the United States tend to have a taste in Hollywood movies more like the U.S. audience's. Thus, Hypothesis 1 is supported.

CineAttd<sub>cy</sub> has a positive sign with statistical significance in Model 1. This means that having a larger pool of cinema audiences appears to yield the net effect of intensifying the taste similarity of a country. Therefore, between the two opposing candidate effects of market scale, the positive one dominates. This empirical outcome points to the reasons provided earlier. First, the greater audience demand in a country draws more titles for exhibition from the Hollywood lineup, including not only global hits but also films that have a narrower audience appeal and are unlikely viable in smaller import markets. The condition that more Hollywood films are marketed for theater admissions elevates the sales correlation between this country and the United States. A second-round effect of this condition is that the more regular exposure among the audience to films of a particular origin naturally fosters assimilation to the taste of the source.

An increase of 10 million attendances in CineAttd<sub>cy</sub> (about 17% of the sample mean) enlarges  $BOSimilarity_{cy}$  by 0.22, which is around 1.5% of the  $BOSimilarity_{cy}$  sample mean. Despite its statistical significance, this variable's effect is not especially large in real size.

The other market scale factor  $GDP_{cy}$  obtains positive coefficients in all models. The positive coefficients are consistent with the effect of  $CineAttd_{cy}$  but are not statistically significant at 5% level. The box-office taste similarity of an audience market with respect to U.S. movies does not seem to be sensitive to the average wealth level of the country. The statistical insignificance remained when we used national average admission price in lieu of  $GDP_{cy}$  as the regressor.

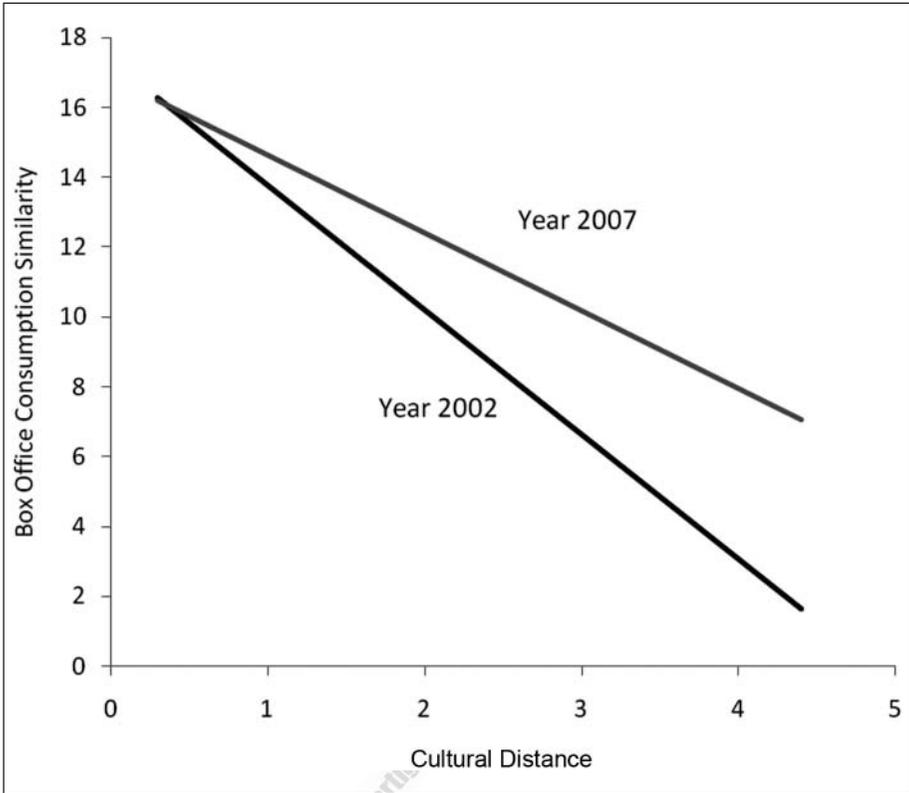
One may speculate that these results of  $CineAttd_{cy}$  and  $GDP_{cy}$  are peculiar to the association between the two variables, although they are not critically collinear anyway,  $r = .32$ . If this is the case, the correlation would shift explanatory power from one variable to another in the regressions and then make their results instable. To evaluate it, we carried out additional regressions excluding either of the two variables at a time. In those regressions, the magnitude and significance of their coefficients remained fairly consistent, suggesting that the correlation causes no issue indeed. In sum, the findings regarding the import market's scale lend a positive answer to Research Questions 1 and 2.

In Model 1, the time variable Year has a positive relationship with  $BOSimilarity_{cy}$  ( $p = .065$ ), meaning that taste similarity on the whole has increased over the data period. Its statistical significance is close to the 5% level. In the model without country effects fixed yet, the trend of the Year impact arises mainly from the change of the average  $BOSimilarity_{cy}$  levels of the annual country panels over time, which comprise somewhat overlapped but nonidentical country sets from year to year.

In Model 2, the results of the cultural and economic variables remain consistent. Here, while both Year ( $y$  specific) and  $CulDist_{c-US}$  ( $c$  specific) have been controlled, the interaction  $Year \times CulDist_{c-US}$  is statistically significant, indicating that the magnitude of the temporal trend of  $BOSimilarity_{cy}$  varies depending on a country's cultural distance. Given the interaction's positive sign, countries at a greater cultural distance from the United States have had more a taste similarity buildup than those at a shorter cultural distance. However, the  $Year \times CulDist_{c-US}$  term cannibalizes the explanatory power of the standalone Year term, which is now left with a trivial coefficient and low significance level.

Figure 2 graphs the predicted  $BOSimilarity_{cy}$  level as the combined effect of the three terms,  $CulDist_{c-US}$ , Year, and  $Year \times CulDist_{c-US}$ , in Model 2, with the others controlled, over the sample range of  $CulDist_{c-US}$ . The prediction is shown for the starting and ending years (2002 and 2007). First,  $BOSimilarity_{cy}$  is monotonically decreasing in  $CulDist_{c-US}$ . It is so because the main  $CulDist_{c-US}$  effect (a negative one) dominates the  $Year \times CulDist_{c-US}$  interaction effect (a positive one) on  $BOSimilarity_{cy}$ . Second, whatever  $CulDist_{c-US}$  value a country has,  $BOSimilarity_{cy}$  moves up during the period, as the net effect of Year is positive. Third, the extent of the  $BOSimilarity_{cy}$  increase over time is greater for countries having a larger  $CulDist_{c-US}$ , which shows from the fact that the gap between the predicted 2002 and 2007 lines widens as  $CulDist_{c-US}$  is higher. Although countries more culturally different from the United States have lower similarities at a time in an absolute sense, their similarity levels have risen by a greater degree as time goes by, compared to the others.

These results, overall, express that the entire group of countries had experienced some level of taste assimilation over the years. The similarity gain is not uniform to countries but depends on their cultural distance from the United States, with a larger  $CulDist_{c-US}$  leading



**Figure 2.** The main and interaction effects of cultural distance and time trend on countries' similarity with the United States in box-office consumption of Hollywood movies

to a greater similarity jump. A straightforward reason for this pattern is that those countries whose cultures are close to the United States had historically been familiar or immersed with American media and so adopted the same likings already. By the time of the data, their taste assimilation levels were more or less saturated and might not meet too much room to grow, whereas the societies that used to be more estranged to the American culture, on the other side, opened their doors for Hollywood just within the last decades and have increasingly acquired the mainstream taste since then. This reality should explain why the taste similarity jump is absolutely bigger for the latter than former group.

Models 3 and 4 account for the similarity floors specific to individual countries, in order to explain the variations of  $BOSimilarity_{cy}$  within countries. Test statistics for the fixed-country-effects models indeed validate the heterogeneity of country-specific intercepts,  $F(34, 108) = 5.07, p = .000$ , for Model 3 and for Model 4,  $F(34, 107) = 3.48, p = .000$ .

In these models,  $CineAttd_{cy}$  and  $GDP_{cy}$  have the similar outcomes as in Models 1 and 2. Given that variations in  $BOSimilarity_{cy}$  across countries have been assumed in the fixed

effects models, the factors explain only part of the  $BOSimilarity_{cy}$  variations due to economic changes within countries. Thus, these models capture the  $BOSimilarity_{cy}$  increases attributed to the expanded Hollywood film importation by a market, which becomes richer and bigger over time (i.e., increasing  $CineAttd_{cy}$  and  $GDP_{cy}$ ).

With all these variations in  $BOSimilarity_{cy}$  accounted for already, Year is still statistically significant in Model 3. That is, time alone makes an independent contribution to the taste-similarity rise within countries. The coefficient of Year indicates that from 2002 to 2007, an average country's  $BOSimilarity_{cy}$  had increased by 2.2, which is equivalent to 15% of the sample mean of the similarity measure.

Furthermore, in Model 4, the  $Year \times CulDist_{c-US}$  term continues to have a statistically significant and positive relationship, independently of  $CineAttd_{cy}$  and  $GDP_{cy}$ , while it subsumes the stand-alone Year regressor's predictive power. Again, the results of the regressors involving Year are not confounded by  $CineAttd_{cy}$  and  $GDP_{cy}$ , both of which though tend to be increasing within individual countries. Thus far, it is affirmed that in general the Hollywood film tastes of the respective countries have converged with those of the home U.S. audience through the recent years simply as a trend that is beyond reasons associated with economic growth. All in all, Research Question 3 receives a positive answer.

In Model 4, on top of the fixed country effects, the included regressors still capture 21% of the  $BOSimilarity_{cy}$  variations across  $cy$  observations (the overall  $R^2$ ). The regressors capture 10% of the variations within countries (the within  $R^2$ ) and 33% of the variations across country means (the between  $R^2$ ).

Last, we address the concern about the results' validity given the country-by-year ( $cy$ ) panel data being unbalanced. About 30% of  $cy$  observations are absent from the  $cy$  cross-tabulation, simply due to data unavailability from the source. Even though these missing  $cy$  entries are not due to any prescreening process, there is a question about whether they would spawn any particular data bias. For this, we conduct another set of the same regressions that include only those countries that have to miss any of the 6 recorded years. The regressions, comprising  $n = 74$  observations of  $cy$  for the 23 year-skipping countries, still generate results entirely coherent as those reported from the undivided data set.<sup>11</sup> Moreover, the patterns of regression residuals show no discernible differences between the two regression sets. That is to say, the results as reported are generalizable to the subset of year-skipping countries as well; thus, the missing entries in the panel data do not undermine the validity of the findings.

The regression analysis so far reveals the convergence of the tastes in Hollywood films of individual countries with that of the U.S. audiences in particular.<sup>12</sup> Equivalently speaking, it is the between-country taste similarity that is found. Next, we will further analyze the homogeneity of Hollywood tastes among all countries simultaneously.

### *Quantifying the Global Homogeneity of Hollywood Film Consumption*

The aim of this subsection is to gauge how homogeneous box-office tastes are among all sampled countries at a given time. Then, we can track the tendency in time about the degree of worldwide taste homogeneity for Hollywood movies—specifically whether the countries' movie tastes have become more alike to one another.

The country ( $c$ )  $\times$  film ( $f$ ) cross-tabulation of box-office revenues for each year is characterized. In a year, if the distributions of box-office sales figures tend to be in parallel among importing countries ( $c$ ), or namely, different countries ( $c$ ) produce similar revenue distributions across films ( $f$ ), the country ( $c$ )  $\times$  film ( $f$ ) cross-tabulation will favor independence between the two dimensions, country ( $c$ ) and film ( $f$ ). Otherwise, provided that countries individually have unique sales revenue patterns over the same U.S. films, country ( $c$ ) and film ( $f$ ) are interdependent.

Cramér's  $V$  is calculated for the  $c \times f$  cross-tabulation to measure the strength of the interdependence versus independence between  $c$  and  $f$ . A large (versus small) Cramér's  $V$ , in this context, indicates heterogeneous (vs. homogeneous) audience tastes about Hollywood movies amid the observed importing countries.

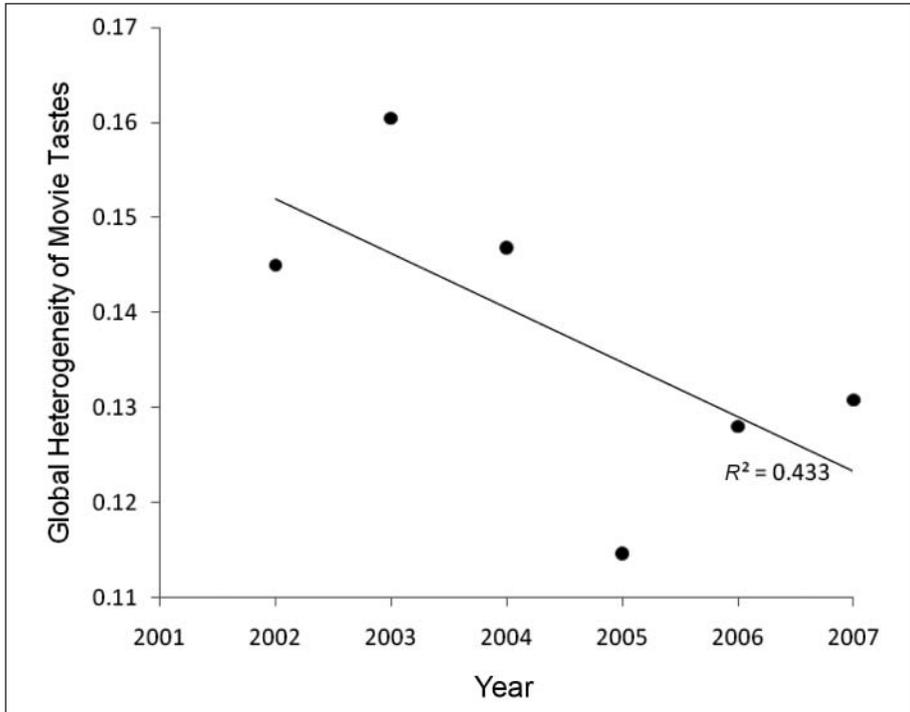
We calculate the Cramér's  $V$  for each year from 2002 to 2007. The yearly Cramér's  $V$ s are plotted in Figure 3, with their statistics detailed in the note to the figure. The series of  $V$  statistics is in a decline pattern, falling by 10% or so from 2002 to 2007, which means that country and film became increasingly independent then. In other words, the cinema markets have selected and consumed individual Hollywood movies in ways that are increasingly homogeneous. This finding on the among-country homogeneity corresponds well to the trend of the between-country similarity reported from the regressions, further substantiating the positive answer to Research Question 3.

## Conclusions

By way of international trade and globalization, media exports from the media-rich sources have spread over the world through numerous channels and in various forms. However, the formation and evolution of the tastes of different communities over global media products, typically American audiovisual goods, have not been systematically understood. This empirical study tackles this pivotal issue that recurs in the international communication dialogue by taking advantage of the latest available information on worldwide theatrical consumption of Hollywood movies.

Using the 2002-2007 panel data of film-specific sales revenues in a wide range of countries, we find that the similarity of a country's aggregate taste in using Hollywood movies to that of the United States is affected by its cultural distance to the United States and by cinema market size. The more culturally alike the country is to American society, the greater its similarity of taste is. An enlarged market scale also augments the similarity.

Also important is that the respective countries' similarities in Hollywood tastes have increased over the data duration. This trend holds true even when country-peculiar variations are controlled. Another key finding is that in those markets with a culture more different from that of the United States, taste similarities have climbed up by a greater extent. These patterns resonate with the indication that the taste homogeneity among all countries has intensified. The evidences for this tendency are limited to no particular region or subset of countries but suggest that world cinematic audiences have acquired increasingly indistinguishable preferences in choosing Hollywood features to watch. The study presents important implications for international communication. The



**Figure 3.** The global heterogeneity, measured by Cramér's Vs, in consuming Hollywood movies shows a falling trend from 2002 to 2007

Note: The statistics of the Cramér's Vs are reported as follows:

For 2002, the 25 (c)  $\times$  247 (f) box-office revenue cross-tabulation,  $\chi^2(5904, N = 20,332) = 10,317$ , generates Cramér's V = .145.

For 2003, the 19 (c)  $\times$  279 (f) cross-tabulation,  $\chi^2(5004, N = 21,906) = 10,147$ , has Cramér's V = .160.

For 2004, the 26 (c)  $\times$  254 (f) cross-tabulation,  $\chi^2(6325, N = 23,592) = 12,711$ , has Cramér's V = .147.

For 2005, the 24 (c)  $\times$  215 (f) cross-tabulation,  $\chi^2(4922, N = 17,444) = 5,271$ , has Cramér's V = .115.

For 2006, the 28 (c)  $\times$  269 (f) cross-tabulation,  $\chi^2(7236, N = 20,979) = 9,392$ , has Cramér's V = .128.

For 2007, the 30 (c)  $\times$  326 (f) cross-tabulation,  $\chi^2(9425, N = 23,733) = 11,771$ , has Cramér's V = .131.

propagation and adoption of media products are embedded in culture and moderated by market factors. Societies in cultural kinships have grown more similar media tastes than those that are not in cultural kinships. In spite of the differences in cultural and economic backgrounds, the global landscape in receiving of Hollywood exports has moved toward a state of uniformity that center on the tastes of the audience market where the films are originated. This finding renews the debate among the contending perspectives about the impact of transnational media flow, although the workings and ramifications of the trend should be further researched.

We recognize that the 6-year period under study is somewhat restrictive and may not reflect on the film tastes over an extended media globalization history. Unfortunately,

country-by-film box-office sales data for earlier times are either nonexistent or unavailable. So the consumption homogenization for the U.S. media products in previous decades has to be examined by other ways.

The study is also limited by only U.S. films being covered at in the measurement of media-taste similarities. The dynamics of the use of other media products, either imported from other sources or locally made in individual countries, may or may not be exemplified by Hollywood films. Differentiated demand for alternative media offerings can coexist with the more homogenous use of American film exports, as found here. More research is needed to provide a fuller picture of global media tastes.

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### **Notes**

1. For convenience, even territories like Hong Kong will be referred to as a country henceforth.
2. The Box Office Mojo Web site gathers and updates the box-office revenue records from the authorities or organizations that report cinema admission receipts in the respective countries, for example, the Motion Picture Association of America for the United States. The U.S. box-office figures are posted on individual movies' pages on the Web site; the foreign box-office figures are retrieved from the archives created for individual countries in the Web site's international section (<http://www.boxofficemojo.com/intl/>).
3. To verify the accuracy of weekly charts' figures, we found that for movies listed in yearly charts, their yearly grosses are almost identical to the grosses obtained from the identified weekly charts as described. Unsurprisingly, the sales revenues collected at the tail of movies' exhibition life prior to cancellation from screens made a very small contribution to their gross accumulations. Therefore, films' last-appeared gross figures from weekly charts are virtually equal to the cumulative grosses in yearly charts.
4. The rank length of the weekly and yearly top-grossing charts varies to a limited extent across the countries. For almost all countries, weekly charts report the top 20s. Only a few countries' weekly charts are the top 10. Yearly charts typically include the top 150s.
5. Assuming the economic and financial grounds about whether films can be ranked in box-office charts, excluding such cases will leave out the meaningful variations they cause in box-office popularity vis-à-vis the uncensored cases where revenue information is available and hence will bias the measurement of movie-taste similarities. It would prejudice the analysis in favor of the uncensored cases.
6. In the data set, as stated earlier, it is common for a film to record with zero box-office gross for a country. Here, the zero value is the lower bound for the revenue variable, while negative values are impossible and irrelevant. For a dependent variable censored at zero, the Tobit estimation is called for (see Greene, 2000).

7. The Tobit estimation explains not only the variations in the uncensored observations (i.e., the variations in the box-office revenues that are positive) but also the variations in the probability of observations being uncensored (i.e., the likelihood of movies observed with an actual gross). See Greene (2000). The Tobit  $t$  statistic of the regressor indicates the overall explainability of this variable in terms of both aspects.
8. In addition to the Tobit  $t$  statistics, the Pearson correlation for the two countries' box-office revenues is also calculated. The Tobit  $t$  versus Pearson values across  $cy$  are extremely in line with each other. Actually, they both also correspond intimately to the pseudo  $R$  values of the Tobit regressions, which have large degrees of freedom. These checks suggest that the  $t$  values competently evaluate the precision of the foreign revenue prediction based on the U.S. sales figures.
9. Although Hofstede's cultural dimensions are not specific to media consumption, it is believed that they are characteristics that underlie a society's values and lifestyle, including media consumption and taste.
10. The Cinema Intelligence Database of Screen Digest does not include Lebanon, which appears for 1 sample year (i.e., 2007). This country's admission number was approximated by the predicted value from regressing cinema admissions over per capita GDP and population size among all the other countries.
11. The results of the additional regressions are not reported in the interest of space but are available from the author upon requests.
12. The BOSimilarity <sub>$cy$</sub>  trend found contrasts with Lee's (2006a) conclusion in the case of Hong Kong, that an individual market's tastes in Hollywood films have diverged from the United States's. Figure 1 and our calculations show that the Hong Kong-U.S. similarity has increased constantly over the years. The discrepancy between the studies' findings should stem from the different statistical metrics used. Lee defined box-office predictability via standardized coefficients of the U.S. revenue in the regression of the Hong Kong revenue. As his analysis mixes movies of all different years in the same regression, the decreasing magnitudes, as found in Lee, of the standardized coefficient of the U.S. revenue over years actually mean that the unit contribution of the U.S. sales figures to the Hong Kong receipts shrinks over time in a standard scale that pools the revenue variances and means of all different years. The standardized coefficients are inferred from the combined film sample, even though the degree of prediction precision likely differs across the yearly sets of films. However, our study quantifies explicitly the strength of the relationship between the home and foreign box-office sales for years separately.

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## Bios

**W. Wayne Fu** (PhD, Northwestern University, 2000) is an associate professor in the Wee Kim Wee School of Communication and Information at Nanyang Technological University (Singapore). His primary research interests include the economics of media trade and flow.

**Achikannoo Govindaraju** (MA, Nanyang Technological University, 2008) is a secondary school teacher and freelance TV producer in Singapore. She has been interested in research concerning audiences of foreign movies.

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