IMPACT OF NATIONAL CULTURE ON ONLINE CONSUMER REVIEW BEHAVIOR

Jianwei Lai, University of Maryland, Baltimore County
Peng He, University of Maryland, Baltimore County
Hsien-Ming Chou, University of Maryland, Baltimore County
Lina Zhou, University of Maryland, Baltimore County

ABSTRACT

This research aims to investigate culture impact on the content of helpful online consumer reviews. Two distinct cultures, American and Chinese, were selected for comparison. The hypothesized culture effects were empirically examined with online customer reviews data collected from both amazon.com and amazon.cn. The data was first analyzed with a qualitative method to encode the content of online reviews, and then the encoded data were analyzed with a quantitative method to test the hypotheses. The results show that American reviews are more likely to express their own opinions on products and American reviews contain more recommendations to others than Chinese reviews. In addition, Chinese and American customer reviews focus on different aspects of the products. The findings of this study can be used to improve customer relationship and product marketing in globalized e-commerce.

INTRODUCTION

Online customer reviews can be defined as peer-generated product evaluations posted on company or third party websites. Retail websites offer consumers the opportunity to post product reviews with content in the form of numerical star ratings and open-ended customer-authored comments about the product (Mudambi et al., 2010). When consumers search for product information and potentially buy products on the Internet, they could browse online reviews from previous customers. The content of reviews could vary from product functional reviews to customer service. The mere presence of customer reviews on a website such as Amazon.com can improve customer perception of the website (Kumar et al., 2006). Web sites elicit customer reviews for several reasons, such as to serve as a mechanism to increase site "stickiness," and to create an information product that can be sold to other online retailers. Reviews that are perceived as helpful to customers have greater potential value to companies, including increased sales (Chen et al., 2008; Chevalier et al., 2006; Clemons et al., 2006; Ghose et al., 2006).

Recent research has examined online customer product reviews, specifically looking at the characteristics of the reviewers (Forman et al., 2006; Smith et al., 2005). In addition, cultural dimensions have been found to vary across different countries and different products (Lee et al., 2008). Although many studies have been conducted to investigate issues in cross-cultural business (e.g., Blocker, 2011, Pauleen, 2010, Standifer, 2010), to the best of our knowledge, none has focused on the impact of culture on the content of customer reviews. To fill the void, we compare customer reviews from two distinct cultures (i.e., American and Chinese) on three products. The rest of this paper is organized as follows. In Section 2, we provide background on culture model and propose hypotheses related to culture effects on online consumer reviews. In Section 3, we describe methodology design in detail, followed by results and discussion in Section 4. Finally, we conclude with paper with implications of research results and future research issues in Section 5.

BACKGROUND AND HYPOTHESIE DEVELOPMENT

Individualism-collectivism (Hofstede, 1983) is one of the most commonly used dimensions in cross-cultural studies. Members of individualist cultures (e.g., American) tend to hold an independent view of the self that emphasizes separateness, internal attributes, and the uniqueness of individuals, while those of collectivist cultures (e.g., Chinese) tend to hold an interdependent view of the self that emphasizes connectedness, social context, and relationships. For example, Chinese have lower self-disclosure and responsiveness. The attitudinal and behavioral differences between individualism and collectivism cultures are summarized in Table 1 (Aaker et al., 1997). For instance, Culture affects majority influence in computer-mediated communication (Zhang et al. 2007).

Table 1: Relative Attitudinal and Behavioral Differences between Individualism and Collectivism (Aaker et al., 1997)

	Individualism (e.g., United States, Australia, Canada)	Collectivism (e.g., Hong Kong, Taiwan, Japan)
Self-construal	Defined by internal attributes, personal traits	Defined by important others, family, friends
Role of others	Self-evaluation (e.g., standards of social comparison, sources of appraisal regarding self)	Self-definition (e.g., relationships with others define self and impact personal preferences)
Values	Emphasis on separateness, individuality	Emphasis on connectedness, relationship
Motivational drives	Focus on differentiation, relatively greater need to be unique	Focus on similarity, relatively greater need to blend in
Behavior	Reflective of personal preferences and needs	Influenced by preferences, needs of close others

This table represents the relative attitudinal and behavioral differences associated with two different cultures – Individualism versus Collectivism.

Members of collectivist cultures tend to form attitudes about individuals on the basis of both dispositional traits and contextual factors. However, members of individualist cultures form attitudes about individuals solely on the basis of dispositional traits (Cousins et al., 1989). We expect these cultural differences to influence people's behaviors in reviewing online products. Thus, we hypothesize that:

H1: American customers are more likely to include products' specific traits in their reviews than Chinese customers.

Online reviewing is a way of expressing people's opinion. Huang (2005) conducted a cross-cultural study to explore the effects of cultural conditions, particularly the dimension of individualism/collectivism, and the effects of individual motives on opinion expression by drawing samples from the United States and Taiwan, two countries with different scores on individualism/collectivism. Results show that incongruence between one's own and the perceived future majority opinion and a lack of efficacy reduce Taiwanese people's willingness to express their opinions. For Americans, it is only motives for not expressing opinions that make them less willing to express their views. Thus, we propose that Americans are more willing to give feedback on products as reviews:

H2: Americans customers are more likely to express their own opinions on products than Chinese customers.

Research in the field of communication shows that persuading style varies from culture to culture (Burgoon et al., 1982). In a collectivistic culture such as Chinese, the self is bound by relationships with others. Chinese are more inclined to behave in accordance with personal preference and social demand than with objective standard. Such concepts as "renqing" and "guanxi" have impact on how people persuade and influence others. Meanwhile, the dominant cultural values of Americans are individualistic which put the emphasis upon independence and individual rights. During the process of persuasion, persuadees are believed to have the right to choose whether or not to comply. Individuals are socialized to

make rational decisions and prefer to use the factual-inductive style of persuasion (Ng, 1998). Glenn et al. (1982) maintained that persuasion can be carried out in a combination of three basic styles: factual-inductive, axiomatic-deductive, and affective-intuitive, and the weight of each of these basic styles varies from culture to culture. Americans tend to persuade others based on inductive reasoning, Soviets are likely to rely on deductive logic and axiomatic principles, and people in Arab culture tend to apply affective or intuitive style. Hence, we hypothesize that Americans and Chinese use different persuasion styles in their customers' reviews:

H3: American customers and Chinese customers use different persuasion styles in their reviews.

METHODOLOGY

We introduce detailed research design for hypotheses testing in this section. As stated earlier, Chinese and Americans were selected as representatives of two distinct cultures. To isolate culture from other possible confounding factors, we selected data from a popular e-commerce website with presence in both U.S. and China: 1) www.amazon.com (US-based); and 2) www.amazon.cn (China-based).These two websites are also similar in layout. In further minimize possible effects of other factors on the comparison, we randomly selected 3 distinct products in the category of electronic devices that are sold on both websites: a cell phone (Nokia 5530), a camera (Sony DSC-W350 in black color), and a hard drive (Toshiba 2.5-Inch 320 GB External Hard Drive). Another criterion we used in selecting products is the number of customer reviews. Specifically, we selected top-20 reviews with the highest ratings on helpfulness for each of the selected products from both websites. As a result, a total of 120 online customer reviews was collected, including 40 reviews for each product with half in English and the other half in Chinese. We first analyzed the data using a content analysis method. Based on the analysis results, the following coding scheme was created to support hypothesis testing.

- Total number of sentences：the number of sentences in a review
- Overall tone: overall tone of the review, e.g., the product is good.
- Price: comments on price
- Features: comments on product features (e.g., the cell phone has a nice camera).
- Recommendation: whether recommend the product to others
- Promotions: whether there is promotion (e.g., free accessories) or not
- Genuine: whether the product is genuine or not.
- Place of manufacture: the location of the manufacturer
- Others (e.g. customer services, shipping and returning policies)

Each of the dimensions included in the coding scheme was calculated on the frequency basis. For instance, the value of features for a review was measured as the number of times that product features were commented in that review.

RESULTS AND DISCUSSION

Based on the coding results, we performed Chi-square and T-test to test the hypotheses. The frequencies and percentages of concerned aspects are shown in table 2. The descriptive statistics of the number of sentences and T-test results are reported in Table 3.

Table 2: Frequencies and Percentages of Concerned Aspects

Products	Culture	
Aspects	Chinese	American
Overall Comment	42(16%)	103(14%)
Price	25(10%)	35(5%)
Features	98(37%)	439(61%)
Recommendation to Consumers	4(2%)	17(2%)
Accessory Promotion	16(6%)	0(0%)
Genuine	8(3%)	1(0.5%)
Location of Manufactory	8(3%)	0(0%)
Others	3(1%)	0(0%)
Total Comments	262	717

This table records the frequencies and percentages of concerned aspects of American and Chinese reviews.

Chi-Square tests were performed to examine whether American and Chinese customers focus on the same aspects of products in their reviews or not. The results show that the focused aspects in Chinese and American reviews are significantly different (x^2 =104.049, $p<0.001$). Thus, hypothesis H1 is supported. It is shown from Table 3 that American customer are more concerned about product features than Chinese customers, accounting for 61% and 37% of reviews respectively. On the other hand, after analyzing all the reviews we found Chinese customers complain much more on customer service of the website than American customers, such as product packing problems and delivering qualities. In addition, only Chinese customers make comments on product genuineness and manufacturer location. One of the possible explanations is that the e-commerce environment in China is not as mature as that in the U.S. For instance, counterfeit digital products remains a concern to e-commerce customers in China.It is shown from Table 3 that American reviews are significantly longer than Chinese reviews. Thus, hypothesis H2 is supported. In addition, Table 3 summarizes the frequency and distribution of concerned aspects in online consumer reviews. It is shown from the last row that American reviews contain more opinions than Chinese reviews, which also supports hypothesis H2.

Table 3: Descriptive Statistics of the Number of Sentences and T-Test Results

Culture	Mean	Standard Deviation	N	T statistic	*p-value*
Chinese	3.47	3.92	208	-6.576	<0.001
American	10.8	7.62	648		

This table shows T-test of means of customer review sentences.

Compared with Chinese customers, American customers are more likely to make direct recommendations to others. For instance, "For anyone who is planning to buy this phone I won't recommend it"; "I recommend to others". Moreover, compared with Chinese customers, American customers tend to provide detailed reasoning such as their own usage experience to justify their recommendations. T-test results of sentence numbers of recommendation reviews are presented in table 4. American recommendation reviews use significantly more sentences than Chinese recommendation reviews. Therefore, hypothesis H3 is supported.

Table 4: T-Test Results of Sentence Numbers of Recommendation Reviews

Culture	Mean	Standard Deviation	N	T statistic	*p-value*
Chinese	2.33	1.53	3	-4.32	<0.001
American	13.67	9.57	15		

This table shows T-test of recommendation reviews sentence numbers.

We also analyzed the data at the individual product level, and the findings are consistent with those from all the products as a whole.

CONCLUSIONS AND FUTURE WORK

Cross-cultural studies are not very common because any such study must confront the difficulty of explicitly identifying and measuring the intangible concept of culture in the context of a particular system (Straub et al., 2002). In this cross-cultural research, 120 online customer reviews of three electronic products from Amazon.com (US-based) and Amazon.cn (China-based) were carefully analyzed to test the hypothesized effects of culture on the content of online customer reviews.All the three hypotheses related to the proposed effects of culture were supported by the empirical results of this study. First, compared with Chinese customers, American customers are more willing to provide feedback on products by expressing more opinions. Second, American customers were found to make more recommendations to others than their Chinese counterparts, which also suggests that people from the two cultures have different persuasion styles. Third, Chinese and American customers focus on different aspects of products in their reviews. These findings can be used to improve customer service, product marketing and promotion in future. This study exposes several limitations that deserve future research.

First, we used sentence number to measure the willingness of customers to provide feedbacks online. One possible limitation with this metric is that Chinese and English sentences may have different levels of expressivity. Another limitation is that other contextual factors that may contribute to the volume of online contribution are ignored in this study such as online promotion and marketing strategies. Second, we focused on the content instead of polarity of online customer reviews. Sentiment analysis, such as polarity mining (Zhou and Chaovalit, 2008), may be used to extract the polarities of customer reviews on product features to support the comparison on a new dimension. For example, we observed from our preliminary data analysis that Chinese customer reviews tend to contain more negative feedback than American reviews. This observation needs to be validated in future study. Third, we tested culture effect on online consumer reviews with one e-commerce website. Further work with larger datasets from different websites is needed to test the generality of the findings to new settings.

REFERENCES

Aaker, J. L. and Maheswaran, D. (1997) "The effect of cultural orientation on persuasion.", *Journal of Consumer Research*, 24, 3, p. 315-328.

Blocker, C.P., (2011) "Modeling customer value perceptions in cross-cultural business markets." *Journal of Business Research*, 64, 5, p. 533-540.

Burgoon M., Dillard J., and Doran N. (1982) "Cultural and situational influences on the process of persuasive strategy selection." *International Journal of Intercultural Relations,* 6, 1, p. 85-100.

Chen, P. Y., Dhanasobhon, S. and Smith, M. D (2008) "All reviews are not created equal: The disaggregate impact of reviews and reviewers at amazon.com", *Carnegie Mellon University* (available at SSRN: http://ssrn.com/abstract=918083).

Chevalier, J. A. and Mayzlin, D (2006) "The effect of word of mouth on sales: Online book reviews." *Journal of Marketing Research*, 43, 3, p. 345-354.

Clemons, E. K., Gao, G. G. and Hitt, L. M (2006) "When online reviews meet hyperdifferentiation: A study of the craft beer industry." *Journal of Management Information Systems*, 23, 2, p. 149-171.

Cousins, S (1989) "Culture and selfhood in Japan and the US." *Journal of Personality and Social Psychology*, 56, 1, p. 124-131.

Forman, C., Ghose, A. and Wiesenfeld, B. (2006) "Examining the relationship between reviews and sales: The role of reviewer identity disclosure in electronic markets." *Information Systems Research*, 19, 3, p. 291-313.

Ghose, A. and Ipeirotis, P. G. (2006) "Designing ranking systems for consumer reviews: The impact of review subjectivity on product sales and review quality." *In Proceedings of the Workshop on Information Technology and Systems*(available at: http://people.stern.nyu.edu/panos/publications/wits2006.pdf).

Glenn E.S, Witmeyer D., and Stevenson K. A. (1977) "Cultural and situational influences on the process of persuasive strategy selection." *International Journal of Intercultural Relations*, 1, 3, p. 52-66.

Hofstede, G. (1983) "The Cultural Relativity of Organizational Practices and Theories." *Journal of International Business Studies*, 14, 2, p. 75-89.

Huiping Huang. (2005) "A cross-cultural test of the spiral of silence." *International Journal of Public Opinion Research*, 17, 3, p. 324 – 345.

Kumar, N. and Benbasat, I. (2006) "Research Note-The Influence of Recommendations and Consumer Reviews on Evaluations of Websites." *Information Systems Research*, 17, 4, p. 425-439.

Lee, I., Choi, G. W., Kim, J., Kim, S., Lee, K., Kim, D., Han, M., Park, S. Y. and An, Y. (2008) "Cultural dimensions for user experience: cross-country and cross-product analysis of users' cultural characteristics." *In Proceedings of the 22nd British HCI Group Annual Conference on HCI 2008: People and Computers XXII: Culture, Creativity, Interaction-Volume 1 (2008).* British Computer Society

Mudambi, S. M. and Schuff, D. (2010) "What Makes a Helpful Online Review? A Study of Customer Reviews on Amazon.com." MIS Quartly, 34, 1, p. 185-200.

Ng, R. (1998) "The influence of collectivism-individualism on persuasion in Chinese and American cultures." *Communication and culture: China and the world entering the 21st century*, p. 71-82.

Pauleen, D.J., D. Rooney and N.J. Holden (2010) "Practical wisdom and the development of cross-cultural knowledge management: a global leadership perspective." *European Journal of International Management*, 4, 4, p. 382-395.

Smith, D., Menon, S. and Sivakumar, K. (2005) "Online peer and editorial recommendations, trust, and choice in virtual markets." *Journal of Interactive Marketing*, 19, 3, p. 15-37.

Standifer, R.L., Evans K.R. and Dong B., (2010) "The Influence of Spirituality on Buyer Perception within Business-to-Business Marketing Relationships: A Cross-Cultural Exploration and Comparison." *Journal of Relationship Marketing*, 9(3): p. 132-160.

Straub, D., Loch, K., Evaristo, R., Karahanna, E. and Srite, M. (2002) "Toward a theory-based measurement of culture." *Human Factors in Information Systems*, p. 61-82.

Zhang, D., Lowry P.B., Zhou L., and Fu X. (2007). "The Impact of Individualism-Collectivism, Social Presence, and Group Diversity on Group Decision Making under Majority Influence." *Journal of Management Information Systems*, 23, 4, p. 53-80.

Zhou, L. and P. Chaovalit (2008), "Ontology-supported Polarity Mining." *Journal of the American Society for Information Science and Technology*, 59, 1, p. 1-13.

BIOGRAPHY

Jianwei Lai is working on her PhD degree in the Information Systems department, University of Maryland, Baltimore County. Her research areas include artificial intelligence and human-centered computing. Her current research interests are online deception detection, adaptation techniques for Web navigation on mobile handheld devices, and off-screen objects visualization on mobile handheld devices.

Peng He is currently a doctoral student in the Department of Information Systems at University of Maryland, Baltimore County (UMBC). His research areas include database, data mining and spatial outlier detection. His current research interests are focusing on applying Semantic techniques to counter cyber threads and analyzing the impact of online customer reviews. He got his B.S. in Computer Science and his M.S. in Information Systems, and he had worked at Microsoft China from 2006 to 2007.

Hsien-Ming Chou is currently a doctoral student in the Department of Information Systems at the University of Maryland, Baltimore County, USA. He worked for more than ten years as a software engineer in information system field and a computer lecturer in PC school. He got certifications of Sun Certified Java Programmer, Sun Certified Web Component Developer and Structured Query Language of Oracle database.

Lina Zhou is an Associate Professor of Information Systems, University of Maryland, Baltimore County. Her research aims to improve knowledge management and human decision making by designing and developing intelligent technologies.