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ABSTRACT

As the advent of new media and communication technologies in recent years, user-generated content (UGC) in the Internet has been increasingly considered as a credible and organic form of "word of mouth" among tourists. New social media websites like Flickr enable more and more tourists to share their experience through uploading photos they took during their trips, an activity that has been gaining popularity among internet users. Unlike the pictorial materials that are produced by destination marketing organizations (DMOs), pictorial content that is generated by internet-users reflect users' perceptions of the destination. This study aims to make a comparison between projected and perceived image of a destination by using qualitative pictorial data collected from both DMOs and UGC. Peru was chosen as a case study destination to assess the difference between projected destination image that is produced by Peru official websites and perceived image that is reflected by visitors' photographs posted on Flickr.

Keywords: *content analysis, destination image, Flickr, photography, qualitative data, user-generated content*

INTRODUCTION

This research on destination image deals with comparative analysis of pictorial materials as produced by destination marketing organizations (DMOs) and by destination visitors, through posting user-generated content (UGC) on the websites like Flickr. While destination image has been studied since 1970s, the research was mostly done by employing quantitative surveys of human subjects (Pike, 2002). With respect to the qualitative data in destination image studies, pictorial materials have been used even less frequently than texts (Stepchenkova & Mills, 2010), some notable examples include studies by MacKay and Fesenmaier (1997), MacKay and Couldwell (2004), and Govers and Go (2005).

Tourism experience is highly visual. "Slideshows and photographs are a common way to communicate personal trip experiences and perceived destination images" (Schmallegger, Carson, and Jacobsen, 2010, p. 245). User-generated content has been increasingly considered as an analog of word-of-mouth in the Internet, since it is organic in nature, i.e., the producer of the UGC has, in general, no financial incentive in promoting the destination. By extending an

argument by Gartner (1993) on induced versus organic image formation agents, the UCG is highly influential in forming destination images and expectations of potential tourists.

Research employing user-generated content is in its early development. The meta-survey of tourism- and hospitality-related academic articles conducted the first author together with her graduate student yielded 44 articles and conference papers published in the period of 2005-2010. There were only five articles in the obtained pool which used photography as opposed to textual content.

This research compares projected and perceived images of a destination using qualitative pictorial data collected from the side which induces the destination image (DMOs) and the side which reflects the image through taking and publishing photos during visiting the destination (UGC). The research tests a methodology to conduct such comparisons by constructing perceptual maps of "typical" images, which are analytically obtained from the collected data.

METHODOLOGY

The current research has chosen Peru as a case study destination. Peru is getting more popular among American and European tourists due to the development and diversity of its travel offer which blends history, indigenous cultures, breathtaking scenery, and tremendous ecological diversity. The purpose of the research was to explore feasibility of constructing perceptual maps of destination image (Li & Stepchenkova, in press) as projected by Peru's official website and perceived images of Peru as reflected by visitors' photographs posted on Flickr.

Data collection

The projected, or induced, image was defined as represented by the official Peru tourism website, while the perceived image was represented by photos posted on the photo sharing website www.flickr.com. DMO sample was collected from the photo gallery in the Peru tourism official website www.peru.info/en. The photo gallery organized the photos by 24 destinations and six categories. Because the photos by categories overlapped with the photos by destination, only the photos by destination were collected. In the photo gallery eight destinations represent the north part of Peru, six destinations represent the central part of the Peru, and ten represent the south part of the Peru. The total number of collected DMO photos was 530.

To make the analysis more relevant, the researchers decided to collect the most recent images, namely, those taken in year 2010 which were tagged with the words "Peru" and "travel." The Flickr search engine allows users to view and download only the first 4000 search results; therefore, researchers divided the year into seven periods to make sure that, for the purposes of sample selection, they get access to all Flickr images for that year. Since the distribution of photos was uneven, researchers sampled the photos proportionally from each period, for the total sample number of 500. For sampling within each period, a systematic random sampling described by Lohr (1999, p.42) was used. A very few out of focus or low resolution images were discarded during the sampling process, in their place another images selected randomly were included in the sample.

Table 1
Flickr Sample

	Jan-Feb	Mar-April	May 1st-May 15th	May 16th-June 30th	July 1st-July 14th	July 15th-Aug 31st	Sep-Dec	Total
Number of photos	3464	2807	3687	3422	3606	2964	3405	23355
Sample	74	60	79	73	77	64	73	500

Data analysis

The researchers employed a content analysis technique to analyze the selected 530+500 images. Content analysis is a long-standing method to analyze the qualitative content – texts or visuals – in a systematic, verifiable, and replicable way (Krippendorff, 2004; Neuendorf, 2002). While, admittedly, the content analysis technique has been used more often with the textual content, pictorial material can also be content-analyzed (MacKay & Couldwell, 2004). Since the goal of the research was to obtain a quantitative assessment of the image, content analysis was chosen over more interpretative techniques like semiotic analysis.

The set of standardized image categories for Peru was developed using a combined approach: about 30% of the selected images were examined first in order to surmise the main destination attributes pictured on the photos (Glaser & Strauss, 1967; Neuendorf, 2002), while the seminal paper by Echtner's and Ritchie's (1993) provided the theoretical groundings for category formalization. Thus, the images were coded into 20 categories, among which there were Natural Landscapes, People, and Festivals and Rituals (the final list is given in Table 2). In essence, each category was regarded as a destination attribute. Categories were clarified and refined through reliability coding on a subsample of 150 images, and formal coding guideless were issued for the coding procedure of the whole sample.

Each photo was regarded as a single unit of content (Krippendorff, 2004; Neuendorf, 2002). Typically, in the content analysis of textual materials, each unit of content is classified into one and only one category (Weber, 1990). However, since photos are complex entities and cannot be easily and reliably broken down into smaller content units, it was decided to code each image into several categories (in practice, in no more than 4 categories). Conceptually, the multiple coding of a single image can be compared to a survey format where each respondent can give several (typically, three) answer choices to a question from Echtner and Ritchie (1993): "What images or characteristics come to mind when you think of XXX as a vacation destination?"

The coding process resulted in the ranking lists of Peru's destination attributes used in photos by DMOs and by UGC. Chi-square analysis was applied to statistically compare which side – DMOs or UGC – pictured which destination attribute more often and, therefore, to decide on congruity between projected and perceived images across all categories.

The probability of each destination attribute to be reflected in any given image (on the DMO and UGC sides, separately) was calculated using the frequency of that image and the respective sample size. Expected and factual co-occurrences of any two destination attributes in the DMO and UGC photos were calculated using the statistical approach described in Li and

Stepchenkova (in press) and perceptual maps reflecting the "typical" destination perceptions of each of the two sides were constructed.

RESULTS

The first findings indicate that there are significant differences in frequencies of several destination attributes of Peru, or categories, as reflected in images posted by DMOs and UGC (see Table 2).

Table 2
Chi-Square Results

Categories	DMO (N=530)	DMO (%)	Flickr (N=500)	Flickr (%)	Total	Chi-Square*	p-value**
Nature & Landscape (NL)	208	39.2	199	39.8	407		
People (PP)	174	32.8	151	30.2	325		
Archaeological Sites (AS)	114	21.5	94	18.8	208		
Way of Life (WOL)	63	11.9	99	19.8	162	12.155	0.000
Traditional Clothing (TC)	66	12.5	39	7.8	105	6.084	0.014
Outdoor/Adventure (OA)	55	10.4	38	7.6	93		
Architecture/Buildings (A)	48	9.1	36	7.2	84		
Wild Life (WL)	40	7.5	33	6.6	73		
Art Object (AO)	33	6.2	17	3.4	50	4.450	0.035
Tourism Facilities (TF)	24	4.5	21	4.2	45		
Other (O)	11	2.1	33	6.6	44	12.880	0.000
Urban Landscape (UL)	21	4.0	23	4.6	44		
Plants (FL)	9	1.7	33	6.6	42	15.805	0.000
Domesticated Animals (DA)	15	2.8	26	5.2	41	3.780	0.052
Festivals and Rituals (FR)	29	5.5	5	1.0	34	16.117	0.000
Leisure Activities (LA)	16	3.0	17	3.4	33		
Food (F)	10	1.9	18	3.6	28	2.855	0.091
Transport/Infrastructure (INF)	7	1.3	12	2.4	19		
Country Landscape (CL)	10	1.9	7	1.4	17		
Tour (T)	13	2.5	4	0.8	17	4.330	0.037
* In all tests df=1							
** Results significant at 0.1 level are shown							

The perceptual map constructed for the DMO sample is given in Fig. 1. The three blue bubbles stand for the most frequent image categories – Natural Landscapes, Archeological Sites, and People. The other categories are represented by white bubbles. The links between the bubbles indicate if any two categories have a tendency to be found together in a photograph. The solid links mean that the number of co-occurrences of the two categories is statistically significant at 0.05 level – the number in parentheses next to the link should be greater than 1.96. For example, the number 40 at the link between People and Way of Life means that there were 40 photos in the DMO sample which were coded into both of these categories. The number 4.33 in the parentheses next to the link is greater than 1.96, meaning that that 40 co-occurrences of these two categories is a large enough number to conclude that these two categories have a tendency to be together in the image, rather than occur by chance. There were a few categories

without any links, which means that these were stand alone categories. A good example is the Art Object category – the DMO sample had 33 photos with images of arts and crafts, as well as objects from museum collections.

The perceptual map for the Flickr sample is not yet finished. Before producing the final perceptual maps of Peru, the author plans to conduct the reliability study to verify the content analysis categories and validate the coding procedure (Neuendorf, 2002). The issue of the sample size is also an important consideration. The adequacy of the sample size will be determined by using a split-half technique (Krippendorff, 2004): the selected 500 images for each side will be split in half, and categories frequencies will be calculated for each half. Chi-square comparisons of category frequencies will be conducted for several random half-splits. If the two halves of each split are "homogeneous", i.e., content analysis on each half leads to the same research conclusions, then the sample size is large enough. If not, then more images will be added to increase the sample size. All these analyses and the perceptual maps will have been finalized by the time of presentation.

Figure 1
DMO Perceptual Map
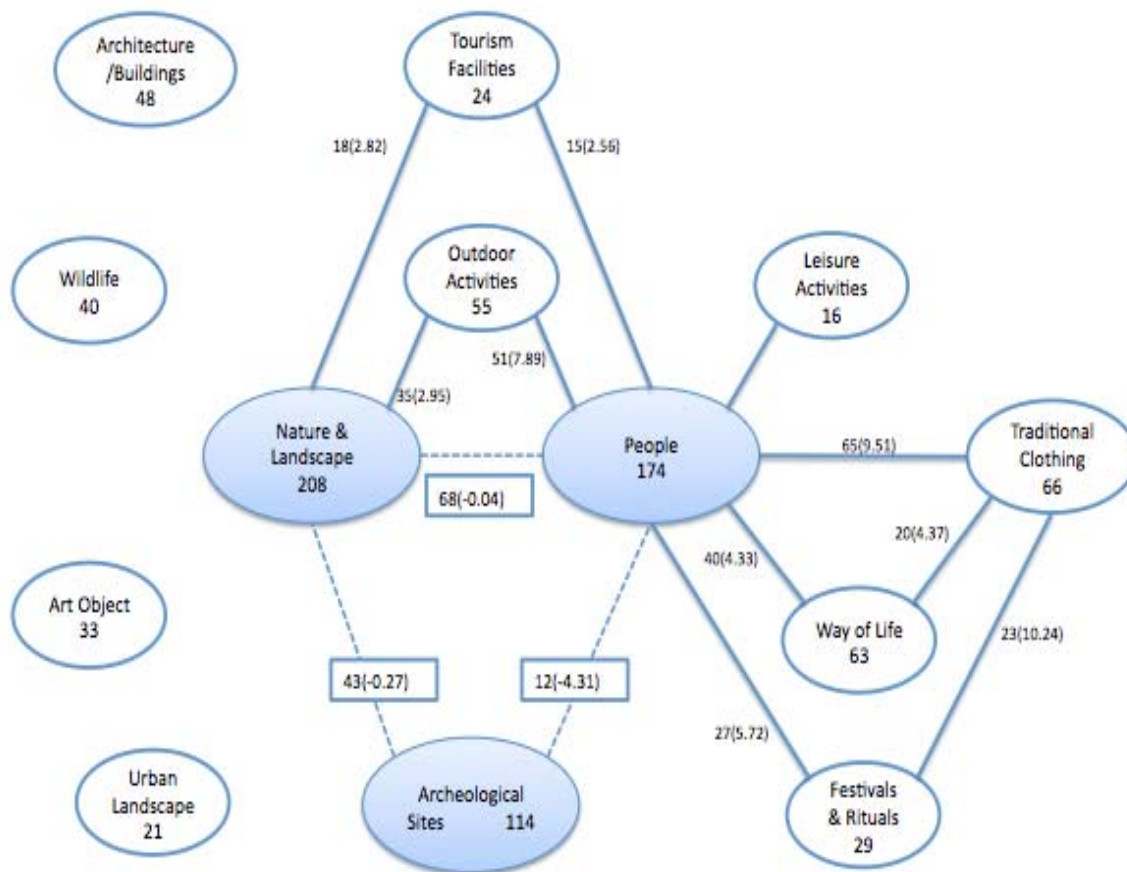
DISCUSSION

The current research is an exploratory study on a feasibility of deriving destination perceptions from the web pictorial content. The proposed methodology of constructing perceptual maps of visual images as projected by DMOs or held by different groups of visitors allows comparisons of the destination projected and perceived images. The research makes possible to identify the "most common" visual image of the destination by placing on the map the most frequent destination attributes and significant links between them. As can be seen from Fig. 1, several categories have a tendency to be found together in DMO images; for example, People, Traditional Clothing, and Festivals & Rituals; or People, Traditional Clothing, and Way of Life. Fig. 2 provides an image of people wearing traditional dress at a festival.

Figure 2
People, Traditional Clothing, and Festivals & Rituals Image: DMO Sample

As indicated by chi-square results, the largest discrepancies between the DMO and Flickr sample lie in the following five categories: Traditional Clothing, Way of Life, Festivals & Rituals, Plants, and Other. The comparison of the Flickr and DMO frequency results shows that there is a difference in the Way of Life category which features living conditions, housing, or everyday activities of local people. The significantly higher frequency of this category among photos taken by Flickr users shows their strong interests in getting to know how people in Peru live their lives. Flickr users took pictures of local people's house, local people weaving, local people dancing, and even pictures of local people doing their daily chores like cleaning and cooking. For the tourists, Peruvian "ways of life" contribute largely to the way they perceive the "real Peru" as a tourism destination. DMO photos, on the other hand, demonstrate interest in promoting traditional culture through pictures of Peruvian "Ways of Life" but more focus are given to traditional cultures and less on how local people live.

Peruvian festival and rituals is one of main attractions that Peru travel official website promotes. However, there is a significant difference between Flickr and DMO photos in the category "Festivals and rituals". Every year, there are hundreds of festivals or carnivals that are held to attract tourists in Peru. However, festivals are also held in a particular time of the year, and the timeframe of the festivals and rituals are short, normally within a week. In addition, a majority of the festivals are not held in the tourism peak season (May to July). Therefore, the chances of attending a festival or carnivals during their trip in Peru for tourists are slim, unless attending festivals is their main purpose of their trip.

Peru is a country that enjoys its fame of being the home to a diversity of animals and plants. While the frequency of the Plans category was significantly higher in the Flickr sample, overall, the total counts were relatively low. "Other" is another category where DMO and Flickr differed significantly. Flickr users took photos to record their trip experiences based on their personal preferences and interests, while the DMO photos were more "structured."

One of the potential and important developments of current research, in the author's view, lie in comparison of visual destination images between visitors from different countries, with different "cultural proximity" to the destination (Kastenholz, 2010; MacKay & Fesenmaier, 2000). Knowing how the cultural background of the visitors relates to their perceptions of the destination will help the destination DMOs better market the destination in different countries and desirable target markets.

REFERENCES

Echtner, C. M., & Ritchie, J. R. B. (1993). The measurement of destination image: An empirical assessment. *Journal of Travel Research, 31*(4), 3-13.

Gartner, W. C. (1993). Image formation process. *Journal of Travel & Tourism Marketing, 2*(3), 191-216.

Glaser, B. G., & Strauss, A. L. (1967). *The Discovery of Grounded Theory: Strategies for Qualitative Research*. Chicago, IL: Aldine Publishing Company.

Govers, R., & Go, F. M. (2005). Projected destination image online: Website content analysis of pictures and text. *Information Technology & Tourism, 7*(2), 73-89.

Kastenholz, E. (2010). "Cultural proximity" as a determinant of destination image. *Journal of Vacation Marketing, 16*(4), 313-322.

Krippendorff, K. (2004). *Content analysis: an introduction to its methodology* (2 ed.). Thousand Oaks, CA: Sage Publications.

Lohr, S. L. (1999). Sampling: Design and Analysis. Duxbury Press.

Li, X., & Stepchenkova, S. (2011). Chinese Outbound Tourists' Destination Image of America: Part I. *Journal of Travel Research, in press.*

MacKay, K. J., & Couldwell, C. M. (2004). Using Visitor-Employed Photography to Investigate Destination Image. *Journal of Travel Research, 42*(4), 390-396.

MacKay, K. J., & Fesenmaier, D. R. (1997). Pictorial element of destination in image formation. *Annals of Tourism Research, 24*, 537-565.

MacKay, K. J., & Fesenmaier, D. R. (2000). An Exploration of Cross-Cultural Destination Image Assessment. [research note]. *Journal of Travel Research, 38*(4), 417-423.

Neuendorf, K. A. (2002). *The Content Analysis Guidebook*. Thousand Oak, CA: Sage.

Pike, S. (2002). Destination image analysis: a review of 142 papers from 1973 to 2000. *Tourism Management*, 23(5), 541-551.

Schmallegger, D., Carson, D., & Jacobsen, D. (2010). The use of photographs on consumer generated content websites: Practical implications for destination image analysis. In N. Sharda (Ed.), *Tourism informatics: Visual travel recommender systems, social communities, and user interface design* (pp. 243-260). Hershey, PA: Information Science Reference.

Stepchenkova, S., & Mills, J.E. (2010). Destination Image: A Meta-Analysis of 2000-2007 Research. *Journal of Hospitality Marketing & Management*, 19(6), 575-609.

Weber, R. P. (1990). *Basic content analysis* (2nd ed.). Newbury Park, CA: Sage.