DMOs and User-Generated Photography: Comparison of Projected and Perceived Images

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Destination Image

• “Destination must be favorably differentiated from its competition, or positively positioned, in the minds of the consumers” (Echtner & Ritchie, 2003:37)

• Desirable differentiation is often achieved by a DMO creating and managing the perceptions, or images, that potential travelers hold about the destination (Ahmed, 1991; Beerli, 2007; Calantone et al., 1989; Gartner, 1993)
User-Generated Content

- **Projected Images:**
  - Image formation agents: DMOs, travel agents, media sources

- **Perceived Images**
  - Image receivers: tourists, residents
  - Gartner’s (1993) typology should be adjusted to include online sources
  - Tourists can also project DIs
  - Travelers tend to trust independent sources like travel blogs and portals (Wang, Yu, & Fesenmaier, 2002)
Photography

• Increase in studies using text and imagery (Stepchenkova & Mills, 2010)
  • but only seven studies employed qualitative data collected on the Web (period of 2000-October 2007)
• Girona, Spain guidebooks (Espelt & Benito, 2005)
• Maltese postcards (Markwick, 2001)
• Jeju standing stones (Hunter & Suh, 2007)
• Visitor-employed photography (MacCay & Couldwell, 2004)
Research Agenda

• Is it feasible to use user-generated photography to extract perceived destination images?
• Do projected and perceived images differ?
• Is there a way to capture these differences and summarize them?
• What are the implications for the DMOs?
Peru: Emerging Popular Destination

- In 2010, annual international tourist arrivals increased 70.3% compared to that in 2004

<table>
<thead>
<tr>
<th>PERU Visitor Arrivals</th>
<th>2004</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1,349,959</td>
<td>2,299,187</td>
</tr>
</tbody>
</table>

(Peru Ministry of Commerce and Tourism, 2011)
Main Tourism Markets

• Central and South America (54%)
  • Chile – 26%
• North America (22%)
  • USA – 18% (second, after Chile)
• Europe (19%)
• Asia (3%)
• Africa, Oceania (2%)
"Peru Door-to-Door" Promotional Campaign

- United States, 2010
- Promote Peru's rich and varied tourism attractions, natural and cultural, on all of its geographical regions
- Direct contact with North American travel agents and tour operators
- Focus:
  Lima, Machu Picchu, Cuzco, Inca Ruins, the Andes, Arequipa and Collca Canyon, Paracas and Nazca, the northern Pacific coast, Iquitos Amazonian area
Methodology

• Data Collection
  • www.peru.travel - 24 regions, 530 photos
  • www.flickr.com - 500 photos

• Category Development
  • 20 categories
  • Reliability study

• Data Analysis
  • Category frequencies
  • Chi-square tests
  • Charting Peru destination image
  • Mapping Peru places of interest
### Categories (N=1030)

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nature &amp; Landscapes</td>
<td>40%</td>
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<tr>
<td>People</td>
<td>32%</td>
</tr>
<tr>
<td>Archaeological Sites</td>
<td>20%</td>
</tr>
<tr>
<td>Way of Life</td>
<td>16%</td>
</tr>
<tr>
<td>Traditional Clothing</td>
<td>10%</td>
</tr>
<tr>
<td>Outdoor/Adventure</td>
<td>9%</td>
</tr>
<tr>
<td>Architecture/Buildings</td>
<td>8%</td>
</tr>
<tr>
<td>Wild Life</td>
<td>7%</td>
</tr>
<tr>
<td>Art Object</td>
<td>5%</td>
</tr>
</tbody>
</table>

- Tourism Facilities, Urban Landscape, Plants, Domesticated Animals, Festivals & Rituals, Leisure Activities, Food, Transport/Infrastructure, Country Landscape, Tours, Other
Nature & Landscapes
Archaeological Site
Wild Life
People, Way of Life, Nature & Landscapes
## Chi-Square Tests

<table>
<thead>
<tr>
<th>Categories</th>
<th>DMO (N=530)</th>
<th>DMO (%)</th>
<th>Flickr (N=500)</th>
<th>Flickr (%)</th>
<th>Chi-Square*</th>
<th>p-value**</th>
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</thead>
<tbody>
<tr>
<td>Nature &amp; Landscapes</td>
<td>208</td>
<td>39.2</td>
<td>199</td>
<td>39.8</td>
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<tr>
<td>People</td>
<td>174</td>
<td>32.8</td>
<td>151</td>
<td>30.2</td>
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<td>Archaeological Sites</td>
<td>114</td>
<td>21.5</td>
<td>94</td>
<td>18.8</td>
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<td><strong>Way of Life</strong></td>
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<tr>
<td>Traditional Clothing</td>
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<td>99</td>
<td>19.8</td>
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<td>39</td>
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<td>Art Object</td>
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<td>Urban Landscape</td>
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<td>4.2</td>
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<td>1.0</td>
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<td>Leisure Activities</td>
<td>16</td>
<td>3.0</td>
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<td>3.4</td>
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<tr>
<td>Food</td>
<td>10</td>
<td>1.9</td>
<td>18</td>
<td>3.6</td>
<td>2.855</td>
<td>0.091</td>
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<tr>
<td>Transport/Infrastructure</td>
<td>7</td>
<td>1.3</td>
<td>12</td>
<td>2.4</td>
<td></td>
<td></td>
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<tr>
<td>Country Landscape</td>
<td>13</td>
<td>2.5</td>
<td>7</td>
<td>1.4</td>
<td></td>
<td></td>
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<tr>
<td>Tour</td>
<td>13</td>
<td>2.5</td>
<td>4</td>
<td>0.8</td>
<td>4.330</td>
<td>0.037</td>
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<td>33</td>
<td>6.6</td>
<td>12.880</td>
<td>0.000</td>
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</tbody>
</table>

* df=1 in all tests

** Results significant at 0.1 level are shown
Charting Peru Destination Image

• Assign probabilities to image categories $p_K = \frac{f_K}{N}$
• Calculate actual co-occurrences numbers for each pair of categories $K$ and $L$
• The number of co-occurrences $f_{KL}$ is a binomial variable
  \[ E_{KL} = Np_{KL} \]
  \[ VAR = Np_{KL}(1 - p_{KL}) \]
• Calculate expected number of co-occurrences when categories $K$ and $L$ are independent
  \[ E_{KL} = Np_K p_L \]
  \[ VAR = Np_K p_L(1 - p_K p_L) \]
• Z-scores:  
  \[ z = \frac{f_{KL} - E_{KL}}{\sqrt{VAR}} \]
People, Traditional Clothing, Festivals & Rituals (DMO)
People, Traditional Clothing, Way of Life (Flickr)
People, Traditional Clothing, Way of Life (Flickr)
Flickr (N=423)

- Cusco – 52%
- Arequipa – 13%
- Puno – 10%
- Lima – 9%
- Ica – 8%
- Loreto – 2%
- Madre de Dios – 2%
Places of Interest: Flickr

Gringo Trail

- **Lima**
  - *city, coast*
- **Ica**
  - *Paracas wildlife reserve, Nasca lines*
- **Arequipa**
  - *city, Collca Canyon*
- **Puno**
  - *Lake Titikaka, Uros and Taquile islands*
- **Cusco**
  - *city, Sacred Valley, Machu Picchu*
Discussion

• Deriving destination perceptions from web pictorial material: feasibility study
• Charting destination images: projected and perceived
• Largest discrepancies: Way of Life, Traditional Clothing, Festivals & Rituals, Plants, and Other
• DMO: more diverse and balanced image
• Flickr: Nature & Landscapes and Archaeological sites; People, and Way of Life
Questions?

• Thank you for attending this presentation!