Enhancing Exploratory Search with Hedonic Browsing Using Social Tagging Tools

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Exploratory Search is...

- A complex set of search activities within an Information Retrieval system
- Used to broadly explore a topic of interest (Wilson, 2007)

Used when
- Search goal is not clear
- Searching for something complex
- Searchers are not satisfied with results from traditional search systems
Social Tagging

- a feature of various online social networks
- to organize information elements
- by enabling people to label, annotate, or tag info resources

Main uses of tagging tools:

- To organize resources using the WWW
  - Websites in Delicious and StumbleUpon
  - Photos in Flickr
  - Music and video files in Last.fm and YouTube
  - Books in Amazon.com and LibraryThing
- For information discovery, sharing, and social ranking
H$_1$: Perceived enjoyment has a positive impact on exploration of social tagging

H$_2$: Curiosity has a positive impact on exploration of social tagging
Method

- Exploratory study ➔ Structural Equation Modeling (SEM)
  For identifying and estimating models of linear relationships among measured (Explorability) and latent variables (Enjoyment and Curiosity)

- We also used the bootstrapping
  To assess the \( t \)-value significance
  (in our case \( t \)-value = 3.57 for \( p \leq 0.01 \)).
## Method

### Survey Questions Used Covering Hedonic Factors

<table>
<thead>
<tr>
<th>Concept</th>
<th>Items</th>
<th>Basis</th>
</tr>
</thead>
</table>
| Curiosity  | • Using tags stimulates my curiosity  
             • Following people's tags is interesting                                                                                       | Moon & Kim (2001)          |
| Exploration| • Using tags leads to my exploration  
             • Clicking on tags enables me to find related items and topics  
             • Clicking on tags helps me get various topics in a much different way than traditional search tools | Moon & Kim (2001)          |
| Enjoyment  | • I find using tags to be enjoyable  
             • The actual process of using tags is pleasant  
             • The process of using tags is interesting                                               | Davis et al. (1992)        |
Respondents’ Profiles (\(N = 38\))

<table>
<thead>
<tr>
<th>Category</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Genders</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>11 (28.9%)</td>
</tr>
<tr>
<td>Male</td>
<td>24 (63.2%)</td>
</tr>
<tr>
<td>Prefer not to answer</td>
<td>3 (7.9%)</td>
</tr>
<tr>
<td>Age Ranges</td>
<td></td>
</tr>
<tr>
<td>21–25</td>
<td>4 (10.5%)</td>
</tr>
<tr>
<td>26–30</td>
<td>10 (26.3%)</td>
</tr>
<tr>
<td>31–35</td>
<td>8 (21.1%)</td>
</tr>
<tr>
<td>36–40</td>
<td>6 (15.8%)</td>
</tr>
<tr>
<td>41–45</td>
<td>3 (7.9%)</td>
</tr>
<tr>
<td>46–55</td>
<td>4 (10.5%)</td>
</tr>
<tr>
<td>56–65</td>
<td>3 (7.9%)</td>
</tr>
<tr>
<td>Disciplines</td>
<td></td>
</tr>
<tr>
<td>Engineering</td>
<td>3 (7.9%)</td>
</tr>
<tr>
<td>Humanities / Social Science</td>
<td>14 (36.8%)</td>
</tr>
<tr>
<td>Management</td>
<td>11 (28.9%)</td>
</tr>
<tr>
<td>Science</td>
<td>10 (26.3%)</td>
</tr>
</tbody>
</table>
Systems Reported

- YahooBuzz: 6
- WorldCat: 8
- Twitter: 13
- LibraryThing: 31
- Flickr: 21
- Digg: 7
- Delicious: 12
- CiteULike: 7

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Boston, MA
### Pearson Correlations

<table>
<thead>
<tr>
<th></th>
<th>Explorability</th>
<th>Perceived Enjoyment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Curiosity</td>
<td>0.75**</td>
<td>0.76**</td>
</tr>
<tr>
<td>Perceived Enjoyment</td>
<td>0.74**</td>
<td></td>
</tr>
</tbody>
</table>

**highly significant ($p<0.001$)
Structural Model

Perceived Enjoyment → Exploratory Behaviour

0.417, t = 5.807

Curiosity → Exploratory Behaviour

0.428, t = 6.148

p < 0.01
Results

Strong positive association between exploratory behaviour and experiences of enjoyment and curiosity when using social tagging

Implications

• Hedonic aspect could be used to motivate workers
• Use of collaborative tagging intelligence
• Greater efficiency and effectiveness
Caveats

- Pilot test only \( (N=38) \)
- Only some tagging systems reported
  - No info on proprietary or purpose-built systems
  - Not all from one organisation
- The current constructs were based on few questions
Future Directions

• Test the composite (2-dimensional) hedonic factor on attitude and the intention to use social tagging tools

• Associate the hedonic dimensions with other factors such as ease of use, usefulness and measure its influence on the actual use of social tagging tools

• Further analysis is in a forthcoming article
Questions?