Eye-Tracking Analysis of Gender-Specific Online Information Research and Buying Behavior

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Germany

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Agenda

1. Research Design
2. Results of the Hypotheses Testing
3. Conclusion and Limitations
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Women have more fun while shopping
Do you have fun to shop or stroll?

59%

29%

answers with yes

Source: http://www.faz.net/aktuell/stil/leib-seele/umfrage-zum-shopping-wie-die-deutschen-einkaufen-14434997.html#aufmacherBildJumpTarget
I. Review of literature

1. Information & Buying Decision Process
   - **Women**:
     - deal more intensively with information / content
     - are more strongly influenced by reviews of others
     - are stronger influenced by the buying environment than men
   - **Men**: have a more holistic, selective information intake

2. Online Shop Design
   - **Women** prefer warm colors and harmonious color schemes.
   - **Men** gravitated toward cool colors and neglected any harmony in the coloring.

II. Research Question

Do women and men exhibit different information research and buying behavior in online shopping environments depending on the gender-specific design of the online shop?
Differences can be seen in men and women’s information research and buying process in online shops depending on the gender-specific design of the shop.

Differences can be seen in men and women’s ....

(H1) **Dwell time** on online shops
(H2) Use and regard of individual features of a product page:
- (H2a) the features of the product page as a whole
- (H2b) product images
- (H2c) product reviews
- (H2d) product recommendations
- (H2e) product descriptions
RESEARCH DESIGN

<table>
<thead>
<tr>
<th>Online-Shop</th>
<th>Gender</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Women</td>
</tr>
<tr>
<td><strong>Zalando</strong></td>
<td>20</td>
</tr>
<tr>
<td>Female design</td>
<td></td>
</tr>
<tr>
<td><strong>Amazon</strong></td>
<td>20</td>
</tr>
<tr>
<td>Male design</td>
<td></td>
</tr>
</tbody>
</table>

- Between subject design
- N=80 (40 m/ 40 w)
- Open observation in laboratory (Eye-Tracking)
- Random selection
- Students of the University of Niederrhein
EYE-TRACKING EXPERIMENT

- **Task:** Select one or more items and put in shopping cart
- **Item:** Running shoes
PRODUCT PAGE: AOI

zalando.de

amazon.de
## METRICS

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Features of online shop/Product page</th>
<th>Metric</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
<td>Whole online shop</td>
<td>Dwell time/amount of time spent shopping</td>
<td>seconds</td>
</tr>
<tr>
<td>H2a</td>
<td>Features of the product page as a whole</td>
<td>Total number of features viewed on product page</td>
<td>count</td>
</tr>
<tr>
<td>H2b</td>
<td>Product images</td>
<td>1. Total number of images viewed</td>
<td>count</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Average fixation time</td>
<td>milliseconds</td>
</tr>
<tr>
<td>H2c</td>
<td>Product reviews</td>
<td>Average fixation time</td>
<td>milliseconds</td>
</tr>
<tr>
<td>H2d</td>
<td>Product recommendations</td>
<td>Average fixation time</td>
<td>milliseconds</td>
</tr>
<tr>
<td>H2e</td>
<td>Product descriptions</td>
<td>Average fixation time</td>
<td>milliseconds</td>
</tr>
</tbody>
</table>
Agenda

1. Research Design
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H1:

Differences can be seen in men and women’s *dwell time* on onlineshops depending on the gender-specific design of the shop.
OVERVIEW OF GENDER SPECIFIC BEHAVIOR

Women enter websites in a greater depth.
H1: WOMEN DWELL LONGER IN THE ONLINE SHOPS

- **Amazon**: Men: 105.4 sec, Women: 114.9 sec
- **Zalando**: Men: 116.05 sec, Women: 199 sec

n = 80, ** significant at p < .05 level (Mann-Whitney-U-Test)
H2:

*Differences can be seen in men and women’s use and regard of individual features of a product page depending on the gender-specific design of the online shop.*
H2a: TOTAL NUMBER OF ELEMENTS OF THE PRODUCT DETAIL PAGES

n = 80, ** significant at p < .05 level, * significant at p < .10 level (Mann-Whitney-U-Test)
H2b: TOTAL NUMBER OF VIEWED PRODUCT PICTURES

\[ n = 80, * \text{significant at } p < .10 \text{ level (Mann-Whitney-U-Test) } \]
H2c: AVERAGE FIXATION TIME OF PRODUCT REVIEWS

\[
\begin{align*}
\text{Amazon} & : 64.53 \\
\text{Zalando*} & : 77.19 \\
\end{align*}
\]

\[n = 80, \ * \text{significant at } p < .10 \text{ level (Mann-Whitney-U-Test)}\]
H2d: AVERAGE FIXATION TIME OF RECOMMENDATIONS

n = 80, ** significant at p < .05 level (Mann-Whitney-U-Test)
H2e: AVERAGE FIXATION TIME OF PRODUCT DESCRIPTIONS

n = 80, * significant at p < .10 level (Mann-Whitney-U-Test)
H2: SUMMARY OF HYPOTHESES TESTING

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Features of product page &amp; unit</th>
<th>Average</th>
<th>Results significance tests</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Men</td>
<td>Women</td>
</tr>
<tr>
<td><strong>H2a</strong></td>
<td>Product page as a whole (count)</td>
<td>A: 2.10</td>
<td>A: 1.85</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Z: 2.00</td>
<td>Z: 2.85</td>
</tr>
<tr>
<td><strong>H2b</strong></td>
<td>Product images (count)</td>
<td>A: 4.85</td>
<td>A: 7.45</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Z: 4.90</td>
<td>Z: 12.55</td>
</tr>
<tr>
<td><strong>H2c</strong></td>
<td>Product images (ms)</td>
<td>A: 236.65</td>
<td>253.97</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Z: 253.97</td>
<td>231.32</td>
</tr>
<tr>
<td><strong>H2d</strong></td>
<td>Product reviews (ms)</td>
<td>A: 64.53</td>
<td>29.82</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Z: 15.90</td>
<td>77.19</td>
</tr>
<tr>
<td><strong>H2e</strong></td>
<td>Product recommendations (ms)</td>
<td>A: 79.92</td>
<td>57.34</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Z: 87.97</td>
<td>119.33</td>
</tr>
<tr>
<td><strong>H2e</strong></td>
<td>Product descriptions (ms)</td>
<td>A: 62.96</td>
<td>38.04</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Z: 93.01</td>
<td>99.46</td>
</tr>
</tbody>
</table>

n = 80, A = Amazon.de, Z = Zalando.de, M = Men, W = Women

***significant at p < .01 level, **significant at p < .05 level, *significant at np < .10 level, ns not significant
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CONCLUSION & LIMITATIONS

Conclusion
• Gender-specific designs have a significant impact on women only
• Men tend towards higher average values in the typically feminine shop

Limitations
• Study focused only on two online shops
• Participants were only students
• Tasks only cover pre-purchase phase of the buying process
Thank you for your attention! Questions?
BACK UP
H1 – RESULTS
DIFFERENCES CAN BE SEEN IN MEN AND WOMEN’S ‘DWELL TIME’ ON ONLINE SHOPS DEPENDING ON THE GENDER-SPECIFIC DESIGN OF THE SHOP.

<table>
<thead>
<tr>
<th>Online shop</th>
<th>Average dwell time (sec.)</th>
<th>Results significance tests</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Men</td>
<td>Women</td>
</tr>
<tr>
<td>Amazon</td>
<td>105.40</td>
<td>114.90</td>
</tr>
<tr>
<td>Zalando</td>
<td>116.05</td>
<td>199.25</td>
</tr>
</tbody>
</table>

n = 80, *** significant at p < .01 level, ** significant at p < .05 level, * significant at p < .10 level, A = Amazon.de, Z = Zalando.de
H2 – RESULTS
DIFFERENCES CAN BE SEEN IN HOW MEN AND WOMEN REGARD THE FEATURES OF THE PRODUCT PAGE AS A WHOLE DEPENDING ON THE GENDER-SPECIFIC DESIGN OF THE ONLINE SHOP.
User-Experience Questionnaire (UEQ)

- Attractiveness
- Perspicuity
- Efficiency
- Dependability
- Stimulation
- Novelty
RESULTS – UEQ
THERE ARE SIGNIFICANT DIFFERENCES BETWEEN MEN AND WOMEN DEPENDED ON THE GENDER-SPECIFIC DESIGN OF THE ONLINE SHOPS.

Significant results do only exist for women: On average the female participants evaluate the female online shop (zalando) better than the male online shop (amazon).
## SUMMARY RESULTS

### H1 + H2

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
<td>Differences can be seen in men’s and women’s ‘dwell time’ on online shops depending on the gender-specific design of the shop</td>
</tr>
<tr>
<td></td>
<td>Partially reject</td>
</tr>
<tr>
<td>H2a</td>
<td>Features of the product page as a whole</td>
</tr>
<tr>
<td></td>
<td>Partially reject</td>
</tr>
<tr>
<td>H2b</td>
<td>Product images</td>
</tr>
<tr>
<td></td>
<td>Reject</td>
</tr>
<tr>
<td>H2c</td>
<td>Product reviews</td>
</tr>
<tr>
<td></td>
<td>Partially reject</td>
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</table>