Measuring Emotions

A comparison of the PAD scale, Premo and checklist

Study objective

The emotional feelings evoked by advertisements/products exert a powerful influence on consumer and decision making (Isen at al. 1982; Clark & Isen 1982). For instance, several studies provide evidence for the strong effect of emotions on brand attitudes (e.g., Williams & Aaker 2002). For practitioners and researchers, knowledge about how consumers’ emotions influence their behavior and brand attitudes can be of considerable importance. As a result, it is of major concern that emotions are reliably measured so that one can predict the effect of the evoked emotions on advertisement/product acceptability. In this regard, this study compares three often used self-report measurement techniques: two verbal-based techniques, namely the PAD-scale (Pleasure–Arousal–Dominance scale) (Russell & Mehrabian 1977; Mehrabian 1995), and the Checklist (which consists of a list of emotions from which respondents choose the emotion which expresses their feeling the closest) (Russell & Mehrabian 1977), and a visual-based technique, namely the Product Emotion Measure (PrEmo) (Desmet, Hekkert & Jacobs 2000; Desmet 2003).

Study design

Procedure
As emotion inducing procedure (EIP) we chose movie fragments, since research indicated that movie fragments are very successful in eliciting both negative and positive emotions (Martin 1990; Hesse et al. 1992).
At the beginning of the experiment, each respondent was exposed during 10 minutes to a movie fragment (see snapshots below). The videos varied in terms of valence (positive or negative) and most were selected based on literature in which authors provided evidence for the evoked positive or negative emotions (Hewig et al. 2005). All videos were pretested on their valence by a panel of 56 respondents. The results indicated that video 1 and 2 elicited positive emotions and video 3 and 4 elicited negative emotions. Immediately after the video, participants completed two of the three emotion scales (see examples of the emotion scales below). The two emotion scales were randomly presented to avoid order effects.

*Figure 1: Video 1 consists of fragments of the movies ‘Ice age’ and ‘When Harry met Sally’ (positive valence)*

*Figure 2: Video 2 consists of a fragment of the documentary ‘March of the penguins’ (positive valence)*
Figure 3: Video 3 consists of a fragment of the movie Halloween (negative valence)

Figure 4: Video 4 consists of fragments of the movies La vitta è bella and Schindler's List (negative valence)

Sample

The sample comprised 397 Belgian respondents. Age ranged from 18 to 24 years with a median of 22. 53% of the respondents were female. For their cooperation, respondents received 3 Euro.

Results

To find out whether the emotion scales differ in the extent to which they are able to detect positive (videos 1 & 2) or negative (videos 3 & 4) emotions, we ran a series of crosstabs (McNemar test). In order to compare the different scales, we created 3 nominal variables where 1 signifies pleasure and 0 means displeasure. For the PAD-scale, where the items are measured on a 7-point semantic differential, a respondent is classified as experiencing pleasure when the average score of all items is above 4 (=neutral) and displeasure is when the average score of all items is below 4 (=neutral). For the checklist, a respondent is classified as indicating pleasure (displeasure) when he/she selected a positive (negative) emotion from the list. For the PrEmo-scale, a respondent indicates pleasure when the six positive
emotions (joy, satisfaction, fascination, pride, desire, hope) have a higher mean than the six negative emotions (disgust, dissatisfaction, fear, sadness, shame).

<table>
<thead>
<tr>
<th>Emotion scales</th>
<th>Positive valence – pleasure (Video 1 &amp; video 2)</th>
<th>Negative valence-Displeasure (Video 3 &amp; video 4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PrEmo vs. PAD</td>
<td>$P = 1.000$ (N=83) PrEmo=88%, PAD=93%</td>
<td>$P = 0.038$ (N=85) PrEmo=67%, PAD=71%</td>
</tr>
<tr>
<td>PrEmo vs. Check</td>
<td>$P = 0.210$ (N=75) PrEmo=88%, Check=78%</td>
<td>$P = 0.014$ (N=70) PrEmo=77%, Check=67%</td>
</tr>
<tr>
<td>PAD vs. Check</td>
<td>$P = 1.000$ (N=58) PAD=95%, Check=97%</td>
<td>$P = 0.098$ (N=80) PAD=57%, Check=53%</td>
</tr>
</tbody>
</table>

Table 1: p-values crosstabs and percentages

As can be seen in Table 1, differences in valence (positive or negative) are only found for negative emotions (see p values below 0.05). 87% (77%) of the respondents indicate on the PrEmo scale that video 3 & 4 evoke negative emotions compared to 71% (57%) on the PAD (Check) scale. So, when negative emotions are evoked, respondents more often select the negative emotions on the PrEmo scale compared to the Check- and Pad scale.

**References**


**PrEmo appraisal**

Picture based scales like PrEmo have the advantage of cross-cultural applicability (Mehrabian & Russell 1974; Hupp et al. 2010). In addition, they can give a fresh impetus to the interview and increase interest, motivation and response rates. Although we do not know for sure which emotions were evoked by the fragments and how intense these emotions were felt, it seems that PrEmo better captures negative emotions than other scales.

**Personal and Background information** (between 50 and 100 words)

**Affiliations**
Dr. Elke Cabooter
Ghent University
Faculty of Economics and Business Administration

**Additional information**
http://www.feb.ugent.be/mareco/