Emotions and E-Participation of Young People: A Preliminary Study

Peter Parycek  
Danube University Krems  
peter.parycek@donau-uni.ac.at

Ralph Schöllhammer  
Danube University Krems  
ralph.schoellhammer@donau-uni.ac.at

Judith Schossböck  
Danube University Krems  
judith.schoossboeck@donau-uni.ac.at

Abstract

The following paper presents a quantitative content analysis of blog posts of selected discussions on a EU-wide e-participation platform with the goal of showing that emotional writing is an indicator for the frequency of participation in online deliberations. The platform analyzed for this research has been designed to bring young people in contact with stakeholders and politicians in order to discuss politically relevant topics for young people in Europe.

We argue that political participation is motivated by emotions that should be reflected in the blog posts of users. We theorize that more emotional users will also be more active on the platform. Although there have been significant data limitations, our paper indicates that emotions have a positive effect on political e-participation.

1. Introduction

Citizenship builds upon our right to participation, and ideally participation should be equal, inclusive and made as easy as possible. The increased usage of the internet could be the basis for e-participation projects that would encourage political participation in general and work as a safeguard against spreading political frustration. In most cases they are aimed at improving citizens’ roles within the democratic system through the use of ICT. E-participation experts have emphasized that further investigation should be done in two areas: first, the „applicability of e-participation tools to particular contexts“, and second „assessing the social acceptance of e-participation“, in other words the evaluation of e-participation tools with view to contextual factors like target groups or cultural contexts [23].

The project platform we analyzed for this paper funded by the European Commission, and aimed at providing young people a space for political discussion and bridging the gap between decision makers and citizens. By decision makers we refer to European politicians that were active on the platform and engaged with young people. Since the project was mostly addressing European politicians to get involved with discussing European topics with young people on the platform. The project started in July 2010 and ended in December 2013. In this paper we describe briefly the platform’s functionality and its main features as well as the main evaluation results with view to the tone of discourse and the sentiments in comments on the platform. Past studies have tended to neglect the role of sentiments and expressives [16], and there is only a limited number of studies that applies these approaches in the e-participation context.

What seems to be a common trait, however, is that strong emotions often have a positive effect on participation. Anger, for example, can turn into greater voter turnouts at elections [32]. The desire to stay informed about politics is correlated with feelings of anxiety and unease [18], while positive emotions like optimism change and intensify the perception of our political surroundings. To gain a better understanding about the relation of emotions and political participation, including sentiment-measurements in political research seems fruitful. In this paper, we attempt to take a closer look at the tone of discussions and the sentiments of online discussions, specifically the comments made by young people in a large-scale pilot project on European e-participation.

2. Emotions in politics

One of the most worrisome trends in modern democracies is the decreasing participation of young people in elections and political processes [12,22]. Although there is an ongoing debate about whether political participation in general is declining, it is definitely true for the younger population in Western democracies [12:265,26]. The inactivity of young people in the traditional venues of politics is
problematic, because it increases the risk that dissatisfaction and frustration with the political system will be channeled into potentially violent directions. In this paper we argue that one reason for the decline in political participation is the neglect of emotional factors as an important element in the willingness of individuals to engage in politics. There is a growing body of literature that highlights the importance of emotions in analyzing mass political behavior [18,27], indicating that appeals to reason and rationality will not be sufficient to re-ignite individual engagement with politics.

Recent findings from social and evolutionary psychology [24,25,33] and identity economics [2] have considerably expanded our notion and understanding of human behavior. George Akerlof and Rachel Kranton point out that voters do not only have “economic interests but also an identity and norms and ideals, and incorporating these into the model would lead to quite different predictions […] Candidates who appeal to voters’ ideals and norms may be elected even if their economic interests are contrary to voters’ economic interests” [2:24].

Emotions are outside the realm of pure rational choice approaches defined in terms of economic and material benefits. Political communication that limits itself to these “rational” aspects of voters and citizens will most likely only marginally improve the general participation in a democratic political system. While there are particular instances where voters behave in ways predicted by rational-choice approaches, especially if the potential material gains or losses are “substantial, imminent, and well publicized” [21:802] these cases seem to be the exception much more than the rule. The relationship between rationality and emotions, however, should not be viewed as entirely opposed. Emotions should be seen as a complementary element to the human ability for reason and not its competitor [27].

The necessity to pay new attention to emotions in politics is especially pressing in liberal democracies, where participation in politics happens on a voluntary basis. Participation is a central element of functioning democracies, and it is important for social scientists to look for cues what causes participation to diminish and how to regenerate the participatory, democratic citizen.

In this paper we argue that the “emotional deficit” [30] in contemporary politics is an important issue regarding citizen participation. Recent elections in Europe and the United States have shown that emotional appeals by candidates had a strong effect on the electorate. This phenomenon was not limited to the right or the left side of the political spectrum, but was used by politicians from a variety of ideological backgrounds [18].

That emotions play a significant role in mass behavior has been the subject of several studies [13], revealing that different emotional stages can lead to differences in political behavior.

Politicians attempting to gain votes with emotional appeals are not merely populist, but are actually using the full toolset of political communication – emotionality is a constant human trait that cannot be overcome by limiting the communication between politicians and citizens to reason and rationality [17].

One of the most surprising findings was that it is not the disengaged citizens that react most strongly to emotional appeals, but that it is actually the engaged citizens who are influenced by emotional cues [18]. In general, however, there seems to be a positive correlation between states of emotional elevation and political participation [7,32]. Certain research even suggests that the desire for emotional experience itself is a potential motivator for political participation. According to this argument, the actual politics are only secondary, as long as the act of participating would satisfy the individual emotional need for identity and belonging to a community [14]. In times where an increasing number of young people feel drawn towards radical political or religious movements, further research in this area is of high importance. To gain a better understanding when it comes to the connection between emotions and political participation it will be necessary to include sentiment-measurements in political research. At this point, research into emotions is still limited to specific and often narrow projects, but we believe that the question about emotions should become a fixture in political participation research. The growing evidence that emotions can change the outcome of elections makes it an indispensable element in the analysis of political behavior and the possible prediction of political outcomes. There already is a growing body of literature that tries to distill emotional contents from social media [9] or use postings on social media platforms to predict trends in opinions [3]. In this paper we focus on the connection on participation and emotions, and whether the frequency of online participation is connected to the emotional content of blog posts.

3. Project Description and Data Source

In this paper we take a close look at two things: Online deliberation in the form of blogging and the
frequency of emotional words used in blog posts. The sample for our quantitative analysis comes from an online platform, which was specifically designed as a multi-national project to bring European politics closer to young people. We are analyzing expressions from different countries but the study is not a multilanguage study in the sense that different languages have been analyzed, as the main focus was on English (both written by native speakers and users from other countries than Great Britain like Greece, Austria and the Czech Republic). We limited our data analysis to English posts and did not produce any translations of our own.

The platform was conceptualized as a cross-national and multilingual project, established by nine partners coming from seven member states of the European Union. It was designed as a complex online tool to facilitate and encourage political discussions between young citizens and professional politicians, but also among the young users themselves.

The platform was put to the test with the establishment of pilots in four European countries: Austria, the Czech Republic, Greece and the United Kingdom. Pilots were fully established local branches of the platform that allowed for debates within and between members of the different branches. A central element of the project was to actively engage young people to participate and join the online discussions. All pilots followed a mix of engagement strategies (both on- and offline) like social media engagement, offline workshops, raffles and media advertisements to increase participation. All pilots operated in a very similar fashion, so differences between countries are minimal. By the end of March 2014, around 4,870 users have been registered on the platform via Facebook connect or signed up using their email addresses. Facebook connect was a very popular means of engagement, and 36% of users registered via this option. Nonetheless, registrations via email or Facebook connect also opened up barriers to participation and might exclude potential user groups. Since registration was demanding in time and required information, there is a significant probability that the user sample is biased towards people who already had a strong interest in politics and were willing to make an effort in order to participate.

All nationally based pilots contributed to discussions on the European and national level. National discussions were mostly conducted in the respective domestic language, creating a problem for our data selection. We assumed that comparability of emotions in language will be highest if the users we analyzed used the same language. Most of the discussion posts we used were from debates on the European level which ensured that we had participants from multiple countries despite being limited to English language posts.

Compared to the actual visitors of the platform, there was only a small amount of users actively posting on the e-participation platform and opening discussion topics: the majority of users in e-participation can still be seen as “lurkers,” users that make up a “silent majority” in electronic forums: they post occasionally or not at all, but read the postings [11,28]. The term describes someone who does not actively participate, observes what is going on, and remains silent but is not a non-user.

Most visitors used participation options with a low participation threshold, e.g. likes or thumbing, which can be seen as part of a motivation or gamification aspect on the platform [4], but also an integral part of social media that users are meanwhile familiar with. Thumbing on the platform was a feature that could mean both positive or negative thumbs, and is similar to thumbing on well-known social networking sites like Facebook, but does not refer to an integrated Facebook thumbing button – it does measure interest on the platform though, and a majority of participants used the positive form of thumbing, whereas the negative form was used rarely. The site has counted 52,000+ visitors, 29,000+ unique visitors, 338,000+ page visits and 18+ active decision-makers. The average user looked at 6+ pages and stayed for 6+ minutes. Around 74 % in total found it easy to navigate. Comparing engagement in the pilot countries, the following table shows platform statistics on January 27, 2014.

<table>
<thead>
<tr>
<th>Country</th>
<th>Users</th>
<th>Threads</th>
<th>Posts</th>
<th>Thumbs</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU</td>
<td>27.01.14</td>
<td>-</td>
<td>168</td>
<td>543</td>
</tr>
<tr>
<td>AT</td>
<td>840</td>
<td>44</td>
<td>210</td>
<td>471</td>
</tr>
<tr>
<td>CZ</td>
<td>551</td>
<td>157</td>
<td>1,504</td>
<td>2,444</td>
</tr>
<tr>
<td>GR</td>
<td>1,595</td>
<td>163</td>
<td>2,227</td>
<td>2,269</td>
</tr>
<tr>
<td>UK</td>
<td>928</td>
<td>56</td>
<td>298</td>
<td>271</td>
</tr>
<tr>
<td>Total</td>
<td>3,914</td>
<td>420</td>
<td>4,239</td>
<td>5,455</td>
</tr>
</tbody>
</table>

As expected, categories thumbs and posts exceeded the number of registered users, indicating that most registered users showed some form of activity on the platform.

While there have been a lot of topic openings, not all topics have been discussed according to the deliberation process of the platform and only 45 topics reached the “results” phase of the platform. The process followed a 4 phase deliberation model, with users proposing topics in the first phase,
discussion in the second phase and voting and summary in phases 3 and 4. For our purpose, we specifically focused on topics that have been acknowledged by moderators as high-interest topics and were sent into the discussion phase. For our text corpus, we thus focused on the comments in phase 2, the actual discussion phase.

User activity on the platform was measured by a number of tools: Users could receive points for all platform activities (e.g. for opening a topic, commenting or thumbing), and after receiving a certain amount of activity points reached the next level, the highest level to reach named “activist” (level 5) (besides “newbie”, “pioneer” “regular” and “resident” on level 1-4. For our purpose, we relied on the number of postings and comments for measuring user activity, as those levels were based on an internal algorithm of the platform. Additionally, although activity points could be received for a number of activities, postings were the most reliable indicator for user participation on the platform. This seems a valid course of action since posting on the site is highly correlated to the collection of activity points (Figure 1).

Figure 1: Correlation between activity points and user postings

The platform attracted a diverse (with regards to demographic data like gender or age), politically interested group of young users, however most discussions took place in the national branches of the platform. It was with regards to European topics that debates between members from numerous states and in the English language took place. Several barriers that prevented users from discussion on the European level were language barriers and higher interest in national rather than European topics, but we are confident that we collected a large enough sample for a preliminary study.

3.1 Platform Evaluation and Data Selection

A project-specific evaluation methodology based on existing evaluation methods has been designed for the platform. In the following we describe relevant results of this platform evaluation that formed the basis for our semantic analysis and give an impression about the qualitative nature of discourses on the platform.

The evaluation model built on existing research, like the methodological framework developed by Macintosh et al [1,23] It focused on a mix of qualitative and quantitative data, applying the following tools: user online questionnaires, user and decision maker interviews, platform data and an evaluation focus group. Qualitative user interviews and a discourse analysis of selected topics were done at the later stages of the project in October 2013.

Evaluating e-participation projects and online deliberation can help to access whether online comments in the e-participation context follow a certain trend or whether there are different user types or country-specific differences in those expressions. In our case, we looked at trends in user behavior as well as the emotional character of discussion posts and how this was related to participation.

In the discourse analysis aspects of online deliberation from a qualitative perspective, discussions have been analyzed according to the following criteria. All country pilots analyzed exemplary discussions on the platform according to criteria for high interest online deliberation. These criteria were: Quality of writing, quality of discourse, effectiveness of the deliberation model, diversity of users, inclusive atmosphere and power structures, cross-country deliberation and participation of politicians. For this analysis, all pilots chose two high-interest topics (defined by a significant number of user comments and thus discussions that received significant interest from users. This was based on the impression of pilot operators and moderators) For a discussion to be relevant, comments in the discussion phase (phase 2) had to be at least one platform page long). Similarly, data selection for the quantitative content analysis of this paper has also been based on selected high-interest discussions to which users have responded with at least 5 comments.

The qualitative evaluation was a necessary tool before analyzing the data quantitatively; for we wanted to be sure that the discussions on the platform

---

2 For downloads of the Deliberables and Publications contact the authors.
were actually suitable for automated content analysis. We had to ensure that complete sentences were used, clean the data from slang-expressions and a youth jargon that possibly could not be processed by the software.

The main results of the discourse analysis showed that discussions on the platform followed a friendly tone and displayed some cross-country debates. However, language can still be seen as a major obstacle in this process. While some cross-cultural discussions with users from different countries were taking place, most of them were still in English and consequently, more users from Great Britain were encouraged to take part in those discussions.

The platform displayed different levels of activity in the four pilot countries: Regarding the thumbs per pilot, it became visible that this activity was used in Austria more often than in the UK, related to the number of registered users. Participants in the Czech Republic used this feature the most and more often than postings – this makes the Czech user a very active user compared to the average user in other countries. Of course, thumbs are no indicators of a good quality discussion but they indicate interest of the participants.

Controversial topics proved to be of the highest interest like topics that concerned the rights of a minority (e.g. rights of homosexuals), education (e.g. votes at 16) and environment (e.g. climate change) which could be identified as topics with high potential for discussion. We have also used some of these topics for data selection of our linguistic analysis, e.g. particular the “votes at 16” topic which has created a lot of interest in the European discussions section on the platform.

As for the most popular topic categories, apart from the category “other”, “education”, “human rights” and “politics” showed the most postings on the whole platform, whereas the most topic openings are found in the categories education, politics and health.

Table 2 gives an overview of the most popular topic categories on the e-participation platform based on all pilot countries. As already pointed out, these numbers do not represent the actual discussions, as not all threads have been forwarded into the second discussion stage of the deliberation process. The 94 blog posts we selected for our quantitative analysis have been drawn from these topic areas

<table>
<thead>
<tr>
<th>Date</th>
<th>Threads</th>
<th>Posts</th>
</tr>
</thead>
<tbody>
<tr>
<td>31.3.2014</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crime</td>
<td>6</td>
<td>217</td>
</tr>
<tr>
<td>Drugs and Alcohol</td>
<td>8</td>
<td>87</td>
</tr>
<tr>
<td>Economy</td>
<td>40</td>
<td>370</td>
</tr>
<tr>
<td>Education</td>
<td>71</td>
<td>777</td>
</tr>
<tr>
<td>Employment</td>
<td>37</td>
<td>179</td>
</tr>
<tr>
<td>Environment</td>
<td>25</td>
<td>123</td>
</tr>
<tr>
<td>Health</td>
<td>11</td>
<td>61</td>
</tr>
<tr>
<td>Human Rights</td>
<td>41</td>
<td>566</td>
</tr>
<tr>
<td>Innovation</td>
<td>11</td>
<td>115</td>
</tr>
<tr>
<td>Politics</td>
<td>118</td>
<td>1.199</td>
</tr>
<tr>
<td>Other</td>
<td>95</td>
<td>140</td>
</tr>
<tr>
<td>Sum</td>
<td>463</td>
<td>3.834</td>
</tr>
</tbody>
</table>

Overall, the platform succeeded in engaging a politically interested young user group (Table 3) within the target group and managed to arouse interest in the project during periods correlated with promotion activities. User figures showed that the platform became very active during the discussion phase, however sustainable engagement required considerable engagement activities. The tone of discussions was friendly, which might also be related to users knowing about the official character of the platform and the fact that moderators were present.

However, not much moderation in terms of content was necessary. The evaluation methodology of the project built on a variety of methods based on platform statistics and quantitative data as well as qualitative data and user feedback during offline events, from which the results of qualitative data were the basis for our sentiment analysis. The majority of young users (70%) found that the platform was suitable and useful for discussions among young people, and were generally positive towards e-participation as a tool for that purpose. They liked the concept and features on the platform, even though functionality was not self-explaining.

In terms of engagement countries showed significant differences which should be investigated further in order to find out more about participation factors and young people’s motivation to participate.
4. Research Design and Methodology

The approach we provide in this paper is twofold: First, a qualitative evaluation of blog-posts to ensure the fit for quantitative analysis, followed by a linguistic-quantitative exploration of the selected data.

Regarding the general tone and participants of discussions, the entire political spectrum was represented and discussions always followed a friendly tone, making intense moderation unnecessary apart from organizational things related to functionality of the platform and reminders for professional politicians to continue to participate. Still, comments displayed a variety of emotions between young people on the platform. In the following we take a closer look at what can be said about emotions in relation to user activity.

Due to language restrictions, at this point we were only able to analyze debates in the English language. A consequence of this was that many of the topics with non-British participants were discussed from a European rather than a national perspective, for debates on the country specific platform branches were usually conducted in the local language. This is not necessarily a weakness of our approach. It seems to be a reasonable assumption that emotions might be even more pronounced in debates that relate to highly contentious national issues than more general European topics. If emotional writing should have a measurable effect on the European level, it stands to reason that the same effect should take place on the national level as well.

We used computer supported linguistic sentiment analysis in order to investigate the emotional content of discussion posts on the platform. The software used for this process was LIWC (Linguistic Inquiry and Word Count) [29] an often used and continuously validated software that reveals the percentage of certain word-types within a given text. The program is based on a modifiable internal dictionary that sorts the words of the text according to psycholinguistic and psychometric categories. LIWC has shown a high accuracy when it comes to identifying emotional states in texts [19].

The LIWC dictionary contains a “Psychological Processes – Affective or Emotional Processes” section that consists of 615 words that measure emotionally relevant words. These words are divided into the following subsections:

- Positive emotions (e.g. happy, pretty, good)
- Positive feelings (e.g. happy, joy, love)
- Optimism and energy (e.g. certainty, pride)
- Negative emotions (e.g. hate, worthless)
- Anxiety or fear (e.g. nervous, afraid, tense)
- Anger (e.g. hate, kill)
- Sadness or depression (e.g. grief, cry, sad)

These sections are defined by words and word stems, with words being counted in multiple categories. The output of LIWC shows the number of these words as a percentage of the total word count, thereby including a control for the length of the analyzed text. LIWC results are not based on the actual count of emotional words, but it produces an emotions-score for a given text based on the percentage of words that are emotional. For that reason, LIWC has a strong track-record in being used to compare the emotional content of texts with different lengths [6,8,10,15,31]. It is important to emphasize that the number of posts or the length alone does not mean that due to their higher volume in words the likelihood of emotional expressions will automatically increase. Posts by moderators or user manuals have high word counts and appear frequently, but they are usually not very emotional pieces.

In our analysis we looked at the emotional character of the discussion posts and whether this would allow us to predict certain behavior patterns of the user. The basis for this were selected comments from the discussions during the open stage of the platform from the beginning of September 2012 to September 2013.

### Table 3: User demographics

<table>
<thead>
<tr>
<th>Age: based on questionnaire (“What is your age?”)</th>
<th>AT</th>
<th>CZ</th>
<th>GR</th>
<th>UK</th>
<th>ALL</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;16</td>
<td>5%</td>
<td>26%</td>
<td>–</td>
<td>3%</td>
<td>9%</td>
</tr>
<tr>
<td>16–20</td>
<td>91%</td>
<td>55%</td>
<td>(2)</td>
<td>55%</td>
<td>55%</td>
</tr>
<tr>
<td>21–26</td>
<td>2%</td>
<td>9%</td>
<td>(24)</td>
<td>23%</td>
<td>12%</td>
</tr>
<tr>
<td>27–40</td>
<td>2%</td>
<td>8%</td>
<td>(50)</td>
<td>57%</td>
<td>17%</td>
</tr>
<tr>
<td>&gt;40</td>
<td>–</td>
<td>2%</td>
<td>(12)</td>
<td>14%</td>
<td>4%</td>
</tr>
<tr>
<td>n</td>
<td>169</td>
<td>99</td>
<td>88</td>
<td>65</td>
<td>421</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age: based on platform data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of relevant answer in registration process (specified age)</td>
</tr>
<tr>
<td>Percentage of users that are below 26 years</td>
</tr>
</tbody>
</table>

Benchmark: > 65% are 16–26
As a first selection criteria and due to language restrictions, we have been focusing on discussions in English without translating other languages. Via the “Have your Say” tab on the platform, where all discussions are visible, we selected random EU debates with a significant interest in the topic, meaning more than one page of comments or at least 5 replies (when in some cases very long comments were made). The topics were selected manually from the platform via the tab “European discussions”. Additionally, we collected random topic initiations, i.e. the initial opening of a discussion, also in English.

Given the possibility to use alternative dictionaries in LIWC (e.g. in Greek, Czech, etc.) we plan to do a larger, cross-lingual study in the future that will include specially tailored and comparable dictionaries for a number of European countries.

When measuring the interest in the topic, we noted thumbing where both positive and negative thumbing was counted, so this number stands for attention more than an evaluation of whether users found a comment good or bad. Independent from how many postings users made we selected 3 maximum comments per user (this was done to ensure that the text corpus represented a diversity of users and was not biased towards a few heavy-users – to ensure a clean sample appropriate for the use of LIWC we limited it to 3 comments per user). We monitored their general activity on the basis of how many comments they made on the platform but also the activity points (this was part of a gamification approach on the platform assigning different activity levels to users) they received in total.

Based on our initial theory that emotions cause political participation, we formulated two empirically testable hypotheses:

**H1:** There is a positive relationship between posting on the platform and emotional writing. More emotional writing will result in more active (i.e. more postings in discussions) participation

**H2:** Thumbimg could be another valuable indicator of active participation. Emotional writing should lead to more (positive or negative) thumbing and therefore more active participation

5. Quantitative Content Analysis and Results

It is important to highlight that our quantitative analysis was based on a very small sample due to the preceding qualitative investigation of the blog posts, but we believe that the results of even a small sample size highlight the necessity to collect the text of blogs and other opinion sources in order to further investigate the role of emotions in political and e-participation.

Following the standard literature we were interested whether the effect of emotions on political participation can be measured quantitatively via a comparison of user activity on the Project Platform and the emotional content of their blog posts. Our basic assumption was that the number of posts per user is an acceptable approximation for participation, for it reflects the willingness of an individual user not only to lurk on the platform or “like” posts by others but to actually engage in the discussion on the platform.

For the purpose of this paper we used a simple linear regression analysis to investigate the relationship between emotions and participation. Since LIWC counts some words double for its categories, we first had to identify the variables suitable for our regression analysis. The main indicators used by LIWC fall into the categories Affective or Emotional Processes. The main variable here is affective words (affect), which is the addition of two sub-categories: Negative (negemo) and Positive (posemo) Emotions. This means that a sample score of 2.5 for Affect could consist of 1.3 and 1.2 for positive and negative emotions, respectively. Additional subcategories are Anxiety (anx), Anger (anger), and Sadness (sad). Because some words are used for several categories, there was the risk of multicollinearity between our variables. In order to test for this possibility we produced a correlation matrix (Table 4) to determine the correlation values between our variables.

<table>
<thead>
<tr>
<th></th>
<th>affect</th>
<th>posemo</th>
<th>negemo</th>
<th>anx</th>
<th>anger</th>
<th>sad</th>
</tr>
</thead>
<tbody>
<tr>
<td>affect</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>posemo</td>
<td>0.69</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>negemo</td>
<td>0.71</td>
<td>-0.01</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>anx</td>
<td>0.04</td>
<td>-0.08</td>
<td>0.14</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>anger</td>
<td>0.58</td>
<td>0.24</td>
<td>0.57</td>
<td>-0.04</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>sad</td>
<td>0.39</td>
<td>-0.13</td>
<td>0.67</td>
<td>-0.05</td>
<td>-0.05</td>
<td>1</td>
</tr>
</tbody>
</table>

As expected, there were high values between the general category of affect and most of the subcategories with the exception of anger. Anger and
sadness had a high correlation with negative emotions, which was also to be expected. The characteristics of the emotions-data caused us to drop the affection category and use Positive Emotions and Negative Emotions as two separate variables. We used a linear regression to investigate the relationship between the use of emotions in blogposts and the frequency of posting (Table 5).

Table 5 shows the results of the regression. Both positive and negative emotions are positively associated with blog-posting, indication that in general emotions positively influence participation. This finding corroborates previous studies that come to similar results. More concrete emotions like anxiety and anger did not reveal significant results, with the exception of sadness.

Despite the sample size and the R Square of 23%, we believe that this quantitative analysis can present a first step towards including sentiment analysis more regularly in e-participation projects like the one we analysed.

In a second step we looked at the relationship between thumbing and emotions, assuming that more emotional writing would also positively influence the number of thumbings received (Table 6). As this regression shows, our second hypothesis is not defended by the data set we had at our disposal. It seems as if thumbing, while clearly a form of participation, is not influenced by the emotional content of blog posts. This result seems to indicate that users who write more emotionally are not more likely to receive thumbs up on their posts by other users. We believe this to be a quite surprising result that warrants further research into the different modes of participation in online platforms.

Although several of our findings did not reveal statistically significant results, we can nonetheless detect trends within our dataset that supports theories about emotions and political participation. There is growing evidence, for example, that negative emotions can increase participation to a point, but that once it is reduced to shrill attacks between opposing parties participation starts to decline [20]. If we look at the coefficients in our two models, the negative signs for the emotions of anxiety, anger, and sadness makes us cautiously optimistic that once we obtain a larger dataset we could reveal more significant relationships.

Despite the limitations of this preliminary study, it is important to realize that different emotions will have different effects on participation. Berger and Milkman [5] point out that sadness-evoking content does not have a very viral quality and can cause diminished motivation to spread information or participate in its dissemination. The fact that we see a significant negative relationship between user postings and words expressing sad emotions seems encouraging to us, for it indicates that there is a growing body of research that uses alternative methods and data sets to distinguish the effects of different emotions, but produces increasingly consistent results. We believe that this shows how our understanding of the role of emotions in the political process is improving.

### 6. Summary and Outlook

The aim of this study was to indicate the importance of emotions in online deliberation platforms and whether the emotional content of blogposts allows us to draw conclusions about user behaviour, for instance about the frequency of users to post on the platform. While previous literature has already established the important role in political participation, studies dealing with this question in the...
field of e-participation are still hard to find. The very set-up of platforms like the one which was used in this study makes it difficult to collect blog posts in an organized fashion as text documents.

Although it was considered to use an openly available web scraper to collect the blog posts, due to the importance of correcting typing errors so that LIWC could efficiently detect emotional words, the software also made it necessary to save every blog post in an individual text file. For a much more ambitious follow up project we will collaborate with software developers in order to automate this process.

The participation of non-native English speakers in debates about cross-national topics was quite limited compared to the participation of native English speakers. Future projects will include analytical tools in multiple languages in order to compare differences in emotional writing between different countries. Although we do believe that even being limited to blog posts in English does not diminish the strong indications that emotions matter in e-participation.

The increasing amount of online data in the realm of political opinions and citizen participation provides researchers with a growing pool of information that is highly relevant to the political behaviour on- and offline.

A lot of academic energy has been spent on the question of how people participate, but we believe that an equally interesting question is why people participate in politics and political deliberation in the first place. Political participation in general and voting specifically should not only be seen as the pursuit of individual interests, but also as a ritual with strong emotional significance for the individual. The role of emotions is not only of scientific relevance, but a better understanding will also broaden our approaches to contemporary political phenomena like political polarization or the rise of populist parties in different parts of the world.

In this study we looked at whether emotions can generate political participation, but future research should focus also on the question of which topics are most effective in eliciting emotional reactions. This knowledge could be crucial for increasing citizen participation and informing policy makers about the political priorities of their citizens.

7. References


