

**FIS**

UNIVERSITY OF ECONOMICS, PRAGUE  
CZECH REPUBLIC  
FACULTY OF INFORMATICS AND STATISTICS

fis.vse.cz/en

# Estimating Emotions from Emojis and Their Use in Computer-Mediated Communication

**Zdenek Smutny**

**Natalia Hancsics**

**Zdenek Sulc**

# The aim of the paper

- Compare the ability to estimate emotions in a sentence and assign the correct emoji to an emotionally colored sentence in representatives of generations Y and Z in the Czech and Slovak Republics.
- Analyze the meaning of selected emojis in text messages in remote communication and their interpretation by representatives of Generation Z and Y.

# Materials and methods

An online questionnaire was published in a period from 11 November 2018 to 26 December to answer 3 research questions (RO). In total 863 respondents.

Age limitations:

- **Generation Y** (born 1988–1995) - 456 respondents
- **Generation Z** (born 1996–2003) - 407 respondents

TABLE I. COMPOSITION OF RESPONDENTS.

Demographics		Count	Column valid N %	
Sex	<i>Man</i>	227	26.3	
	<i>Woman</i>	636	73.7	
Age	<i>Generation Z</i>	15–18 years	65	7.5
		19–22 years	342	39.6
	<i>Generation Y</i>	23–26 years	314	36.4
		27–30 years	142	16.5

# 4 basic human emotions

Anger, joy, fear and surprise were chosen because of their easy recognition by a human in everyday life:

 – anger

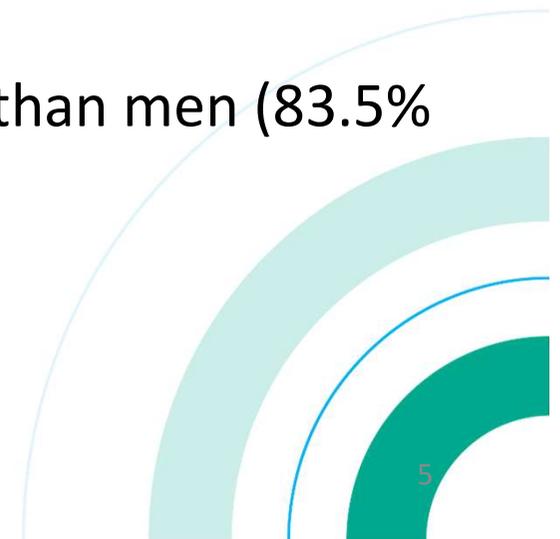
 – fear

 – joy

 – surprise

# Results

- Most commonly used is emoji expressing joy (78.0%), and the least used is emoji expressing anger (48.3%).
- Differences in frequency of use between generations Y and Z are negligible, both generations use or do not use emojis almost as often.
- Women use emoji expressing joy more often than men (83.5% vs 62.6%).



# Recognition based on the texts

*to choose the most appropriate emotions for the selected sentences, which the given sentence expresses.*

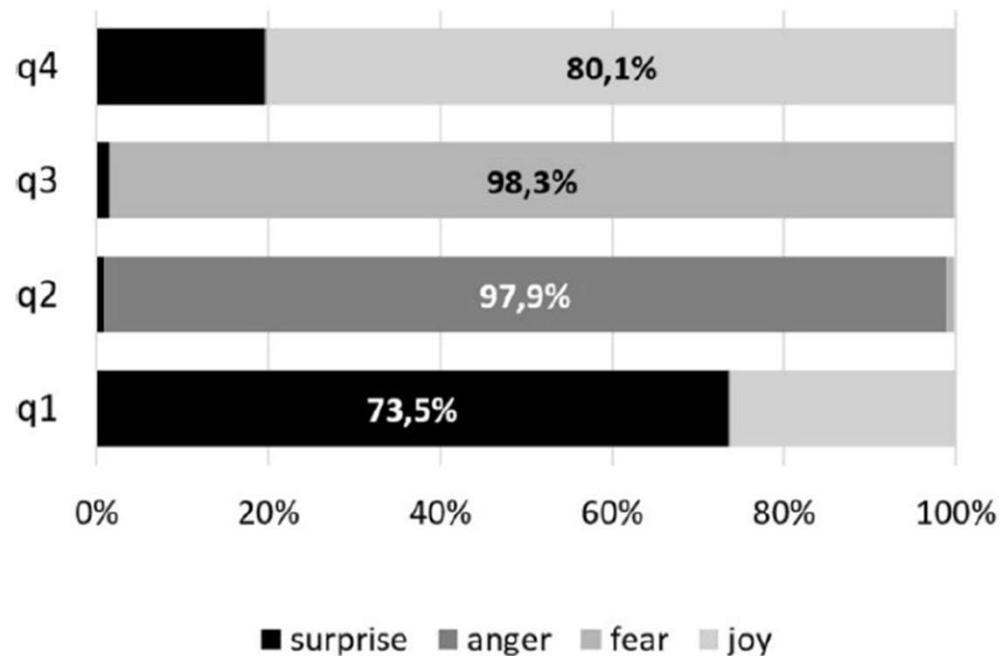
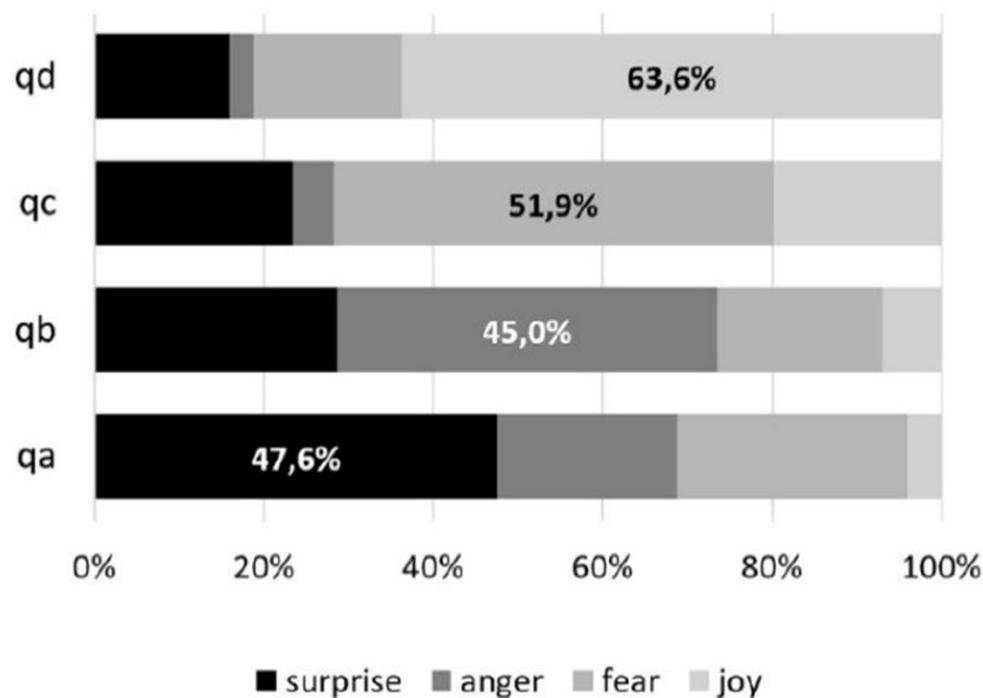


Fig. 1. Choosing the most appropriate emotion describing a particular sentence.

- Was very successful
- Confusion between joy and surprise
- Generation Y were more successful in recognizing joy
- No differences in the case of gender

# Recognition based on the emoji

*to assign to a certain sentence the most suitable emoji expressing the emotion that is carried in the text.*



- Was less successful
- Generation Z performed better in all four cases
- No significant differences were found between men and women.

Fig. 2. Choosing the most appropriate emoji describing a particular sentence.

# Discussion and conclusions

*RQ 1: Does the presence of emoji in a text message have a positive effect on recognizing emotion implicitly carried by the message?*

- The problem of interpretation of the message is not necessarily on the side of the recipient, but also on the side of the sender.
- A certain emoji does not necessarily represent an authentic expression of the emotional state of the sender.
- The respondents had better results when they assigned emotions to a certain sentence.

# Discussion and conclusions

*RQ 2: Do the representatives of the younger Generation Z estimate the emotions of another person at CMC better than the representatives of the older Generation Y?*

- The results of both generations were very similar. Minor differences were identified only in the case of selecting appropriate emoji for a particular sentence, where representatives of the Generation Z performed better in all four emojis.

# Discussion and conclusions

*RQ 3: Do women estimate emotions better than men?*

- Men were better able to recognize anger and women other emotions.
- Women are also associated with the appropriate use of emoji (the emotional charge of the text corresponds to the emotional charge carried by the emoji)

# Questions?