Univerza v Ljubljani
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Improving the usability of online usability surveys with an interactive Stripe scale

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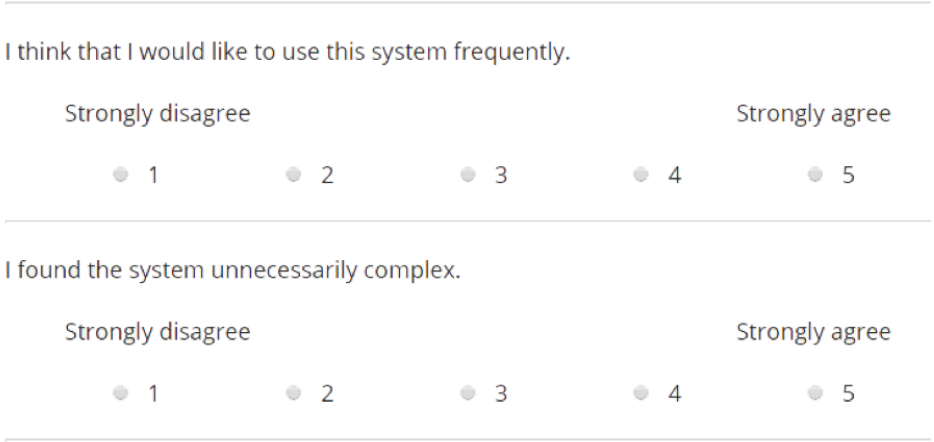
HCI
2016

Do we need a Likert alternative?

- **Likert scale pros:**
  - Widely used in standardised surveys (SUS)
  - Easy to implement online (radio buttons)
  - Familiriarity



- **Likert scale cons:**
  - Not enjoyable for the users
  - Difficult comparison in longer surveys

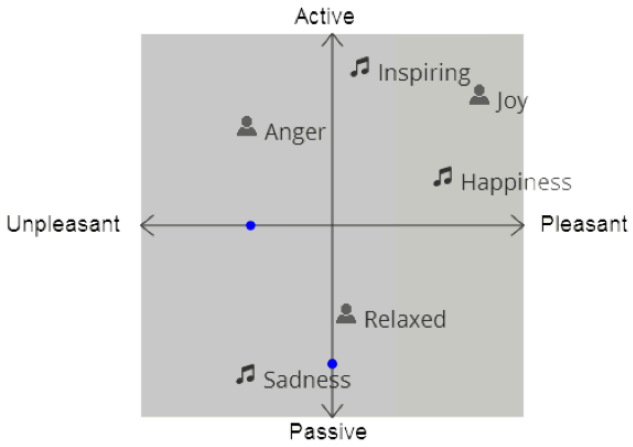
Potential benefits of a Likert alternative for online surveys

- An **alternative** interface?
  - More compact and mobile friendly
  - Easier comparison of answers
  - Interactive feedback
  - Happier users -> better retention
  - Using modern web technologies

Motivation: results from a large sample study on music and mood

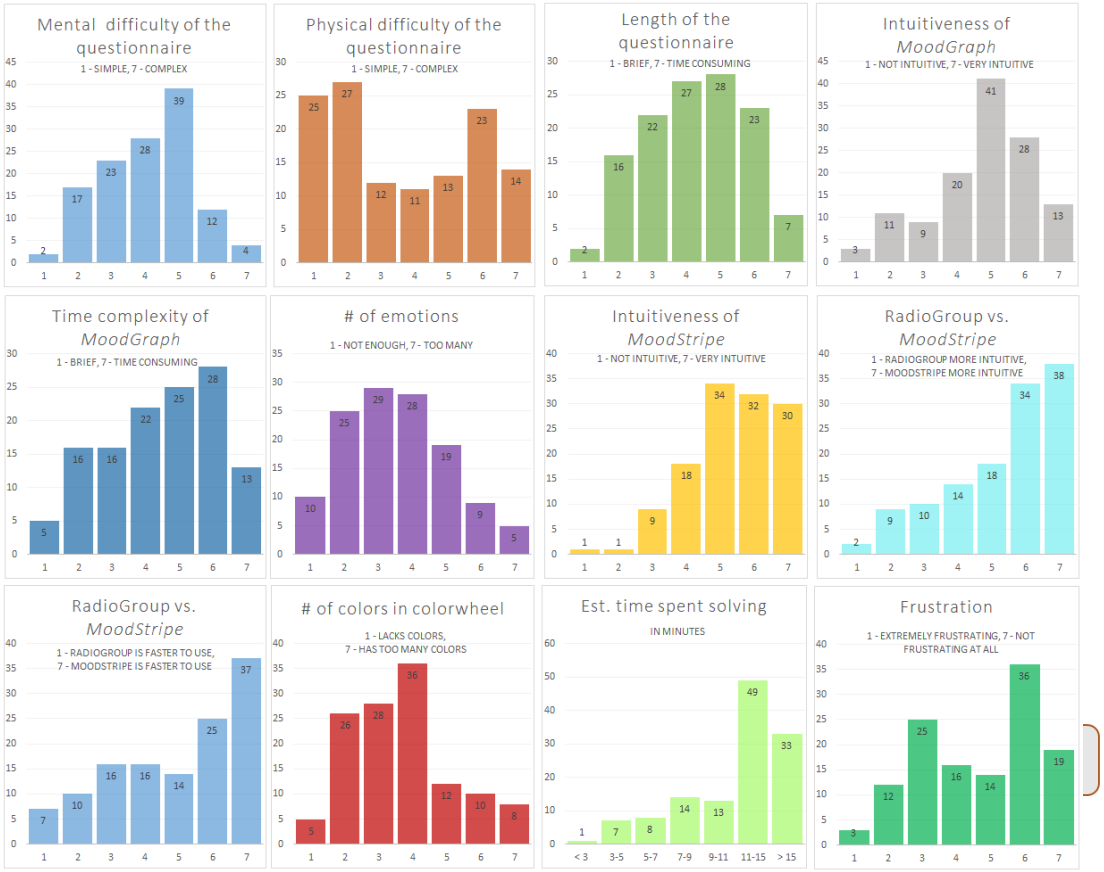
- Used Graph UI on **741** participants providing total **~7400** responses
  - Perceived/induced emotions of audio clips

	Sadness	Disappointment Calmness	Fear	Happiness Tension	Anticipation
	Joy Liveliness Calmness	Surprise Dreamy	Anger	Gloominess Fear Anticipation	Longing Relaxed



Motivation: results from a large sample study on music and mood

- Positive comments regarding Graph UI in the initial study
- Additional study to compare Graph and Likert (RadioGroup)
- 129 participants involved in afterstudy
  - Stripe and Graph **more intuitive**
  - **Less frustrating**
  - **Far better** than radioGroup (Likert) interface

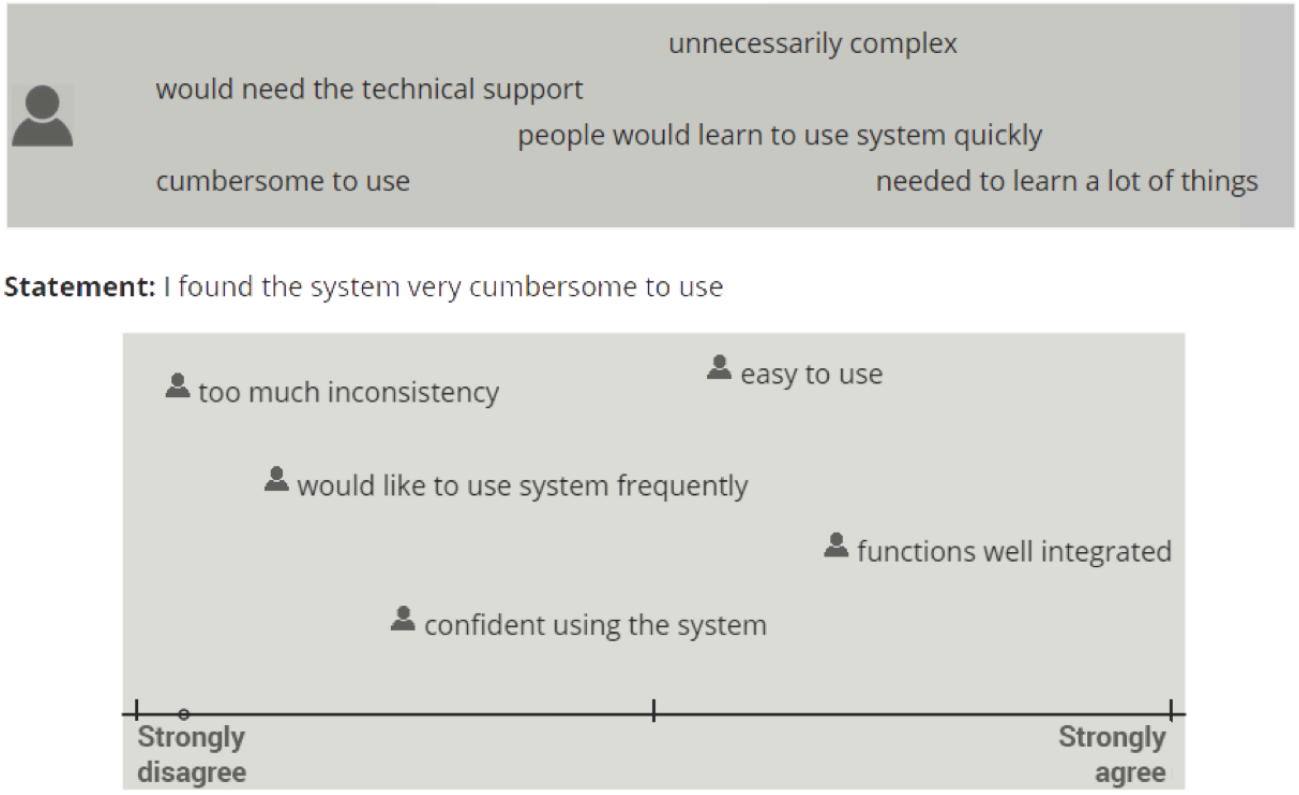


The Stripe: interface elements

Drag & drop

Answer interpretation

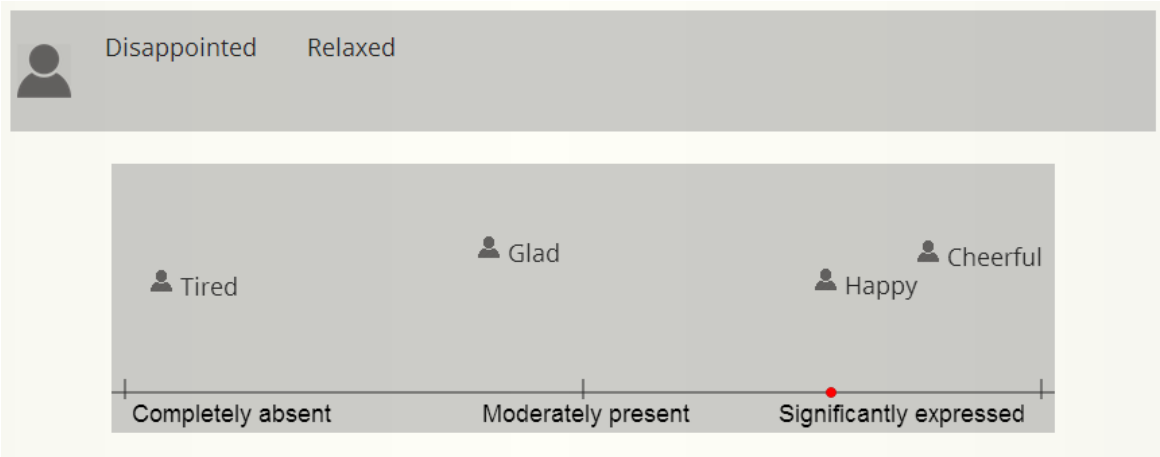
Visual comparison of answers



- **Interactive**
  - Using broadly **available** technologies (HTML5, JS)
  - Incorporating existing interaction methods (drag&drop)

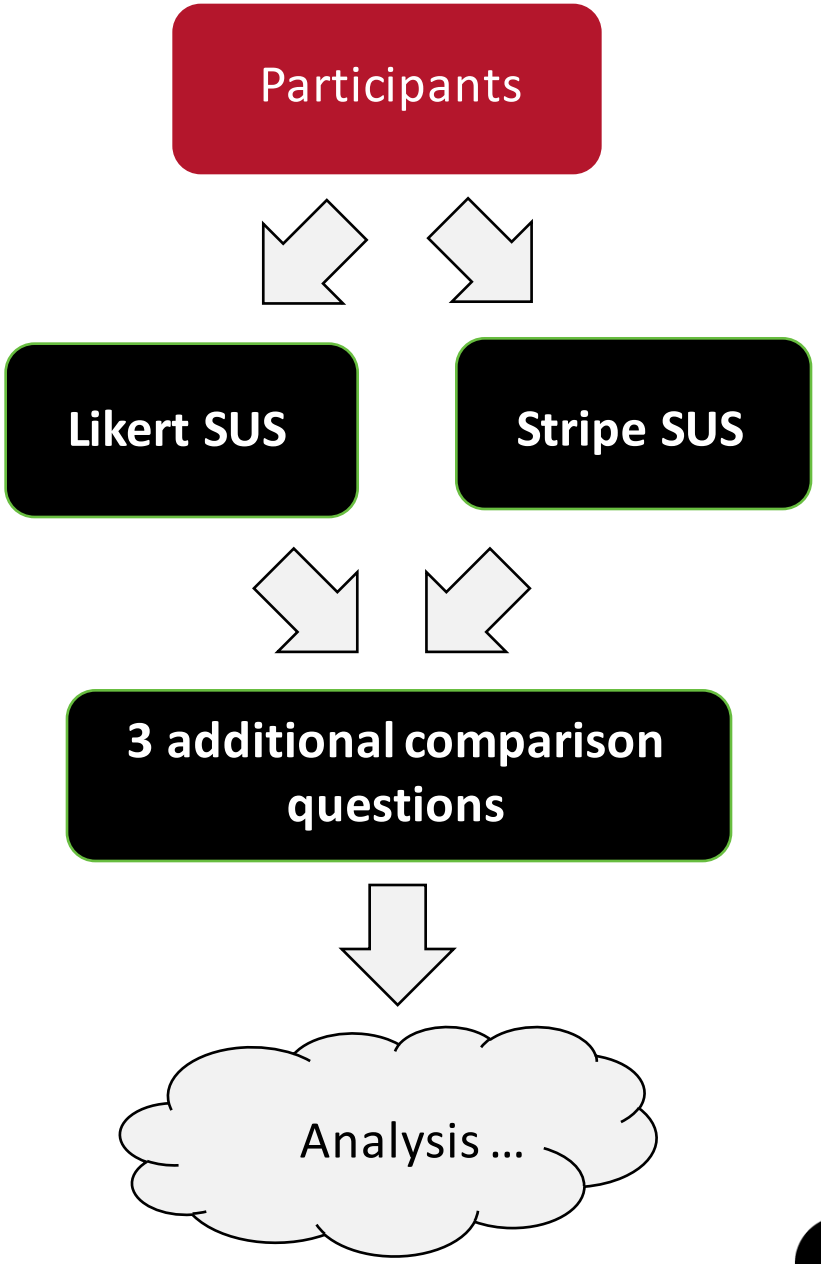
The Stripe: main research questions

- Can the Stripe interface be used to gather valid results in online surveys?
  - We need to make sure the UI doesn't induce bias
- Which UI do users prefer?
  - In terms of intuitivness and ease of expressing opinions



The experiment

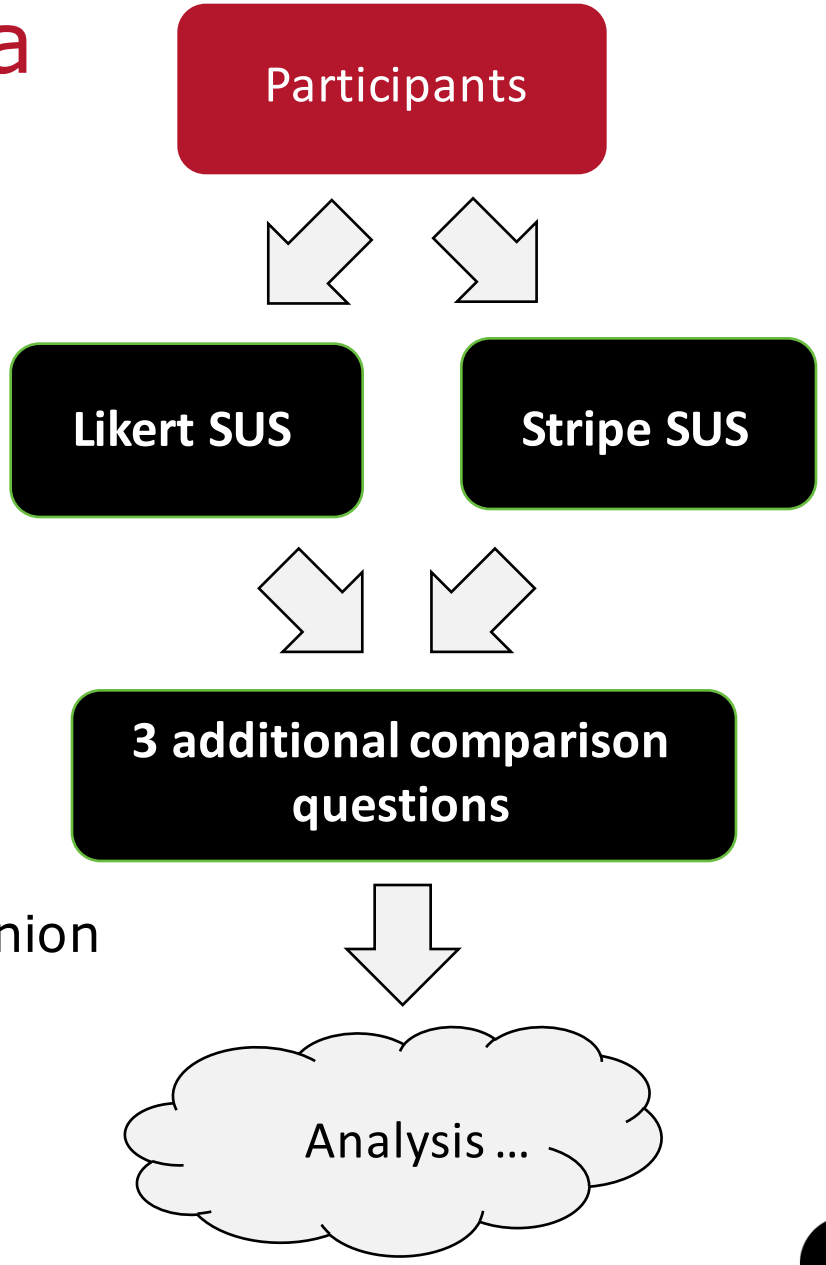
- Within-subject study of Stripe and Likert UI
- Compare SUS scores from both interfaces
- Additional questions to measure user preference



Analysing the data

- 68 participants
  - Solving both SUS
  - Responding to additional 3 questions

- 3 questions:
  - Which UI is more intuitive?
  - Which UI takes more time?
  - Easier/harder to express opinion using the MoodStripe?



The results

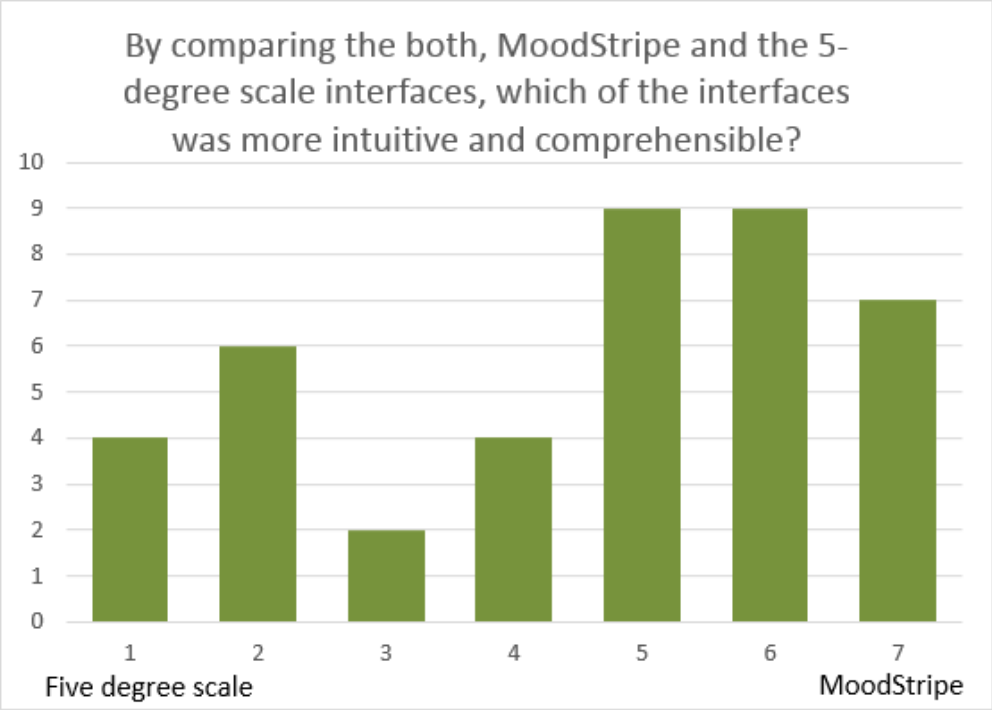
- SUS results/diff table

	avg. SUS score	σ of SUS scores
1. 5-degree SUS	79.88	18.03
2. MoodStripe SUS	79.02	16.61
3. Bin. MoodStripe	80,55	17.27
Δ 1 vs. 2	0.86	1.42
Δ 1 vs. 3	1.67	0.76

- Both Stripe and Likert provide reliable SUS results (even when compared to other studies)

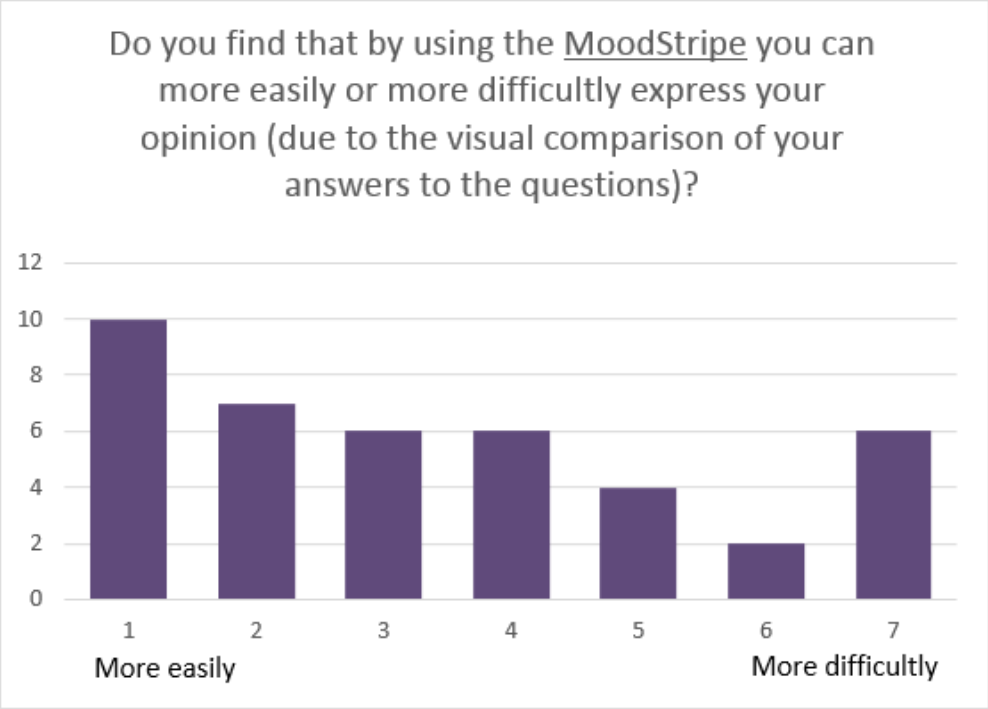
The results

- User preference: Stripe was more intuitive



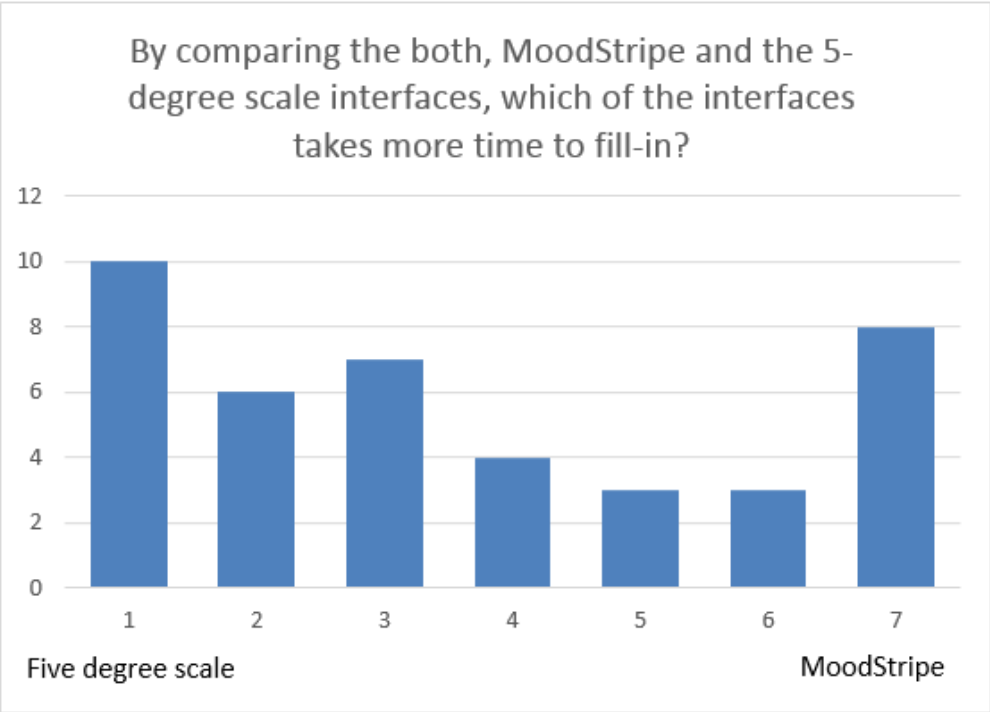
The results

- User preference: Stripe was easier



The results

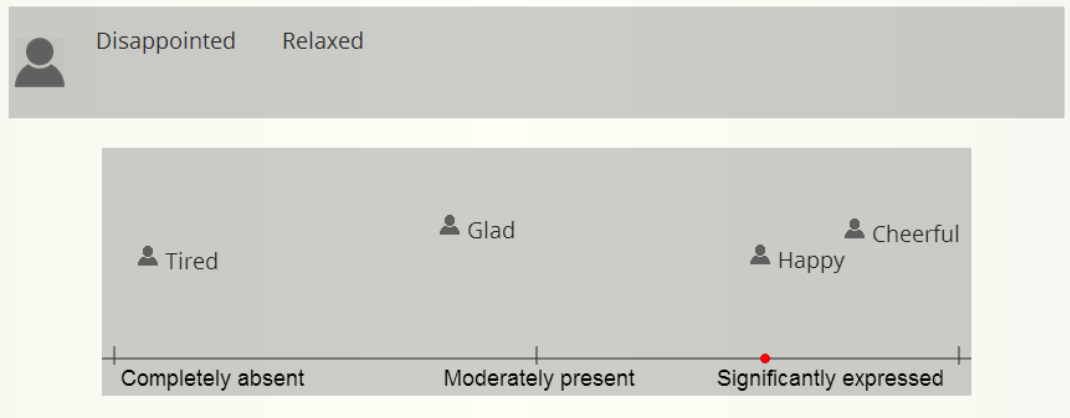
- Likert perceived as more time consuming!



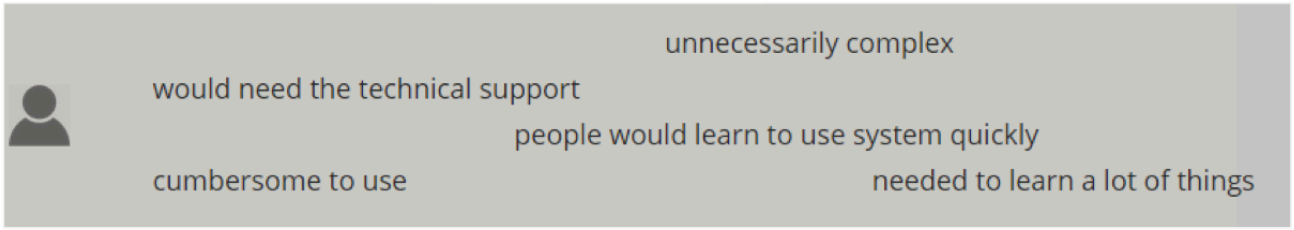
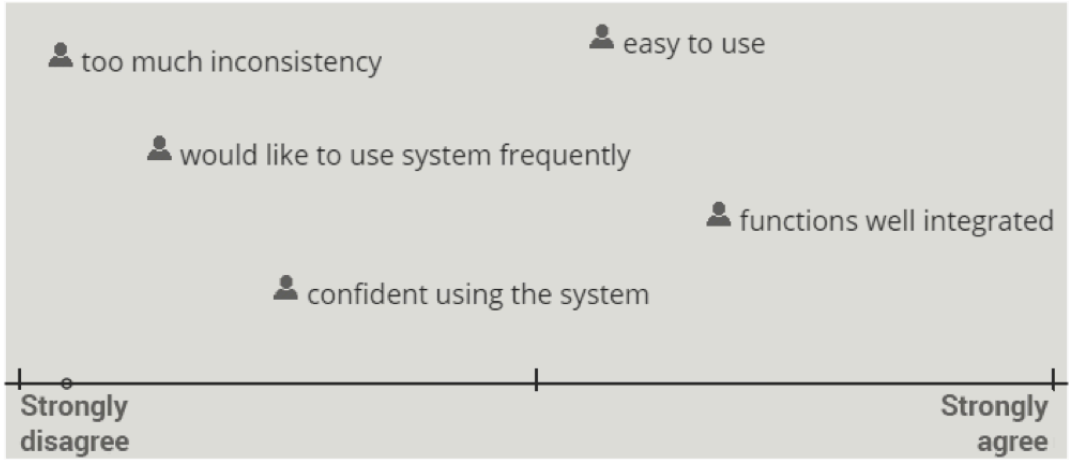
- Graphic scales generally take more time

Conclusion

- Stripe is a valid Likert scale alternative in online SUS
- Stripe was rated as more intuitive and easier for expressing opinions
- Surprisingly, the Stripe was also perceived as less time consuming – more research needed
- Future work will include additional Stripe modifications



Thank you for your time



Statement: I found the system very cumbersome to use