Food Talks

Investigating the potential of augmented reality to link food products with their environmental and nutritional data through design research

Introduction

There is growing interest in being able to make healthier and more sustainable choices, yet existing food labels are falling short. Environmental information is seldom depicted and packaging is already overcrowded.

Research question

Is using augmented reality better (regarding learning, aesthetics & usability) than a static digital page to show environmental and nutritional information about food products?

Process

Two years of user research, prototyping and testing resulted in specific AR design principles and a mobile application that shows nutritional, environmental, provenance, and personalised information about a food product when it is scanned.

Study

- We ran a between-subjects study with 62 participants
- 1 app showed information in augmented reality (AR)
- 1 app showed the same information on static pages
- Participants answered questions about 5 food products before and after using one of the apps
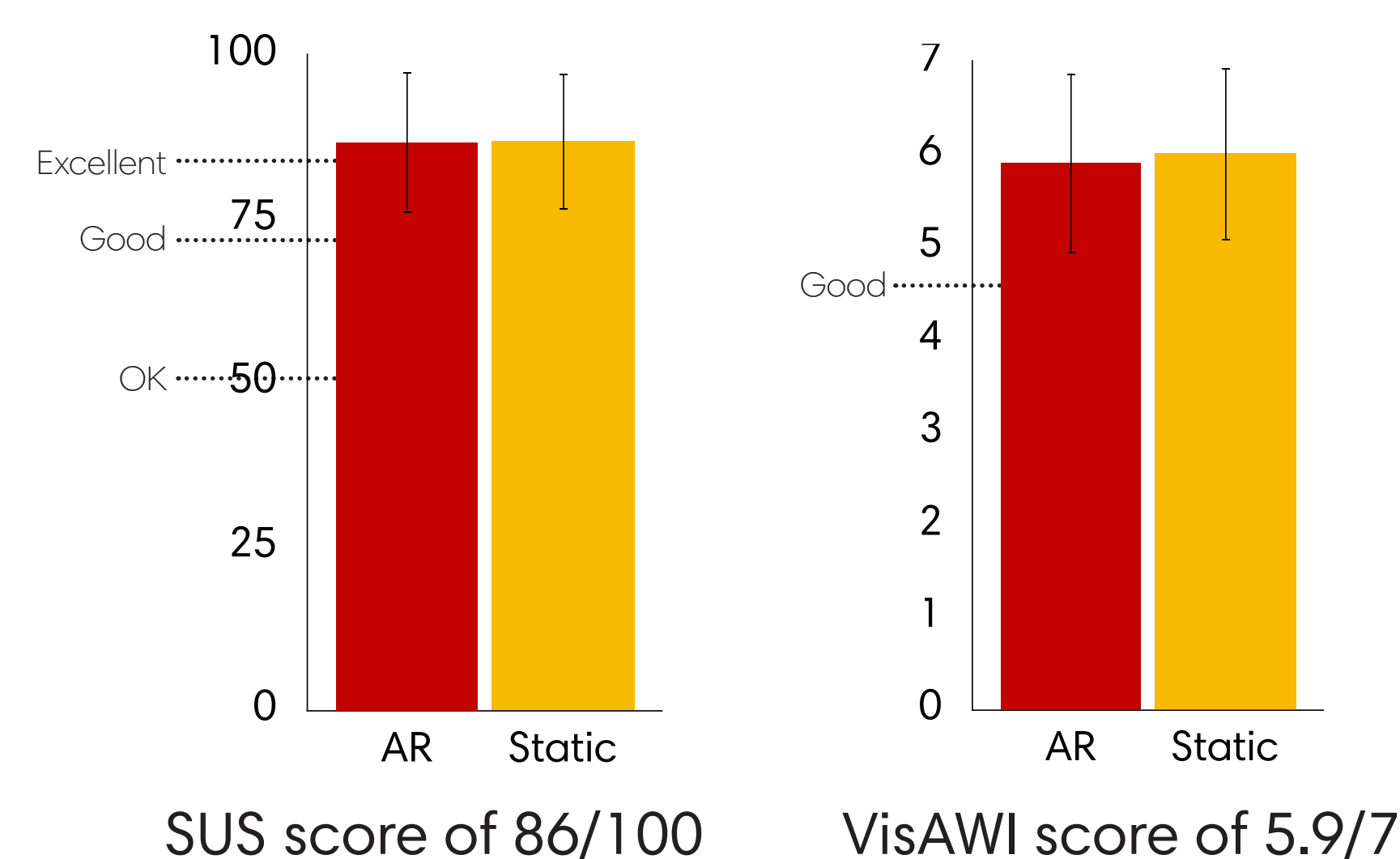- They also answered questions on usability and aesthetics

augmented reality

static

Results

1. Participants **learned more** about food products using **augmented reality**
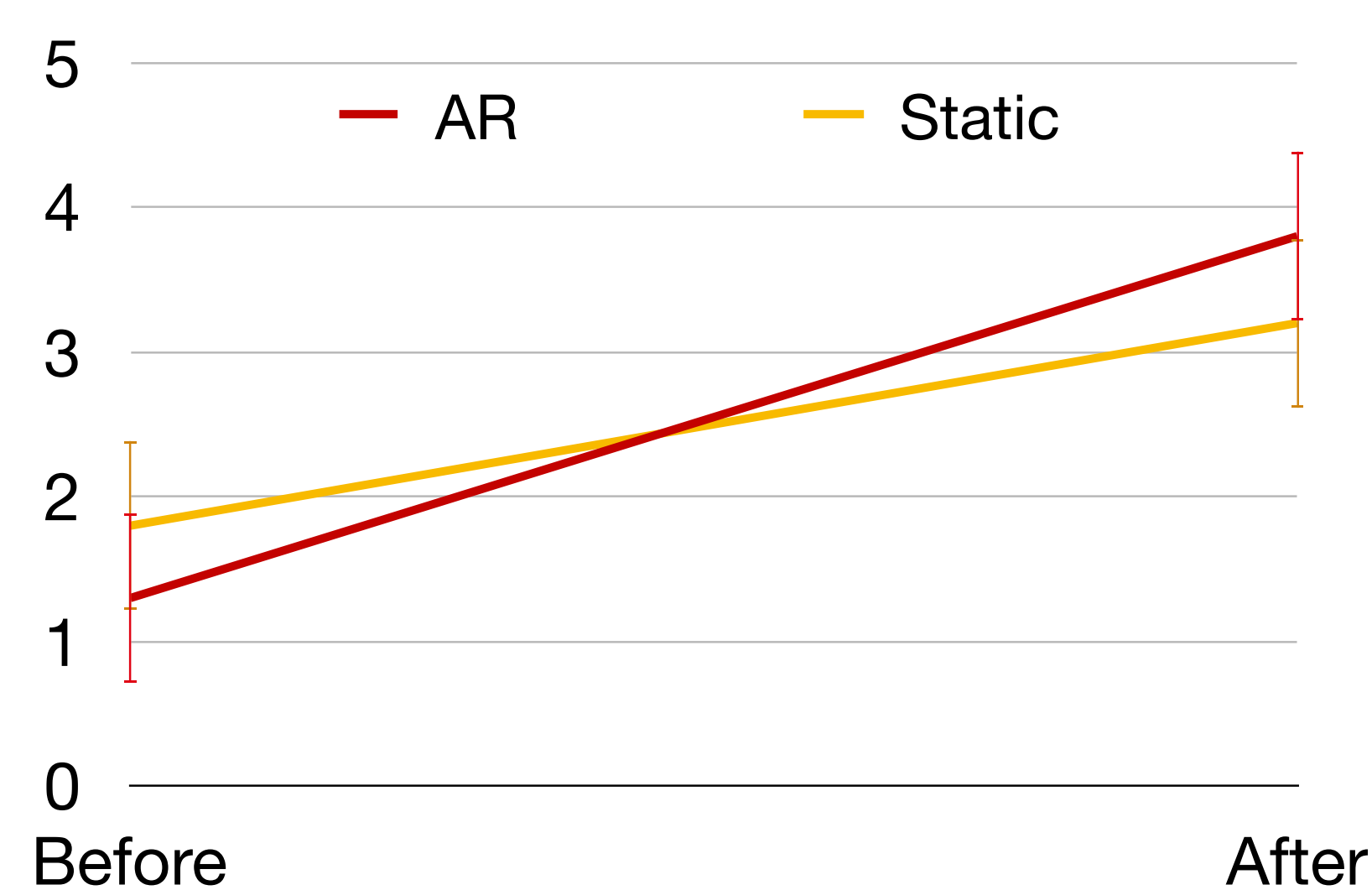
2. **High usability & aesthetics** were preserved in AR despite technical complexity

SUS score of 86/100   VisAWI score of 5.9/7

3. Our **qualitative feedback** showed that participants valued

Personalised label   Speed of scanning   Environmental data   Provenance data

But that more work needs to be done on
- The reliability of AR scanning
- Design of environmental information

Resulting AR Design Principles

- Use icons and pictograms for quick recognition of information
- Use traffic light systems for quick understanding
- Use a visual style inspired by collages to integrate digital content with the real-world
- Define interface colours from food packaging
- Put information in modules for equal hierarchy
- Allow users to set criteria for their personal label
- Include environmental data for empowerment

Contributions

- We showed that AR can be a credible media for communicating information outside of the fields of gaming and marketing

- We showed that AR can change people's perception of food products

- Based on high scores for usability and aesthetics, we were able to develop visual and interaction design principles for digital food labels and AR

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