windfo

Researching means of information on wind energy

TUM

Our Objective

Our objective is to identify the **most effective way of presenting information** that enables experts and scientists to **effectively communicate on social media platforms**. We aim to assess the retention and acceptance of information on wind power as a renewable energy source **through short video formats**.

Research Question

To what degree is informational content via short videos of different presentation format, clothing and type of language on the topic of wind power trusted and retained?

Methodology

We want to create a number of social media-like short videos that **only differ in setting, clothing and language**, but not content.

After a pre-assessment of a participant's knowledge and interest in wind energy and science topics in general as part of the survey, they are shown one of the eight videos and asked to answer questions on the style and content of the video, including detail questions on mentioned facts and numbers.

To receive enough data points and keep them comparable, all participants are asked to fill out the survey on a website, with the video embedded.

Short Videos

#1 Lecture
- lecture format
- casual clothes
- no direct interaction with viewer
- information transmitted directly

#2 Dialogue
- popular interview-style format
- interviewer/ee are the same person (changed camera perspective, outfit)

#3 Explainer
- presenter speaks directly into camera and to recipient
- medium shot
- low production effort

#4 Visual Explainer
- same footage as video 3
- with added animations for a more engaging format

#5 Real Video, Human Voice
- narrated visual with filmed clips of wind power plants
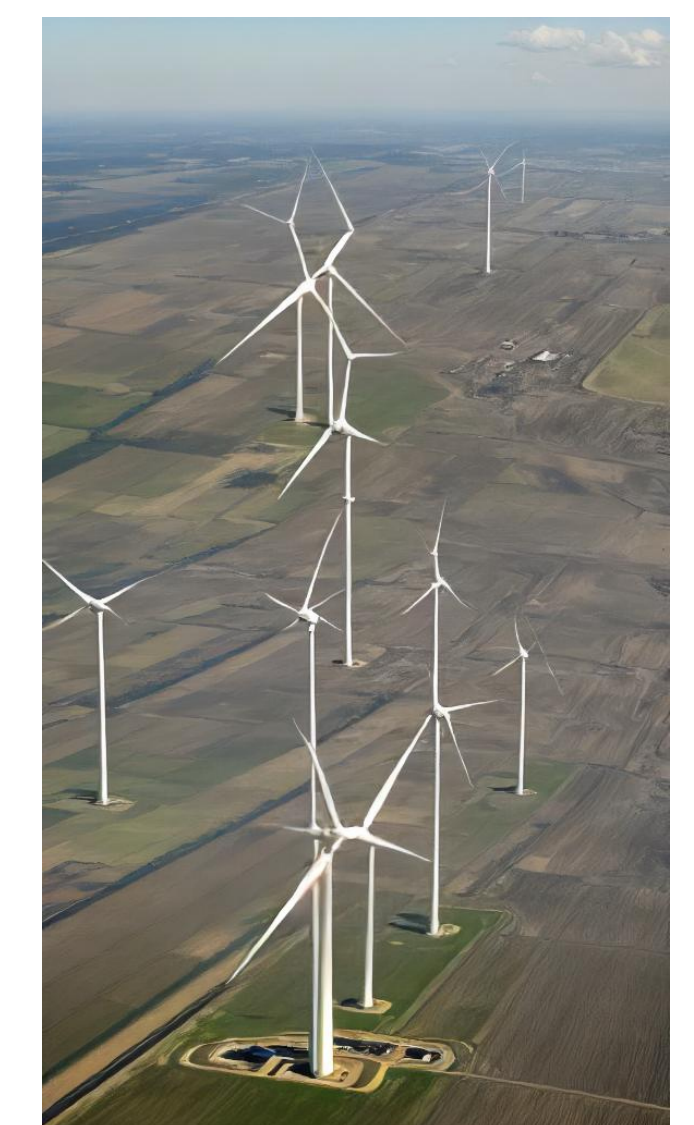- human voiceover
- no on-screen presenter

#6 Real Video, AI Voice
- same footage as video 5
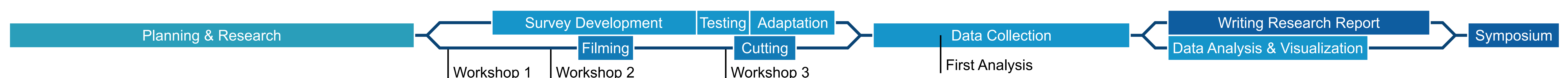- AI-generated voiceover

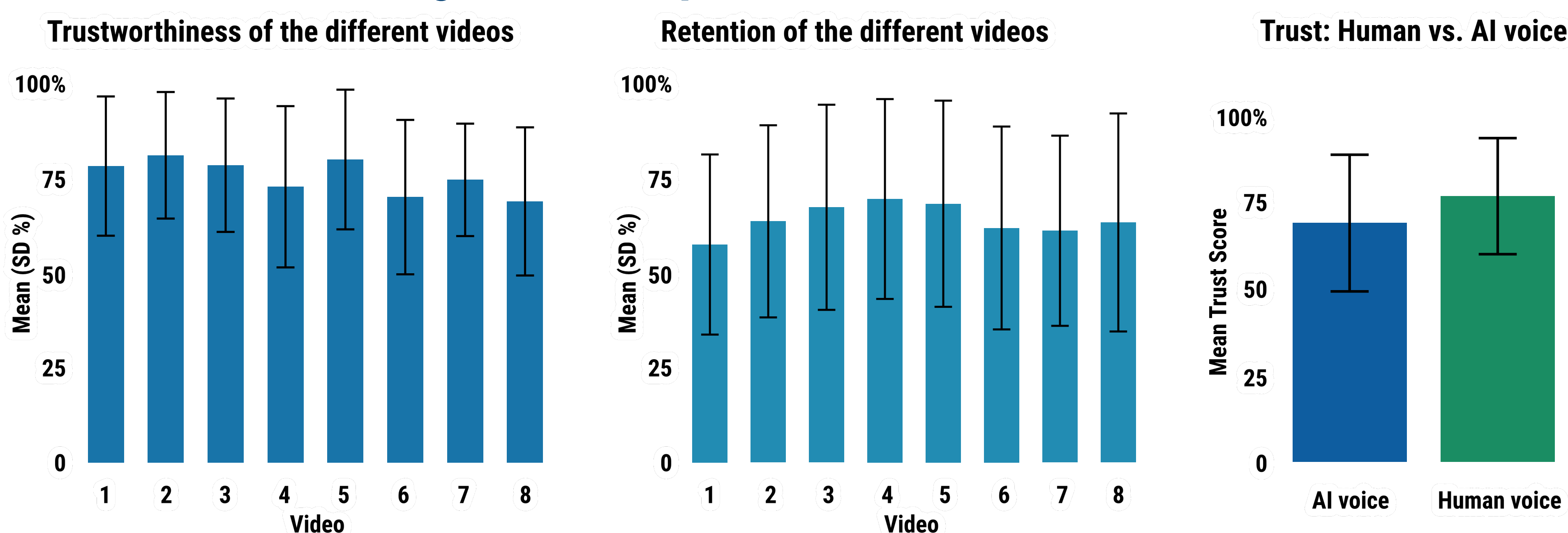### #7 AI Video, Human Voice
- AI-generated imagery
- human voice-over

#8 AI Video, AI Voice
- same footage as video 7
- AI-generated voiceover

Timeline

Planning & Research | Survey Development | Testing | Adaptation | Data Collection | Writing Research Report | Symposium
Filming | Cutting | Data Analysis & Visualization
Workshop 1 | Workshop 2 | Workshop 3 | First Analysis

Results (Data Analysis) [excerpt]

Trustworthiness of the different videos

Retention of the different videos

Trust: Human vs. AI voice

N = 441 (274 female, 158 male, 9 other). Survey participants were acquired via (1) sharing the survey link online (LinkedIn, WhatsApp Status, direct messages), (2) Asking people in public places to scan a QR code and complete the survey later, (3) Instagram Ads

Key Findings

#1: Human presence boosts trust
Viewers found content with visible speakers and natural human voices significantly more trustworthy than AI-generated content, highlighting the importance of authenticity in science communication.

#2: Comprehension and retention steady
Despite differences in format or speaker type, participants' understanding and memory of the content remained consistent, indicating that AI-generated content can be just as effective for learning.

#3: Format and demographics matter
Trust and enjoyment varied by video format and demographic factors like age and gender, emphasizing the need for inclusive design that considers audience diversity.

#4: Misinformation is hard to spot
Many participants struggled to identify intentionally placed false information, suggesting a widespread need for better media literacy and clearer sourcing.

#5: AI can aid efficiency and access
AI tools enhance production speed and offer features like automated translation and personalization, making science content more accessible to broader audiences.

Impact

Our research project set out to scientifically examine the factors that influence how short-form social media videos are perceived and how effective they are. We hope they inspire researchers across disciplines to set aside their reservations and begin communicating their work with the public to help rebuild and strengthen trust in science.

Acknowledgements

(1) Ofcom: *News consumption in the UK: 2023.* July 20th 2023. https://t.ly/nUNm-

(2) Harms, Frederik: *Anteil der Nutzer von Social-Media-Plattformen nach Altersgruppen in Deutschland im Jahr 2023.* November 2023. https://t.ly/FnaJH

(3) Giraldo-Luque, Santiago et. al.: *The Struggle for Human Attention: Between the Abuse of Social Media and Digital Wellbeing.* November 19th 2020. https://www.mdpi.com/2227-9032/8/4/497

(4) Balzan, Stefania et. al.: *Disseminating Science and Education through Social Media: The Experience of a Students' Editorial Team at the University of Padova.* April 5th 2022. https://doi.org/10.1128/jmbe.00345-21

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