

Reasons to continue or stop using a virtual coach for quitting smoking and increasing physical activity: A mixed-methods analysis

AUTHOR & SUPERVISORS

Nadyne Aretz - n.l.aretz@student.tudelft.nl
Supervised by Nele Albers and Willem-Paul Brinkman

AFFILIATIONS



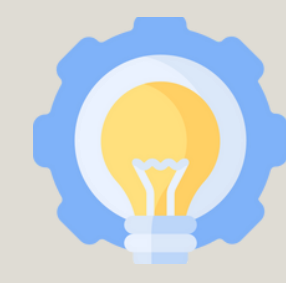
An analysis of around 500 free-text responses and their corresponding ratings to find out what the reasons are why users want to stop or continue using the virtual coach Sam.

01. Background



PROBLEM

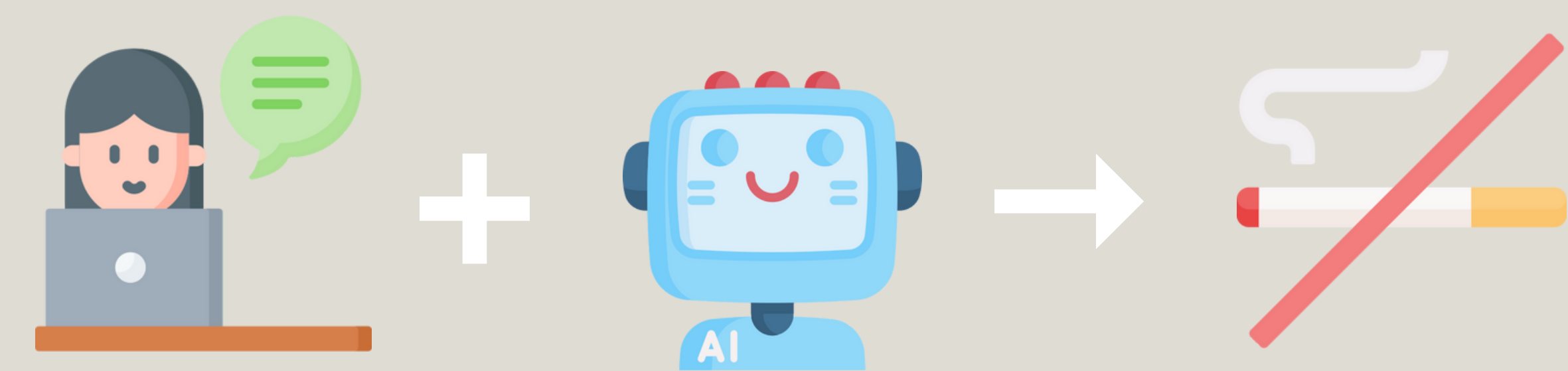
A lot of people experience health problems due to smoking and not being active enough.



SOLUTION

Virtual coach Sam who motivates users to do preparatory activities to stop with smoking and increase physical activity.

HOW IT WORKS



Users start chatting with Sam.

Sam suggests preparatory activities and tries to persuade users to do them.

Users start smoking less and increase their physical activity.

CHALLENGE

What are reasons that users accept or do not accept Sam as a virtual coach for quitting smoking and becoming more physically active?

02. Source of the data

The data used for the analysis has been sourced by Nele Albers and Willem-Paul Brinkman by using questionnaires and the virtual coach Sam through the online recruiting platform Prolific [1].

03. Objective

What are reasons for wanting to stop or continue using the virtual coach Sam for quitting smoking and becoming more physically active?

05. Results

THEME 1: AUTHENTICITY OF THE INTERACTION

"I think that real professionals are way better than a scripted dialogue" [2], (P1).

	R	P
Satisfaction rating	-0.61	< 0.05
Motivation towards doing the activities	-0.21	< 0.05
Ease of doing the activities	-0.16	< 0.05

Table 1: Pearson correlation coefficients (R) and the corresponding significance value (P) between theme 1 and a subgroup of user characteristics.

THEME 2: CARING CHARACTER OF THE VIRTUAL COACH

"...being in contact with Sam gave a feeling of support it helped a great deal towards the motivation to carry on" [2], (P14).

	R	P
Satisfaction rating	0.29	< 0.05
Motivation towards doing the activities	0.23	< 0.05
Participant's age	0.10	< 0.05

Table 2: Pearson correlation coefficients (R) and the corresponding significance value (P) between theme 2 and a subgroup of user characteristics.

THEME 3: CONTENT OF THE INTERACTIONS

"It gave me helpful tips that I can use and will help motivate me to quit smoking" [2], (P26).

	R	P
Satisfaction rating	0.37	< 0.05
Motivation towards doing the activities	0.24	< 0.05
Ease of doing the activities	0.11	< 0.05

Table 3: Pearson correlation coefficients (R) and the corresponding significance value (P) between theme 3 and a subgroup of user characteristics.

[2] Aretz, Nadyne; Albers, Nele; Brinkman, Willem-Paul (2022): Data and results for the bachelor thesis: Reasons to continue or stop using a virtual coach for quitting smoking and increasing physical activity: A mixed-methods analysis. 4TU.ResearchData. Dataset. <https://doi.org/10.4121/19936487.v1>

06. Recommendations

- Improve the interactivity.
- Focus on human-human interaction.
- Increase the caring character of Sam.
- Watch out for repetitiveness.
- Tailor the content of the interaction.
- Make use of gamification.
- Visualise the quit smoking efforts.

07. Future work

	Motivation towards doing the activities	Ease of doing the activities
Satisfaction rating	0.47 (P < 0.05)	0.32 (P < 0.05)

Table 4: Pearson correlation coefficients and the corresponding significance value (P) between the satisfaction rating and a subgroup of user characteristics.

Look into:

- Why participants were motivated to do the activities?
- What influenced the ease of doing the activities?

04. Methodology

Method triangulation:

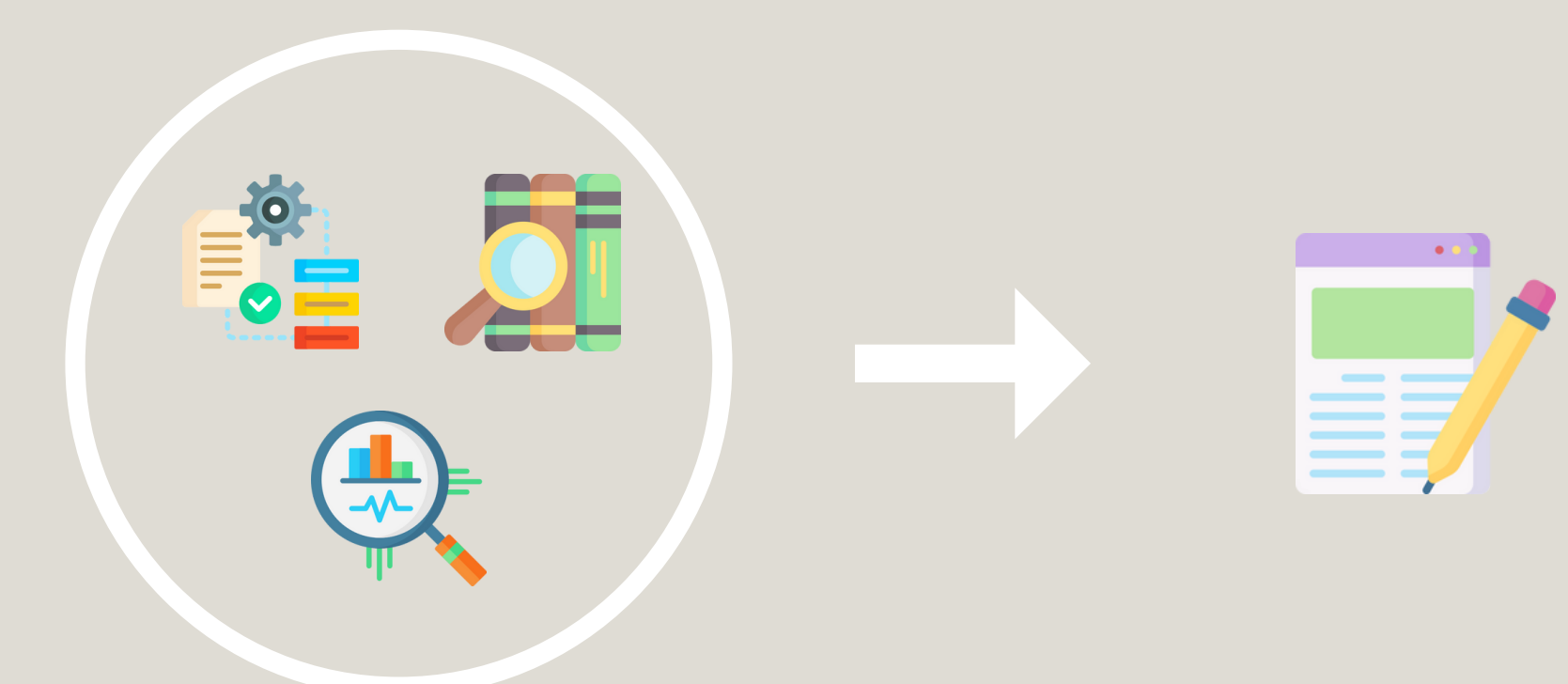
- Thematic analysis
- Quantitative data analysis
- Literature study

Researcher triangulation:

- Double coding

STEPS:

- Thematic analysis:** coding of the data, double coding and finding & analysing themes.
- Quantitative data analysis:** data preprocessing and correlation analysis.
- Literature study:** pearl growing, snowballing and citation searching.



Iterative process of the research steps.

[1] N. Albers and W.-P. Brinkman, "Perfect Fit - Experiment to Gather Data for and Test a Reinforcement Learning-Approach for Motivating People", 19-May-2021. [Online]. Available: osf.io/k2uac.