Questionnaire

Research title: Analysing antecedence of an intelligent voice assistant use intention and behaviour.

Dr. Rusen Tanribilir

Date: November 26th to December 9th, 2018, **Respondents:** total 277 (125 non-users and 152 current users).

This instrument consists of items for both current users (at the time of the research) and non-users.

Introduction to the survey

Dear participant,

Thank you for participating in this survey!

This questionnaire will help us to understand people's perception of voice assistants, such as Siri, Google Assistant, Cortana.

In the following section, you will be asked to give your consent for your participation in the study at hand.

Afterwards, you will be asked to create a personal code. This code consists of the last 4 digits of your mobile phone number. With this code, we will be able to preserve your anonymity during and after your participation.

If you would like to withdraw your data within 24 hours after completing the questionnaire, you can send this code to the Rusen Tanribilir via email at rusen@tanribilir.com

INFORMED CONSENT

I hereby declare that I have been informed in a clear manner about the nature and method of the research, as described in both timelines of Facebook or email invitation for this study.

I agree, fully and voluntarily, to participate in this research study. With this, I retain the right to withdraw my consent, without having to give a reason for doing so. I am aware that I may halt my participation in the experiment at any time.

If my research results are used in scientific publications or are made public in another way, this will be done in such a way that my anonymity is completely safeguarded. My personal data will not be passed on to third parties without my express permission.

If I wish to receive more information about the research, either now or in future, I can contact Rusen N. Tanribilir. Should I have any complaints about this research, I can contact the designated member of the Ethics Committee representing the ASCoR, at the following address: ASCoR secretariat, Ethics Committee, University of Amsterdam, *Postbus 15793, 1001 NG* Amsterdam; 020- 525 3680; ascor-secr-fmg@uva.nl.

Please click below to start the questionnaire.
I understand the text presented above, and I agree to participate in the research study.

Dear participant,
Please keep in mind that you will not be able to go back to your previous answers, so we ask you to read each question carefully.

This questionnaire will take approximately 15 minutes.

Filter Question:
FQ- Age: What is your age in years (e.g., 35)

[ ]

→**If under 18** direct participants to a **new screen** to explain that they cannot participate in this survey (**Filter out**)

New screen:

Dear participant thank you for your time.
We regret to inform you that this research meant for people who are 18 years old or older.
With our best respects and hoping to hear from you in future studies.

INT_FAM The next question is about your ownership of smart devices.

Filter Question:

FQ_SM: Please indicate below if **you currently own** from the following **smart devices.** You may check multiple boxes if applicable.

Smart devices are electronic gadgets which enable its user to connect, share, and interact with other people as well as other devices.

-Smartphone (e.g., iPhone)

-Tablet (e.g., iPad, Samsung Galaxy)

-Laptop/computer

-Smartwatch (e.g., Apple watch, Android WearOS)

-None

→ **If none** then filter out (Direct to a new screen to explain that they cannot participate in this survey (**Filter out**)

New screen:

Dear participant thank you for your time.

We regret to inform you that this research meant for people who use a smart device. With our best respects and hoping to hear from you in future studies.

Please enter below last 4 digits of your mobile phone number.

As outlined in the introduction, we will use these digits only as an identifier so that we can delete your answers in case you decide that you do not want your answers to be used. If we have not heard from you for 24 hours after completing the questionnaire, these 4 digits will be deleted from the data file.

[ ]

INT-IVA The next questions are about your familiarity with **voice assistants.**

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Question regarding IVA familiarity

FAM-IVA1: Have you ever heard about a voice assistant?

Some other names which refer to voice assistant are 'digital assistant' or 'personal voice assistant'. Some examples of voice assistants are Apple Siri or Microsoft Cortana.

These programs take commands or questions, either in written or spoken form and provide an answer or carry out a task for the user.

-Yes

- No

FAM-IVA2: Do you currently have any voice assistant installed on any of your smart devices?

-Yes

- No

FAM-IVA3: Which of the following voice assistant(s) are installed on your smart device(s)? You can choose multiple options if applicable.

→**Display** only if **FAM-IVA2** is answered **yes**

Siri

Google (Now) Assistant

Cortana

Facebook Voice Assistant

Blackberry Assistant

Bixby

Other (text entry)

Use behavior (UB) - Dependent variable for active users

UB: Which of the following voice assistants do you currently use? You can choose multiple options if applicable.

-Siri
-Google Assistant
-Cortana
-Facebook Voice Assistant
-Blackberry Assistant
-Bixby (Samsung)
-Other (Textbox)
-I don't use a voice assistant

UB1: How often do you use a voice assistant? If you use multiple voice assistants, please add up the time you spend with them.

→**Display** if **UB** is answered **other than 'I don't use a voice assistant'**

-Less than once per month
-A couple of times per month
-Once a week
-A couple of times a week
-Once a day
-1-2 times per day
-3-5 times per day
-6 and more times per day

Previous IVA use (PRE-U)

PRE-U1) Which of the following voice assistant(s) **did** you previously use? You can select more than one option if applicable.

Siri
Google (Now) Assistant
Cortana

Facebook Voice Assistant

Blackberry Assistant

Bixby

Other (text entry)

None

PRE-U2) Please indicate the reason to stop using a voice assistant? Please choose from below the most applicable.

→ **Display only** if **PRE-U1** is answered **other than 'none'**

-It was difficult to use

-It was not useful

-It was not needed

-I was just not interested

-I did not like the idea of speaking to a machine

-I didn't own a smart device with voice assistant anymore

-I had privacy concerns

-Some other reason(s)

INT-OCB The next questions are about your general communication behaviour.

Active online communication behavior (OCB)

OCB1: Which of the following smart devices do you use to communicate with others? You can choose multiple options if applicable.

By communication, we mean voice calls, voice messages, text messages and any sort of exchanges made over applications facilitating communication.

-Smartphone

-Tablet

-Laptop/computer

-Smartwatch

-Other

-I don't communicate through smart devices

OCB2: How often do you use the following applications to communicate with others?

→ **Display** this if question **OCB1** is answered **other than none**.

(1) Never to (5) Very often

-WhatsApp
-Facebook Messenger
-Hangouts
-Snapchat
-Instagram
-Other (text entry)

INT-UB The following section addresses your familiarity with **voice assistants' functionalities.**

Awareness of the IVA functionalities (AWF)

AWF-1: Even if you don't use voice assistants, based on what you've heard, learned or know about them, which **tasks** do you think **voice assistants can perform**?

Please choose from the list below. You can select multiple answers.

→**Display** only if **UB** is answered **as 'I don't use a voice assistant'**

-Chat
-Set the alarm
-Send a message
-Make a shopping list
-Stream videos
-Search for information
-Purchase a product
-I don't know any function
-Other (text entry)

AWF-2: Voice assistants perform various functions for their users. To what extent are you aware of the following functions of voice assistants?

→**Displayed for all.**

5-point scale from (1) Not at all aware to (5) Very much aware

-"I can ask voice assistant";

to search for information.

to entertain me" (e.g., tell jokes).

to organise my daily activities" (e.g., set reminders).

to connect with others" (e.g., make phone calls).

to find local business" (e.g., nearest pharmacy).

Perceived need for IVA (PN)

PN-2: Please indicate which of the following functions of voice assistants you think you (would) need the most?

(1) Not at all (5) A lot

-Information search

-Entertainment

-Assistance in organising

-Social aspects and staying connected

-Navigation assistance (finding a local business, e.g., nearest pharmacy).

PN-1: No matter whether you have used a voice assistant or not, how much do you think that voice assistants meet (or could potentially meet) your following needs?

(1) Not at all to (5) very much

-Need for information search.

-Need for entertainment.

-Need for being organised.

-Need for being social & stay connected.

-Need for navigation (to find a local business, e.g., nearest pharmacy).

INT-PU Regardless of whether you use voice assistants or not, please consider the following statements about how voice assistants ***<u>can be useful</u>*** *in daily life practices.*

Perceived usefulness (PU)

Please indicate to what extend you agree with the following statements.

5-point Likert agreement (strongly disagree to strongly agree)

PU-Users

→ **Display** only if **UB other than 'I don't use a voice assistant'**

-Using voice assistants for daily tasks enables me to accomplish tasks more quickly.

-Using voice assistants improves my daily task performance.

-Using voice assistants for daily tasks increases my productivity.

-Using voice assistants makes me more efficient in my daily tasks.

-Using voice assistants makes it easier to do my daily tasks.

-I find voice assistants useful in my daily tasks.

PU Non-users

→ **Display** if UB is answered **as 'I don't use a voice assistant'**

-Using voice assistants for daily tasks would enable me to accomplish tasks more quickly.

-Using voice assistants would improve my daily task performance.

-Using voice assistants for daily tasks would increase my productivity.

-Using voice assistants would make me more efficient in my daily tasks.

-Using voice assistants would make it easier to do my daily tasks.

-I would find voice assistants useful in my daily tasks.

INT-PEU The following question addresses your perception on general voice assistant *use or your tendency to use.*

Perceived ease of use (PEU)

Please indicate how much you agree with the following statements.

5-point Likert agreement

PEU-User

→**Display** if **UB** is answered **other than 'I don't use a voice assistant'**

-Learning to use the voice assistant was easy for me.

-I found it easy to get the voice assistant to do what I wanted.

-My interaction with the voice assistant did not require a lot of mental effort.

-I found the voice assistant easy to use.

(Lu, Yao, Yu, 2005)

PEU-Non-user

Whether you use voice assistants or not, please indicate how much you agree with the following statements.

→**Display** only if **UB** is **answered 'I don't use a voice assistant'**

-Learning to use the voice assistant would be easy for me.

-I would find it easy to get the voice assistant to do what I wanted.

-My interaction with the voice assistant would not require a lot of mental effort.

-I would find the voice assistant easy to use.

Let us, for a moment, think about learning new things in general. The following questions will indicate your motivation to use new gadgets.

Hedonic motivation (HM)

Please indicate your agreement on the following statements.

5-point Likert agreement scale

"Using new information technology is..."

-fun.

-enjoyable.

-very entertaining.

Peer influence (PI)

PI: Please indicate to what extent you agree with the following statements.

5-point Likert agreement scale

"People who are important to me..."

-use a voice assistant.

-think that using voice assistants is important.

-think that voice assistants have a lot of advantages.

-think that I should use a voice assistant.

PI-extra1: How many people from your family or friend circle use voice assistant?

-Numbers (**fall numbers-Qualtrics**)

-(0 = none)

Now we would like to hear about your intention to use voice assistants.

Intention to use (UI) -Dependent variable for non-users

Please indicate your agreement on the following statements

5- point agreement scale

-I am very likely to use voice assistant in the next <1-3> months.

-I plan to use the voice assistant in the next <1-3> months.

-I intend to use voice assistant in the next <1-3> months.

The following questions address your technology use habits.

Perceived technology innovativeness (PTI)

PTI) Please indicate to what extent you agree with the following statements

5-point Likert agreement scale

-When I hear about a new information technology, I would look for ways to experiment with it.

-Among my peers, I am usually the first to try out new information technologies.

-In general, I am eager to try out new information technologies.

-I like to experiment with new information technologies.

The following question addresses some privacy concerns that may come with the use of technology.

Perceived privacy concerns (PPC)

Please indicate to what extent you agree with the following statements.

"Disclosing my personal information to a voice assistant would..."

5-Point Likert agreement scale

- cause many uncertainties.

- cause unforeseen problems.

- be dangerous due to possible misuse.

- cause a high potential for my data breach

-Worry me that 3rd parties would use this information without my consent

You are almost done!

In the following section, you need to answer a few more questions about your background.

Occupation (OCP)

What is your current employment status?

-Employed fulltime

-Employed part-time

-Unemployed looking for work

-Unemployed not looking for work

-Student

-Retired

-Other ----------

Education (EDU)

-What is your highest level of completed education?

-Less than high school

-High school graduate, diploma or the equivalent (For example: GED)

-Trade/technical/vocational training

-Associate degree

-Some college credit, no degree

-Bachelor's degree

-Master's degree

-Professional degree

-Doctorate degree

Gender

-Please indicate your gender

-Male

-Female

-I would rather not say

END NOTE/DEBRIEFING

Dear participant,

Thank you very much for your valuable contribution to the current research.

Through this survey, we will be able to gain insight into voice assistant use intention of individuals.

In particular, we were trying to answer a question of what determines the individuals' use of voice assistants.

If you would like to hear about the study more, you are welcome to contact me or request a short report of the research.

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