



Apps Against the Spread: Privacy Implications and User Acceptance of COVID-19-Related Smartphone Apps on Three Continents

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RESEARCH QUESTIONS

How do different **data processing factors** of COVID-19 apps influence people's willingness to use them?

General **perception** of COVID-19 apps?

Apps for different **purposes**?

Differences across **cultures**?

Instrument: **vignette** study conducted in
(representative, ~1,000 participants per country)



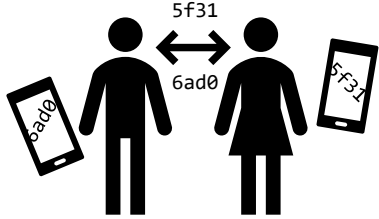
VIGNETTE DESIGN: FACTORS

Imagine an app that [APP PURPOSE].

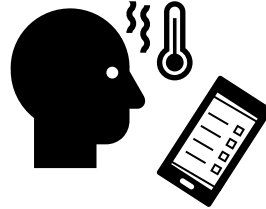
- The app uses [DATA].
- [USER ANONYMITY?].
- This data is sent to [RECEIVER] when [EVENT THAT TRIGGERS TRANSMISSION] and it will be stored [RETENTION PERIOD].

- [TECHNICAL IMPLICATION] Factor
 - [SOCIAL IMPLICATION]
-
- The diagram shows two pink arrows pointing from the text 'battery use' and 'malfunctions' to the '[TECHNICAL IMPLICATION]' box. A large black right-facing curly bracket groups these two items, with the text 'Factor Levels' to its right.

FACTOR LEVELS: PURPOSES



Digital Contact Tracing



Symptom Check



Quarantine Enforcement



Information



Health Certificate

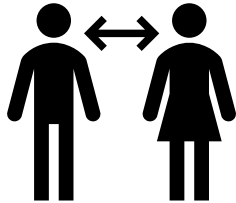
FACTOR LEVELS: DATA



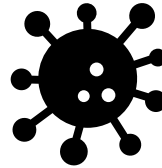
Location



Health or Activity Data



Encounter Data



COVID-19
Infection Status



Unspecified

VIGNETTE EXAMPLE

Imagine an app that provides information about your health and needs to be shown if you want to visit a certain place. **App Purpose**

- The app uses health or activity data, your COVID-19 infection status, and your current or past location(s). **Data** **User Anonymity**
- In addition, the app collects data that could be used to uniquely identify you.
- This data is sent to research institutions when you request your health report and it will be stored until the current coronavirus regulations end. **Receiver** **Retention** **Transmission**
- The app decreases your phone's battery life. **Technical Implication**
- Using this app may increase your personal freedom of movement or travel. **Societal Implication**

QUESTIONNAIRE

1. Smartphone use

2. Coronavirus experience

3. App Scenarios

Purpose
Imagine an app that provides information about your health and needs to be shown if you want to visit a certain place.

Data
• The app uses health or activity data, your COVID-19 infection status, and your current or past location(s).

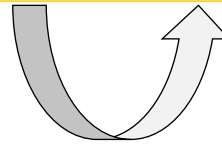
User Anonymity
• In addition, the app collects data that could be used to uniquely identify you.

Receiver **Transmission** **Retention**
• This data is sent to research institutions when you request your health report and it will be stored until the current coronavirus regulations end.

Technical Implication
• The app decreases your phone's battery life.

Societal Implication
• Using this app may increase your personal freedom of movement or travel.

- Willingness to use
- 3 additional questions






10x
(2 apps per purpose)

4. Own use and perception of COVID-19 apps

5. Trust in measures and institutions






6. Participants' privacy concern (IUIPC)

WILLINGNESS TO USE COVID-19 APPS

						
	mean	sd	mean	sd	mean	sd
Willingness to use	3.25	2.04	3.12	2.10	5.27	1.55
...

Rating on a 7-point Likert scale (higher number = higher degree of agreement)

INFLUENCE OF FACTOR LEVELS

			
	Contact tracing		User can be uniquely identified
	Previous use of COVID-19 apps		
	User can be uniquely identified Receiver: law enforcement		
	Technical malfunctions Receiver: private companies		

IN THE FULL PAPER

- Detailed analysis of the influence of factor levels
and survey responses
- Perception of COVID-19 apps (positive and negative aspects)
- Reasons not to use COVID-19 apps

- **Questions?**

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