American Privacy Perceptions in the COVID Pandemic

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***Abstract*—The COVID-19 pandemic raised digital privacy concerns due to contact tracing via smartphones and IoT devices, potentially altering privacy risk perceptions. We recruited 1,671 Americans from 2020-2023 to answer survey regarding preferences for sharing personal data for health or marketing purposes, highlighting factors influencing acceptance of data sharing. Quantifying privacy attitude evolution during crises reveals interactions between stress, risk tolerance, and technology acceptance. Our research proposal aims to inform the evolution and advancement of a COVID-based survey with in-depth interviews exploring reactions to contact-tracing strategies, potentially identifying previously unconsidered underlying factors.**

***Index Terms*—Coronavirus, Privacy Risk Perception, Contact Tracing, Internet of Things**

1. Introduction

The COVID-19 pandemic prompted a public health crisis unparalleled in a century, causing immense loss of life and socioeconomic turmoil across the globe. In efforts to contain this novel coronavirus threat, many authorities leveraged digital contact tracing powered by Internet of Things (IoT) devices like smartphones and wearable trackers to identify transmission chains [1]–[3]. However, such pervasive surveillance also raised alarms about violations of personal privacy [4]. Since the health emergency persisted years longer than anticipated, public perceptions regarding the appropriate balance between privacy rights and collective welfare in times of catastrophe may have shifted. Quantifying such complex trade-off calculations is vital for informing policy and guiding technology development centered on citizens' evolving notions of acceptable transparency.

This four-year study surveying Americans annually provides quantitative insights into evolving privacy attitudes regarding personal data usage for the collective good during extended crises. By tracking factors influencing comfort with technology-enabled transparency mandates, including risk tolerance, demographics, and data-sharing context, the analysis offers foresight into appropriate privacy-welfare balance points amidst disasters. Observing how trade-offs change as communities adapt can assist technologists and policymakers as they craft balanced public health policies.

During the survey, public health practices became politicized, correlating with previously unrelated beliefs [5]. Comparisons over time without this nuance may mislead; however, a consumer focus could provide a neutral approach. We explore strategies to advance the project while adapting to changes in technology and politicization.

2. Methodology

Online longitudinal surveys efficiently gather privacy perception data from large, diverse samples over time [6]. Yet obtaining a representative sample conflicts with the varying rates of departure by different groups. We report on a total of 1671 participants, recruited via Prolific, which took part in a 4-year study (2020-2023) with plans for a fifth year (2024). After being divided into groups based on the purpose of data collection General (personalized services) and Health (infectious disease tracking) groups, participants responded to measures of comfort with data collection and sharing for smartphones, security cameras, and fitness trackers [7]. Additional survey questions assessed perceived privacy and health risks [8], technology expertise, security skills, standard demographics, and experience and perceptions of COVID-19.

3. Results

Quantitative analysis techniques, including Wilcoxon Rank-sum and ordinal logit regression, were applied to the consistent set of ordinal measures to uncover trends and relationships between variables [9]. Having these hypothesis: H1: Participants' privacy preferences are constant regardless of information use during a public health crisis. H2: Risk perceptions and demographics influence participants' privacy preferences. We found over time that comfort with security camera data collection declined more for health than marketing purposes.

4. Future Work

We will continue the survey and plan to conduct interviews. Evolution of the study is a goal of participating in the workshop.

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