

Strengthening Community Resilience via Data Governance: Lessons from COVID-19 Dashboards

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Key points

- ▶ Salient, credible, and legitimate data policy can be achieved by carefully designing data-collecting and -sharing processes that strike a balance between safeguarding public health and protecting data privacy.
- ▶ Public trust is crucial for citizens' willingness to share personal data. It can be enhanced by strengthening communication between the government and citizens and aligning public interests.
- ▶ Optimal data governance should be adaptable to socioeconomic and technical contexts.
- ▶ Cities should learn from each other's experiences in data governance.

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Policy Focus

During the COVID-19 pandemic, interactive dashboards were used widely as effective data tools to track the spread of the virus and help citizens make informed decisions. Data tools could also be utilized to promote public trust and enhance community resilience if they are regulated by carefully designed data policies. Despite these benefits, research that explores how citizens respond to dashboard data and the related data governance issues is surprisingly scarce. Investigating the COVID-19 dashboards in Hong Kong, MPhil student

Veronica LI and Professor Masaru YARIME sought to answer two questions:

1. How can governments use data tools like dashboards to balance the trade-offs between safeguarding public health and protecting data privacy during a public health crisis?
2. How can governments design and implement salient, credible, and legitimate data governance in the future?

Study Methodology

In this study, the case of COVID-19 dashboards in Hong Kong and its implications for data governance were first examined through 804 bilingual (English and Traditional Chinese) valid online surveys and 11 semi-structured, in-depth phone interviews with users and developers of key dashboards in Hong Kong. Second, similar COVID-19 dashboards around the world were compared with those in Hong Kong in a typological framework based on data comprehensiveness and personal data disclosure. Third, recommendations for salient, credible, and legitimate data policies were offered.

Findings and Analysis

Demographic characteristics

The gender and education distributions of dashboard users in the survey were similar to those of the overall Hong Kong population, but their average age was remarkably younger. This result indicates that dashboards are more popular among younger citizens than among older citizens, who more often prefer traditional information sources like printed newspapers.

Behavioural responses

Most of the survey respondents were interested in tracking the number, locations, and types of confirmed COVID-19 cases in Hong Kong (see Figure 1). Surprisingly, almost half of them wanted to be informed about the residences of COVID-19 patients, although this information was potentially sensitive. Nearly 75% of the survey respondents used information provided by the dashboards to avoid risky locations (see Figure 2).

Public trust and COVID-19 data

Most of the survey respondents were unconcerned about the political alignment of the data sources, despite the recent political turmoil in Hong Kong (see Figure 3). Instead, they paid more attention to the trustworthiness and accuracy of the sources. In general, interviewees trusted the data provided by the government, although some of them expressed distrust of the government in other situations.

Privacy concerns

More than 70% of the survey respondents sought to protect their privacy by not providing personal data. In addition, nearly 60% expressed concerns about data breaches (see Figure 4). Culture could influence users' perceptions of privacy risks. For instance, interviewees who had previously lived in Western countries expressed greater concern over re-identification risks and data privacy.

Survey respondents were more open to sharing health

information than sensitive data with personal identifiers, e.g., their locations, names, and contact information (see Figure 5).

All interviewees indicated that their willingness to share data was influenced by trust. Some interviewees shared that they trusted the government, such as public health departments and bureaux, to store and use their data, especially when the government stated how the data would be used. On the other hand, some interviewees indicated that they trusted citizen groups and individuals whom they believed were motivated properly. Overall, the factors causing citizens to trust one dashboard over another were mixed.

Capacity for dashboard development

Technical capacity, such as medical and programming knowledge, is vital to building a functional, credible, and user-friendly platform. Data availability also plays an important role. During the pandemic, the government initially published data in PDF format but later switched to CSV-formatted data, which are more convenient for data processing and geomapping.

Social networks play a crucial role in recruiting experts and volunteers with required medical knowledge and programming skills, while interactive platforms enable citizens to provide feedback or crowdsourced data.

COVID-19 dashboards around the world

This study used two criteria—personal data disclosure and information comprehensiveness—to compare COVID-19 dashboards in Hong Kong and around the world. Some dashboards, such as the Daily COVID-19 Dashboard in Newcastle, were characterized by low personal data disclosure and low information comprehensiveness, as they provided COVID-19 case data at only an aggregate level. Dashboards in Hong Kong earned high scores for information comprehensiveness, but they also involved a high level of personal data disclosure. Nevertheless, some dashboards, such as the Dashboard of the COVID-19 Virus Outbreak in Singapore and the COVID-19 Information Website in Tokyo, achieved high information comprehensiveness with a reasonable level of personal data disclosure. These dashboards offered insightful information about COVID-19 cases sorted by demographic categories and geographic regions while omitting more sensitive information, such as a patient's flight seat number or building of residence.

Recommendations

Establishing collaborative tools

Two-thirds of the survey respondents were eager to seek out the residential and location data of new

COVID-19 cases, but only a minority were willing to share this information. Therefore, demand for information outweighed supply. To resolve this incongruity, the government could offer collaborative tools with which to reinforce communication, align public interests, promote public trust, and encourage constructive decisions regarding personal data use.

Establishing stringent and transparent privacy policies

Hong Kong's COVID-19 dashboards provided insights into how the government could balance data privacy and data transparency. Data-collecting and -sharing processes should be designed and implemented carefully to minimize data privacy and misuse concerns. Accurate, unbiased, and transparent data could enhance credibility and foster public trust. Moreover, data platforms should establish stringent and transparent privacy policies and regulations. The most effective method for alleviating data privacy concerns would be deleting the data after a specified period or clarifying the purpose of data collection. Other measures include ensuring that data are anonymous or handled by a trustworthy government.

Designing data governance according to unique social and cultural contexts

People from different cultures accept different levels of personal data disclosure. Western cultures tend to attach greater importance to data privacy than Eastern cultures. Insofar as Hong Kong is an international city with a diverse population, the government could calibrate its own data governance according to the city's unique social and cultural contexts.

Learning from the experiences of other cities

Dashboards of other cities have shown that a high level of data comprehensiveness and a low level of personal data disclosure can co-exist. For instance, the COVID-19 Information Website in Tokyo mitigated privacy risks by reporting COVID-19 case data by prefecture only rather than by specific residential buildings. Hong Kong could consider these alternative approaches when designing similar data tools in line with policy issues.

Optimal data governance should be adaptable to changing conditions

During the pandemic, the need for data transparency outweighed the demand for data privacy. Therefore, data policies featuring a high level of disclosure were accepted by citizens at critical times. Such a policy design may, however, not suit future scenarios. Optimal data governance must be adaptable to changing socioeconomic and technical contexts.

Figure 1 Answers to the question "What information regarding COVID-19 do you usually seek out?"

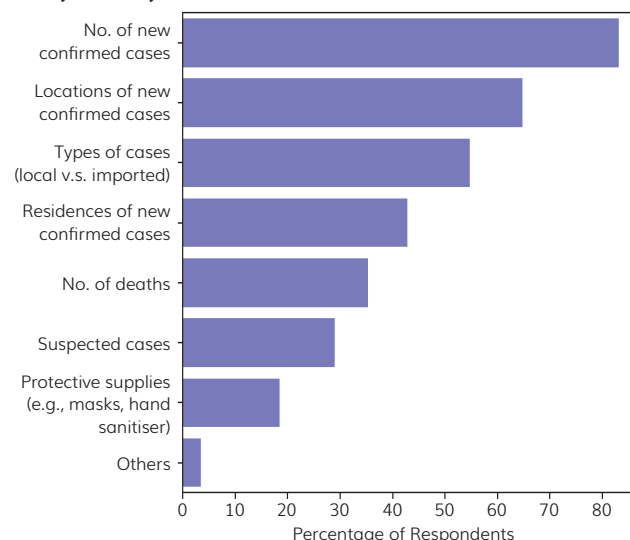


Figure 2 Answers to the question "Based on the information you receive from the dashboards, what actions will you take to protect yourself from COVID-19?"

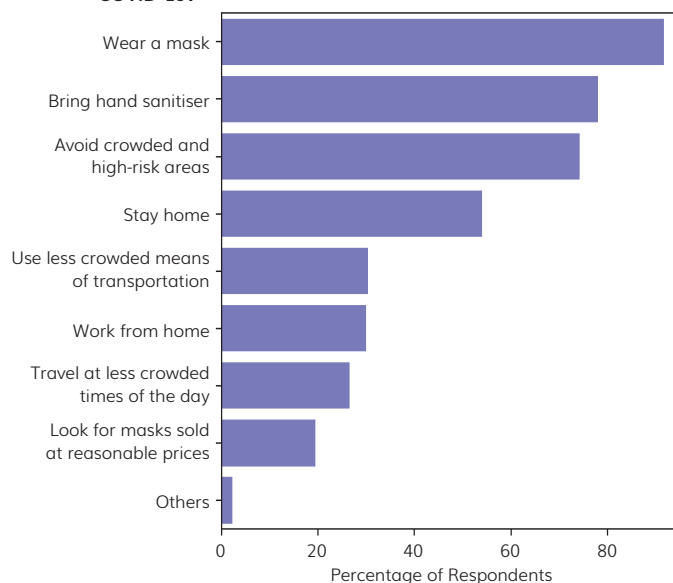


Figure 3 Answers to the question "To what extent do the following factors affect your decision to use a dashboard?"

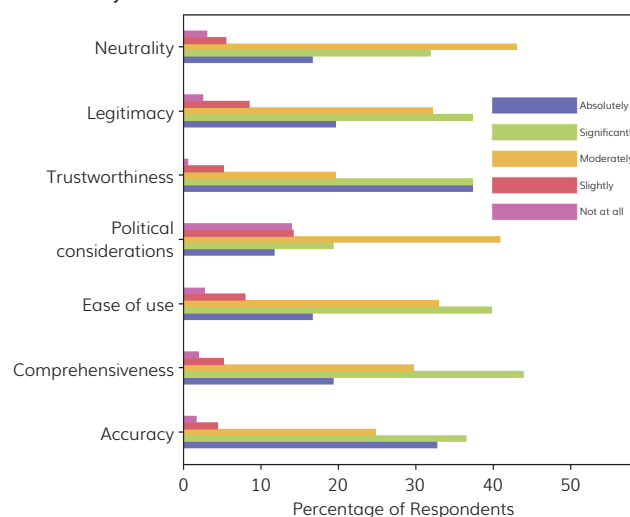


Figure 4 Answers to the question "What are reasons you would not be willing to provide personal information?"

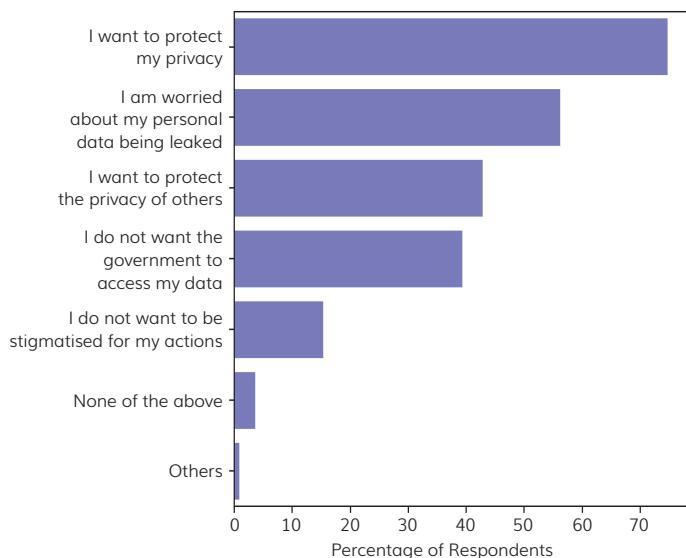
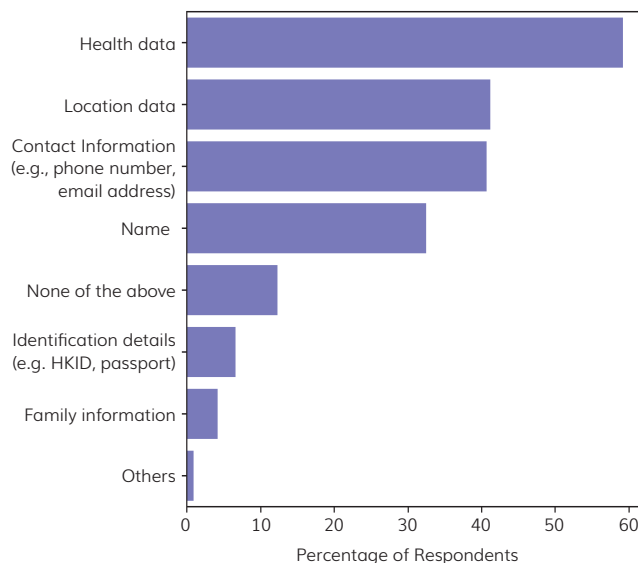


Figure 5 Answers to the questions "What types of personal information would you be willing to provide?"



Reference

Li, V. Q. T. & Yarime, M. (2021). Increasing resilience via the use of personal data: Lessons from COVID-19 dashboards on data governance for the public good. *Data & Policy*, 3: e29.



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