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Love Data Week in the time of COVID-19: A content analysis of Love Data Week 2021 events

Alisa B. Rod a, *, Marcela Y. Isuster b, Martin Chandler c

a McGill University Library, 550 Sherbrooke Street West, West Tower, 6th floor, Montreal, Quebec H3A 1B9, Canada
b McGill University Library, 3459 McTavish Street, Montreal, Quebec H3A 0C9, Canada
c Cape Breton University Library, 1250 Grand Lake Road, Sydney, Nova Scotia B1M 1A2

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ABSTRACT
A primary role for data-focused librarians is building community through traditional and novel modes of in-person outreach, including consultations, training, and themed events such as Love Data Week. Unfortunately, the COVID-19 pandemic rendered in-person events impossible. However, Love Data Week 2021 persisted in an online format, allowing data-focused librarians a unique chance to initiate outreach to geographically dispersed constituents. In this study, the authors investigate the nature and context of Love Data Week 2021 events to gain insight into current research data services trends, as impacted by the global COVID-19 pandemic. The authors collected qualitative information about 242 Love Data Week 2021 events across 37 organizations and coded the information using manual content analysis. This paper reports on descriptive results from the content analysis, including the dominant topics across events (software or digital tools, research data management, and service or product awareness) and the primary mode of events (workshops). The authors discuss implications for future research on Love Data Week and themed weeks in general as successful modes of outreach, community-building, and as venues for tracking emerging trends in the context of research data services.

Introduction
Love Data Week is an annual international celebration dedicated to raising data awareness and building a community interested in issues related to data, such as research data management, data sharing, preservation, reuse, dissemination, and library-based research data services. Love Data Week is usually hosted by academic libraries and research centers, but it is not limited to those organizations.

Love Data Week 2021, which was held between February 8th and 12th in 2021, presented an interesting challenge for hosts as the COVID-19 pandemic made in-person events less feasible. However, hosts rose to the challenge and offered a variety of engaging virtual events. As the authors were organizing their own Love Data Week events, they became curious about how other institutions were celebrating Love Data Week under the current circumstances.

This article reports on a descriptive content analysis of Love Data Week 2021 events, guided by the following novel research questions:

1. What were the common themes, methodologies, and tools discussed and taught during Love Data Week 2021?
2. What types of events were hosted for Love Data Week 2021 by different organizers?
3. How were the Love Data Week 2021 events distributed geographically and by sector?

Background
At major research universities, the library’s role in providing data and research data management (RDM) services is increasingly recognized (Dai, 2020; Kim, 2020; Oliver et al., 2019; Wong & Chan, 2021). Over the past decade or two, librarians working in data-related capacities have built awareness among researchers of these services and have shared successful approaches within the broader scholarly community of information professionals via conference presentations and publications. Data-focused librarians, including data services, data science, and RDM librarians or specialists, have generally implemented two types of approaches to generate awareness of services among researchers. First, data-focused librarians have implemented conventional marketing and outreach strategies tied to traditional modes of data literacy and technical instruction, including campus or library newsletters/email lists,
A second strategy focuses on the development and marketing of novel community-building events such as hackathons and datathons, themed weeks, and multi-institution/international grassroots campaigns related to promoting the library’s data services or data products (Barnett et al., 2018; Cross & Davis, 2016; Fritz et al., 2020; Gao et al., 2019). Hackathons and datathons have mostly been implemented at single institutions or through collaborative funding initiatives to generate awareness on specific topics. For example, the “Archives Unleashed” project, funded by the Andrew W. Mellon Foundation, grew out of a series of datathons designed to build community around archived web content as data (Milligan et al., 2019). Themed weeks have also allowed for grassroots community-building related to emerging trends in data practices. For example, data-focused librarians and units have piggybacked on Open Access Week, held annually in October, for years to offer open data events as part of an international community (Johnson, 2014; Jones et al., 2010). The success of Open Access Week has sparked others to coordinate international events related to a specific theme, such as GIS day, Endangered Data Week, the International Open Data Day, and Love Data Week (Carruthers, 2014; Koivisto, 2019; Weimer et al., 2012; Wissel & DeLuca, 2018).

Love Data Week began at Indiana University–Purdue University Indianapolis (IUPUI) in 2016 as a Valentine’s Day (week) initiative spearheaded by a planning committee, coordinated by IUPUI Digital Scholarship and Data Management Librarian Heather Coates (Wissel & DeLuca, 2018). The planning committee maintained a website and announced an annual theme, including “Data Quality” in 2017, “Data Stories” in 2018, and “Data in Everyday Life” in 2019. A key component of Love Data Week is social media engagement using coordinated hashtags on Twitter. In 2016, 30 institutions participated and listed their events on the collective website. Over the next couple of years, the event grew to include more than 100 participating organizations and institutions (Wissel & DeLuca, 2018). After the 2020 event, the original planning committee announced they would archive the website as events were occurring in a more decentralized manner (Coates et al., 2020).

In late 2020, several data-focused librarians initiated discussions through listservs, notably the IASSIST and the CANLIB-DATA listservs, to determine if there would be any central organization of Love Data Week 2021, including a theme or a single site to list events. As a result of these discussions, the University of Michigan’s Inter-university Consortium for Political and Social Research (ICPSR) volunteered to host a list of global events, choose a theme (“Data: Delivering a Better Future”), and serve as a central organizing location going forward. Due to the pandemic, most Love Data Week 2021 events were exclusively online and there were fewer participating institutions. However, this presented an opportunity to study a cross-section of unique Love Data Week events in order to understand what data-focused librarians did to pivot community-building strategies to a virtual setting. In this paper, the authors focus specifically on Love Data Week 2021 to gain insight into current trends, as impacted by the global COVID-19 pandemic, related to training and community events as a major component of outreach for library’s data-related services, products, and capacities.

Methodology

The organizations and events analyzed in this study were identified through three different methods. First, the authors mined ICPSR’s Love Data Week website. From 2021, ICPSR became the official home of International Love Data Week. The website lists some of the week’s events. However, it relies on institutions self-reporting. To account for this, the authors searched emails in data and library listservs (e.g. IASSIST listserv and CANLIB-Data) for mentions of additional events. Finally, internet searches for “Love Data Week” and “Love Your Data Week” as well as those terms combined with country identifiers were performed and results were explored for up to 20 pages per search. While the authors acknowledge that these searches could potentially exclude non-English or non-Latin alphabet sites, the goal was to identify institutions and events that specifically used the Love Data Week branding. Once the organizations and events had been identified, the authors visited the corresponding webpages to collect the relevant information.

Using a spreadsheet tabular format, all identified participating organizations were assigned a tab where all their events were listed. For each event the following information was collected: title, type of event, description, organizer (library/other), speaker/facilitator, and language. Originally the authors also intended to include information on whether events were open to those outside the host organization, since events were almost exclusively virtual, but such information proved difficult to obtain. A notes field for each event was available in case the data collector had any useful information about the event that did not fit the previous categories.

Following the data collection, the authors (a data services librarian, a subject librarian, and a research data management specialist) conducted a content analysis of the event titles and descriptions in order to determine high level topics emerging within and across institutions. Content analysis is a systematic method of coding, analyzing, and inferring meaning from qualitative data types, including unstructured text such as the event descriptions (Bernard et al., 2016; Krippendorff, 2018; Stemler, 2000). The process of content analysis involves categorizing a corpus of data to identify variations and comparisons among the observations, which in this case were the events (Ryan & Bernard, 2003). Content analysis can be conducted by human coders or by machines (e.g. software or algorithms). Although many researchers rely on software, which is more efficient at identifying themes in large datasets, there is also research showing that human coders are reliably better than machines at coding for nuanced or sophisticated concepts (Conway, 2006). Thus, since the dataset was not unmanageably large and covered specialized technical topics, the authors decided to code the dataset manually.

Generally, there are two levels or units of analysis that can be coded using content analysis, including words or word counts (e.g. “data”, “R”, “cybersecurity”, etc.) and concepts (e.g. “data science”, “open science”, references to ideas about the relationship between social justice and data, etc.). Based on the nature of our dataset, the authors employed an approach that accounted for coding a set of specific words and concepts in general.

The process of content analysis is highly iterative and involved multiple independent coders (the three authors) in order to ensure internal validity (Fonteyn et al., 2008; Kurasaki, 2000). First, the authors familiarized themselves with the dataset by each reading through a different sample of event descriptions from 3 to 5 institutions. A preliminary codebook was then constructed by developing a list of categories based on the research questions. For example, each author independently noticed at least one mention of COVID-19 or the pandemic, which was then included in the codebook. The total institutions were then divided into three samples with 10 or 11 institutions in each sub-sample. Authors each coded two of the three sub-samples using the preliminary codebook (i.e. two coders reviewed each sub-sample). Following the initial round of coding, the authors reconvened to discuss discrepancies in the codebook and disagreements among the coders and to clarify terms or concepts. For example, codes for data infrastructure or cybersecurity were not originally included, but it became clear during the initial round of coding that these concepts were central to at least a few events.

In the process of content analysis, data coding can begin after the creation of a refined and final codebook (Erlingsson & Brysiewicz, 2017). However, there are three additional decisions to first reconcile regarding the process of coding the data. First, coders must determine if content can be coded into more than one category (Krippendorff, 2018; Kurasaki, 2000). In many cases, for this dataset, the Love Data Week 2021 events covered more than one topic or theme. Thus, due to the
nature of this dataset, the categories included in the codebook were not mutually exclusive. For example, several events focused on teaching R as a tool for data visualization and creating maps. In this case, events were coded for a data tool (e.g. R, Tableau, Excel, Python, etc.), data visualization, and GIS/mapping, resulting in three codes for each of these events. The second decision related to coding is to finalize the unit of analysis (Krippendorff, 2018; Stemler, 2000). With qualitative data, it may not always be apparent how to organize the data until after an initial coding round. In this case, because the research questions relate to describing the events, including the context of each event, the unit of analysis for this study is the full event description. The third decision relates to the number of coders for each observation in the dataset. For manual content analysis involving human coders, including at least two coders per observation improves the level of rigor of the overall study (DeCuir-Gunby et al., 2011). For efficiency, the authors opted to again code each code two-thirds of the dataset, resulting in each observation coded twice independently.

For the second round of coding, each author coded independently, meaning first-round codes for each event were masked. Following the second round of coding, two coders’ results were compiled for all events to compare agreement or disagreement. Determining inter-coder reliability is more complex when multiple codes are assigned to each event. Overall, there was agreement on fewer than 50% of the codes, which is an unacceptable level. Generally, 80% agreement is considered high enough to ensure reliability (Franklin et al., 2010). However, in manual content analysis of complex unstructured data, this is neither uncommon nor unexpected (Kurasaki, 2000). The remedy is to review the codebook and discuss the disagreements and then re-code the dataset again. This process is repeated until near total agreement is reached among the coders.

Upon discussion, the authors discovered many instances of disagreement stemmed from similar sources of differences in interpretation and their position in the library and research ecosystems. For example, the subject librarian coded the concept of citing data as an ethical issue, whereas the RDM specialist author, who has a background in applied survey research methodology as opposed to library and information science, initially did not. The subject librarian convinced the RDM specialist that citations are directly related to the ethical use of information.

Additional disagreements involved the categorization of complex or nuanced concepts. For example, a set of events about the effects of algorithmic biases on marginalized populations, one coder was applying a code for data ethics and another for social justice. Although ethics and social justice are not mutually exclusive, it was decided that social justice was the more applicable category in this case due to the context of the event descriptions. Thus, it was agreed to consistently apply the social justice code to events about the effects of algorithmic biases, whereas events about the biases themselves would be coded with the ethics category. This example also highlights the high degree of contextual nuance of the event descriptions.

Following a review of all disagreements within the coding, the data was re-coded a third time and resulted in close to 99% agreement (see Appendix A for final version of codebook). Since many events corresponded to multiple codes, the descriptive results depict non-unique aggregations except for the event type.

Data Availability Statement

The data that support the findings of this study are openly available in Scholars Portal Dataverse at https://doi.org/10.5683/SP2/L21GYN (Rod et al., 2021).

Results

A total of 37 organizations hosting 242 events were identified. The majority of these organizations (30) were universities hosting these events through their libraries or research data services departments. Of the remaining, five (5) were information-related organizations (e.g. ICPSR, National Library of Medicine, and UK Data Service) and two (2) were vendors (LabArchives and Springer Nature). Organizations were mostly based in the United States (26), five (5) were in Canada and six (6) others were in Europe (France, Germany, Ireland, Switzerland, and the United Kingdom). Most organizations offered between 4 and 12 events during Love Data Week 2021. However, three institutions offered over 20 events: The University of California System (29) – comprising UC Davis, UC Irvine, UCLA, UC Merced, UC Riverside, UC San Diego, UC San Francisco, UC Santa Barbara, and UC Santa Cruz, Brown University (28), and New York University (21).

Regarding the types of events, workshops were the most popular format accounting for 57.9% (140) of all events. Lectures, panels, and talks represented 19% (46) of all events followed by informational webinars, which made up 11.2% (27) of all activities. Other less popular events were discussions (4.5%), drop-in sessions or office hours (4.1%), and immersive experiences (3.3%). The latter included events such as a data escape room, a data haiku contest, and a datathon (see Fig. 1). Speakers and facilitators included librarians, representatives from university departments (e.g. IT, research funding), graduate students, external and internal researchers, and professors.

Given that three organizations hosted almost a third of the events, the authors also looked at the event type distribution omitting those three organizations. The results were not substantially different from the aggregated results including the full dataset. While there were slight increases in workshops (4.3%), discussions (2.2%), drop-in sessions or office hours (0.8%) and immersive experiences (0.4%), lectures/panels/talks and informational webinars experienced slight decreases of 5.6% and 2.2% respectively. However, the overall distribution of the data did not shift.

Regarding topics, events focusing on tools, including scripting/programming, data analysis, or other digital tools or software, were the most prevalent with tools or software mentioned or featured 138 times across the 242 events analyzed. Tools for programming/statistics/computational analysis and those for data analysis were the most popular being present in 15.3% (37) and 14.9% (36) of events, respectively. Of the 41 explicitly named tools identified in this analysis, R was the most prevalent having been discussed or taught in 12 events (see Appendix B for a complete list of tools). Research data management (RDM) and its subcategories (data-sharing and data management plans) were also very popular with a combined 85 related events. The overarching RDM category was incorporated in 19.8% (48) of all events.

Events raising awareness of products or services were prominently
Library, 2020; Seton Hall University Libraries, 2021), was no exception around the world and generated a shift to online services and virtual open science, and data ethics among others. See Fig. 2 for a complete list of topics and their prevalence throughout all the events.

Data visualization was present in 15.3% (37) of the sessions. These ranged from workshops on how to produce data visualizations to more theoretical approaches including sessions on data visualization best practices as well as critical approaches to the topic (e.g. how data visualizations can perpetuate structural oppression). Tableau was the most popular data visualization tool, represented in seven (7) workshops.

Lectures, panels, and talks featuring data case studies made up 10.7% (26) of all events and included speakers from a variety of disciplines including medicine, linguistics, dance, epidemiology, art, economics, public policy, etc., and academic statuses including graduate students, researchers, and professors.

The topic of social justice and equity, diversity, and inclusion (EDI) was present in 9.1% (22) of the events and included themes such as data feminism (3), data for Black lives (2), and Indigenous data (2). One interesting finding about this topic was that social justice and EDI was weaved into a variety of topics and events spanning almost the entire research data cycle including the use of data tools, data case studies, finding data, data-sharing, data ethics, and data science among others. Similarly, sessions mentioning COVID-19 accounted for 6.6% of events and included titles such as “Finding COVID-19 Data” or “Research Integrity in the Era of COVID-19.”

Remaining topics included data science, qualitative data, open data, open science, and data ethics among others. See Fig. 2 for a complete list of topics and their prevalence throughout all the events.

Discussion

The COVID-19 pandemic presented challenges for academic libraries around the world and generated a shift to online services and virtual events (Fritz et al., 2020; Jaskowska, 2020; Martzoukou, 2020; Walsh & Rana, 2020; Harris, 2021). Love Data Week, which at many institutions used to mainly be an in-person event (Berkeley Research Data Management, 2019; EPFL Library, 2019; Maynooth University, 2019; University of Notre Dame, 2019; Maynooth University, 2020; UC San Diego Library, 2020; University of Notre Dame, 2020; University of Chicago Library, 2020; Seton Hall University Libraries, 2021), was no exception and the shift to a virtual event was present in all the organizations reviewed for this analysis.

The topics for Love Data Week 2021 showed the breadth and depth of the interests and opportunities that fall under the umbrella of the data community. It would appear, indeed, that many do “love data”, and of those who love it, they love it quite a lot. With 242 total events among 57 different organizations, Love Data Week delved deep into the many aspects of data present in the research community, and broadly highlighted the move of libraries from early data providers to a more mature data and research data support role. While libraries comprised the majority of the organizers of Love Data Week 2021 events, it is worth noting that they often collaborated with other departments and units within their organizations. Examples of these collaborations included the Vice-President’s/Vice-Principal’s Office for Research, IT services, funding offices, and research/academic integrity units. This could be indicative of a move toward a more collaborative research ecosystem where skills and knowledge are less siloed within individual departments.

There is currently a paucity of literature on the topic of Love Data Week, which makes it difficult to assess the impact of COVID-19 on the event in terms of activities and organizations. This was further complicated by a potential issue of endogeneity due to the dissolution of the original Love Data Week team and central organizing website in 2020 (pre-COVID-19), which was followed by a more grassroots-style organization of the 2021 event. However, archived documentation shows that 55 organizations participated in the 2019 edition of Love Data Week compared with 37 in 2021 (Coates et al., 2020). Although fewer institutions participated in 2021 when compared with 2019, it would be difficult to isolate the primary causal factor. The dissolution of the original organizing team may have led to a leadership vacuum that caused Love Data Week to lose momentum. It is worth noting, however, that while many institutions chose not to organize Love Data Week events in 2021, many others celebrated it for the first time, for example, McGill University.

The 2021 edition showed a clear preference for workshops, with 57.9% of all events being a workshop of some form. In addition, only 7 of the 140 workshop descriptions explicitly described or mentioned theoretical aspects of data. This suggests that the ongoing view of data within libraries is one of practicality, i.e. the how of data, rather than more theoretical or conceptual aspects, i.e. the why of data. This can be viewed as a part of that ongoing maturity, as libraries move toward data literacy as a separate topic (Beachamp & Murray, 2016) rather than a subfield of information literacy, and thus create more data literacy-specific workshops rather than folding them into general information literacy. Indeed, the development of events such as Love Data Week, GIS Day, and International Open Data Day would improve this awareness among librarians. Further study on this move to data literacy would benefit the field and could lead to an exploration of the praxis potential in critical data literacy, as a mirror to critical information literacy (Downey, 2016).

A comparison of the event type distribution between the full dataset and a dataset excluding the three top organizations offering almost a third of the events, showed no substantial differences. However, institutions offering fewer events tended to offer more interactive events such discussions, drop-in sessions, and immersive experiences. Alternatively, the top three organizations offered more lectures/panels/talks.

It is interesting to note the results showing an even spread of events relating to data across the research lifecycle. Data finding, analysis, visualization, and sharing each represented between 10% and 16% of the events. Of the events, RDM was represented in almost 20% of the events, reflecting the status of RDM as something of a “hot topic” within the data librarianship world currently, as funding agencies focus on RDM best practices (Bill & Melinda Gates Foundation, 2021; Canada, 2021; National Institutes of Health, 2020).

Tool workshops tended toward a classical view of data, with tools such as R and Excel having a combined 16 events. Tableau’s data visualization software was featured in six (7) events, and geospatial data tools of QGIS and ArcGIS showed up in three (3) events each. The
ongoing tension between geospatial data as a separate field or subfield, then, was present, though this may be attributable to geospatial librarians’ own GIS Day. It is perhaps also indicative of the culture of data librarianship that open or free tools were more prevalent than commercial applications.

While the authors were able to identify a “love” for data, this analysis suggests there is no common definition of data among the different organizations. While some organizations only offered events focusing on traditional data tools and methodologies, others widened their definition of data to include workshops on citation management, web design, and general research ethics. While this may have been caused by organizations choosing to include prescheduled workshops in their Love Data Week calendar, it may represent a shift in how organizations define and contextualize “data” as a concept or field.

Topics in the current cultural zeitgeist featured strongly, with events containing elements of data ethics or social justice, or COVID-19, or (in some cases) both. While a cynic could suggest a desire to leverage these topics for user engagement, or simple virtue signaling, one could conversely argue an awareness among data librarians of the need for change, and a willingness to undertake some part of this work. The use of data as an agent of change, though, is one bearing discussion – perhaps as a topic for next year’s Love Data Week.

From an organizer’s perspective, the disagreements between the authors regarding the coding of events highlight the importance of collaboration between different areas of the library to ensure a well-rounded approach to data. The discussions in the third round of data coding fostered better understanding of how different groups may interpret and take advantage of Love Data Week offerings. For example, events involving ethics and/or social justice did not typically explicitly mention ethics or social justice. These codes were mostly inferred by the authors based on the entire description of the event and following intense scrutiny and discussion. One event focusing on Institutional Review Board (IRB) inter-institution collaborative agreements did not mention ethics, human participants, or the purpose of IRBs in the title or description of the workshop. However, two authors of this study have previously submitted proposals to similar review boards for research ethics and one author works closely with the staff at McGill University’s research ethics board to facilitate inter-institutional collaborative research projects. Thus, following discussion, the authors’ prior knowledge of the role of IRBs, and the reasonable expectation that researchers who work with human or animal participants would associate the concept of ethics with IRBs, led to coding this event as relating to ethics.

Having these types of conversations as events are organized may result in events that are both more responsive to the organization’s needs and better attended. For example, events promoting specific research-related procedures, such as inter-institution collaborative agreements or data use agreements, should be explicit about the connection with research integrity and the ethical and legal implications for these practices. Therefore, organizers may benefit from having a diverse group of library staff in planning Love Data Week events in the future.

Ultimately, the Love Data Week results offer insights into current and ongoing issues in data librarianship. This current research is based on a cross-sectional study design, and further investigation is needed to examine trends and shifts in the needs of researchers over time. However, despite the analysis of just one year, the authors’ perspective is that this study is a major contribution of original research. Since the project is novel and there are few existing studies on Love Data Week, the contribution of a new codebook and an analysis of the implementation of that codebook will enable future research in this area to develop. In addition, from a methodological perspective, it is not possible to confirm that all previous Love Data Week events still have a digital presence, thus it would be likely that any datasets of previous years would be missing potentially significant amounts of data. It may be possible to put together a dataset of past events that were registered with the previous central organizers at IUPUI, though our current methodology includes the centrally registered events (at ICPSR) in addition to events that were advertised elsewhere (e.g. solely on listservs, internally on their institutional communications channels, or solely via social media). For this current study, a comprehensive overview of all events can be included since data collection occurred in real-time before, during, and after 2021 Love Data Week.

Conclusion

Love Data Week 2021 presented unique challenges for hosts. Despite the limitations imposed by COVID-19, organizations in North America and Europe were able to offer a combined 242 workshops, lectures, talks, immersive experiences, and more. The wealth of events and event types highlighted creativity within the community and a desire to expand conceptions of what constitutes cutting-edge research data services and data librarianship. At a high-level, the enthusiasm to host Love Data Week 2021 events among organizations demonstrates the perceived usefulness of themed weeks in generating or maintaining community.

In this study, the authors demonstrated that data-related library programming, at least in the context of a relevant themed week, is incorporating more global trends regarding the ways that researchers are engaging technologically and critically with data. For example, the digital tool that was most widely taught during Love Data Week 2021 was R, an open-source statistical programming language. This reflects shifts in both industry and academia toward the adoption of open-source tools more generally (Kross & Guo, 2019, p. 7; Spinellis & Giannikas, 2012). The collection of this “meta” data could be interesting to investigate from a time series perspective.

Future avenues for research could include comparing the 2021 events to those taking place once organizations re-establish their pandemic services. Tracking these events over time could reveal emerging trends related to data services within libraries and could illuminate causal factors driving change. Another potential route for future research could involve surveying Love Data Week organizers to better understand their experiences at their respective organizations and to collect information about attendance levels and event-level feedback from local attendees. A third possible line of inquiry could involve comparing the events of Love Data Week to other themed weeks to further investigate the overall utility of such outreach methods in building community or awareness among researchers.

Love Data Week 2021 occurred during an unprecedented time in which organizations and individual data-related librarians were grappling with profound uncertainty and were highly resource constrained. These circumstances provided the ultimate test for the ability of a themed week to serve its fundamental purpose in fostering community. Based on the analysis of this study, Love Data Week 2021 persevered to provide a sufficient level of outreach and community-building opportunities across a virtual landscape to warrant the continuation of the event in 2022 (Inter-university Consortium for Political and Social Research, 2021).

CRediT authorship contribution statement

Alisa B. Rod: conceptualization (supporting); data curation (lead); formal analysis (equal); investigation (supporting); methodology (equal); visualization; writing – original draft preparation (equal); writing – review & editing (equal). Marcela Y. Isuster: conceptualization (lead); data curation (supporting); formal analysis (equal); investigation (lead); methodology (equal); writing – original draft preparation (equal); writing – review & editing (equal). Martin Chandler: conceptualization (supporting); data curation (supporting); investigation (supporting); writing – original draft preparation (equal); writing – review & editing (equal).
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