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## **An Approach to Data Literacy Classification of COVID-19 Literature**

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# **An Approach to Data Literacy Classification of COVID-19 Literature**

*TREO Talk Paper*

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## **Abstract**

The advent and increased use of the internet results in large volumes of complex data. The complexity of this data highlights the importance of data analysis and computational technologies. However, there exists a challenge on human competencies and skills in understanding, interpreting, interacting, and analyzing complex data. This challenge invokes data literacy as a concept that revolves around the human ability to use data in their daily routines and in thinking and reasoning in solving real-world problems. The expected paper is a systematic literature review investigating the concept of data literacy with data related to the novel Covid-19 pandemic. Therefore, the paper seeks to identify the different data types derived from the Covid-19 data, the technologies used in analysis and classification, and the different user types in this data. From a literature review perspective, such Covid-19 data types as demographic statistics, daily and periodic statistics, locations, travel history, and spread patterns are increasingly being collected, analyzed, and shared. Different technologies are being used in the collection, interaction, manipulation, interpretation of the Covid-19. Some of these technologies include interactive dashboards that provide visual interaction with the data. Through these dashboards, the users can visually interact with a visual representation of different data types. The user types for the Covid-19 data include health care professional government agencies, researchers, and public users. The literature review shows a need for these users to develop competencies and skills in collection, interaction and interpretation of the Covid-19 data.

As a systemic literature review, this paper carries out an extensive review of the existing literature on data literacy in relation to Covid-19. The study follows systemic literature review guidelines provided by Kitchenham and Charters (Kitchenham & Charters, 2007) in reviewing related research papers from ACM Digital Library, EBSCO Host, IEEE Xplore, PubMed, Science Direct, and Web of Science databases. The inclusion criterion involves capturing documents that define the data types, defining the technology types, and defining user types. The search is based on keywords as data literacy, COVID-19, Coronavirus, SARS-COV-2, pandemic, infectious disease, epidemiology, and their different combinations. A total of 492 papers were retrieved in the initial search, of which 487 remained after the removal of duplicated records. This literature review aims to utilize literature related to information system response to Covid-19 and explore the influence of data literacy in the response. Thus, the literature will be categorized based on data type, user type, and information technologies used in the Covid-19 response. The review will then discover how data literacy influences the response. After the classification of the results, the paper hopes to discover limitations, gaps, and best practices in data literacy research and its application in understanding data related to the Covid-19 pandemic. The paper is thus expected to contribute to the existing knowledge base by defining research areas related to data literacy, the data types used in relation to Covid-19, and the types of users that interact with the Covid-19 data. In addition, the study will define the technological tools and information systems used in response to the Covid-19 pandemic.

**Reference**

Kitchenham, B., & Charters, S. (2007). Guidelines for performing systematic literature reviews in software engineering.