

Introduction to the DIRECT minitrack (Disaster Information, Resilience and Crisis Technology) in the Digital Government track – HICSS 58

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Abstract

The DIRECT minitrack is a part of the Digital Government Track. The DIRECT minitrack in HICSS-58 continues the tradition of delivering a high-quality venue for scholars scrutinizing all aspects of design, development, implementation, analysis, operation, evaluation and use of information systems and ICT to strengthen societal resilience. Over the years this minitrack have received interesting, innovative articles and breakthrough visions on disaster management and response, technology supported disaster management and resilience. The DIRECT minitrack is dedicated to being a meeting point for researchers in the broader topic of information technology and information systems for crisis management and security, and focuses on how technologies, information management, data science and artificial intelligence can contribute to support emergency management as part of digital government.

DIRECT paper contributions

The DIRECT mini-track has received a wide range of submissions this year, and the 9 accepted papers cover several interesting, innovative and timely topics. The topics cover themes such as evacuation which are approached differently, from a survey and agent based- modelling, and the use of social media in crisis management. On the technology-related topics the issue of technology usage among older adults, mobile app for epidemic management is addressed. Newer themes such as accessibility of information systems, the potential use of open data for sustainable food security and tourists in disaster management have been

explored in this minitrack. The following is a summary of the papers accepted in the DIRECT minitrack:

Elin Wihlborg and Sofia Hamberg are the authors of the following article: “*How on earth do we get food on the table? - An explorative study of the scattered open government data in the food system and local crises management*”. It highlights the fragmented nature of open data on food production and supply in Sweden, emphasizing the need for standardized data for effective governance and collaborative efforts to ensure sustainable food security. The article underscores the significance of a network-based sharing economic model and its implications for policymaking to guarantee sufficient food supply through transparent open government data.

DeeDee Bennett Gayle, Mahsa Goodarzi, Xiaojun Yuan, Mwarumba Mwavita and Salimah LaForce are the authors of an article titled “*Perception of Emerging Technology for Emergency Preparedness: A Cross-Sectional Study*”. The study focused on assessing the preparedness levels of individuals across hazards and their willingness to use emerging technology for disaster preparedness, particularly emphasizing older adults. Findings revealed varying perceptions of preparedness across hazards, with older adults showing openness to using unfamiliar technology for disaster preparedness. The study highlighted the importance of tailoring emergency preparedness efforts and technology adoption strategies to different age groups and abilities to enhance overall disaster readiness.

The article written by **Rob Grace, Feifei Pang and Hyeong Suk Na** titled “*Survey of Social Support Networks and Evacuation Intentions among*

Households in Houston, Texas” discusses social support networks for evacuation during disasters like hurricanes. The finding shows that variations in social support availability and network size influenced evacuation decisions. Factors influencing evacuation choices included accommodation availability, financial cost, transportation, traffic congestion, familiarity with the destination, and advice from family and friends. The research highlighted the importance of accurate simulation of evacuation behaviors and support for household evacuation planning based on social support insights.

In their article titled: “*Mining Local Social Media Data for Public Information Work: Insights from the COVID-19 Pandemic*”, **Lise Ann St. Dennis and Amanda Lee Hughes** discuss the use of local social media data during the COVID-19 pandemic for public information work, focusing on Twitter (X) activity in Colorado and categorizing tweets into reports on COVID-19, social distancing discussions, and broader pandemic effects. The article emphasizes the challenges in conveying data, interpretation variability, the importance of unified messaging, combating misinformation, leveraging social media, engaging with local influencers, understanding the interplay between public health and governance, and the role of machine learning classifiers in crisis response efforts. It highlights the significance of social media as a communication channel during crises, the need for engaging with local perspectives, and real-time public information efforts to combat misinformation and maintain a positive relationship with the community.

Kimsey Zajac, Julia Klein, Charlotte Eißfeldt, Lutz Kolbe wrote an article titled “*Mobile Applications in Epidemic Management: A Comprehensive Taxonomy*”. They discuss the development of a taxonomy for mobile health applications in epidemic management, aiming to classify and analyze existing apps for public health decision makers, researchers, and app developers. The study’s contributions include the development of the first taxonomy that allows for the meaningful classification of mHealth applications for epidemic management. This taxonomy offers detailed insights into smartphone apps within the context of epidemic management, enabling researchers to classify apps consistently, compare research findings, and identify gaps in the development of epidemic management apps.

Kirsti Nasæger Nesse, Sindre Broby Foss, Terje Gjørseter and Jaziar Radianti wrote an article titled “*Are “Crisis Information Support Systems” Barrier-Free? Analysis of Technology-Induced Barriers to Situational Awareness.*” the paper is the

comprehensive analysis and categorization of barriers to situational awareness (SA) in crisis management information systems. The study identified a total of 43 barriers and themes, classifying them under the main themes of Cognitive, Physical, and Technological barriers. The paper emphasizes the importance of understanding these barriers to enhance SA, decision-making, and crisis response effectiveness, and recognition of the interplay between different barriers and the need to address situational disabilities.

In the article titled “*Tourists as a Vulnerable Group in Emergency Management: An Air Raid and Shelter Scenario*”, **Jaziar Radianti, Stella Polikarpus and Terje Gjørseter** discusses the vulnerability of tourists in emergency management scenarios. They argue on the need to include tourists in emergency plans and address their vulnerabilities, awareness, and biases in disaster situations. The study proposes frameworks to understand tourists’ vulnerabilities, biases, and situational disabilities, aiming to enhance emergency management plans by involving tourists in emergency plans for air raid scenarios near war zones.

Hossein Moradi, Rouba Iskandar, Sebastian Rodriguez, Dharendra Singh, Julie Dugdale, Dimitrios Tzempelikos, Athanasios Sfetsos contribute an article titled “*A Framework for Constructing Agent-based Models for Evaluating Emergency Evacuation Procedures; A Case Study Applied to Egaleo, Greece*”. The article discusses the complexity of emergency evacuations during natural hazards and the challenges faced by emergency management services in understanding and improving evacuation procedures. It emphasizes the importance of considering interconnected factors like infrastructure, population demographics, evacuation policies, hazard models, and human behavior in developing effective evacuation strategies. The introduction also highlights the use of agent-based models (ABM) to simulate human behaviors during emergencies and the application of a comprehensive framework in evaluating community evacuation plans.