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The reciprocal relationship between passive social networking site (SNS) usage and users' subjective well-being / Jin-Liang Wang, Detlef H. Rost, James Gaskin, & Douglas A. Gentile

Abstract: Prior studies have found an inconclusive relationship between social networking site usage and users' subjective well-being. Passive SNS usage may be detrimental to subjective well-being, because it cannot provide social support and may evoke envy and jealousy. Conversely, it is also possible that lower subjective well-being may predict higher passive SNS usage, which can be used as a means to relieve stress. To examine this reciprocal process, a two-wave study among a sample of Chinese college students was conducted (N=350 at time 1, 265 at time 2). Data were analyzed with structural modelling. Cross-lagged analysis indicated that passive SNS usage at time 1 predicted a decrease in subjective well-being at time 2. Lower subjective well-being at time 1 also predicted an increase in passive SNS usage at time 2. These findings deepen our understanding of the complicated association between SNS usage and well-being, and has implications for how to help individuals use SNS healthily.

Crisis communications in the age of social media: A network analysis of Zika related tweets / Loni Hagen, Thomas Keller, Stephen Neely, Nic DePaula, & Claudia Cooperman

Abstract: While emerging technologies such as social media have demonstrated value for crisis communications, significant question remain regarding how these tools can be most effectively leveraged to facilitate the flow of valid information under crisis conditions. In an effort to address these issues, this paper examines the use of Twitter during the 2015-16 Zika virus outbreak in the United States. Particular attention is paid to network structures within the Zika conversation and how different actors and communities contribute to the flow of information throughout the broader Twitter community. Public-facing organizations can benefit from a deeper understanding of the nature and structure of spontaneously occurring communities on social media as well as the types of content that they create and circulate. As such, these findings have significant implications for the development of effective social media strategies during natural disasters and public health emergencies. In particular, this analysis identifies several predominant themes communicated through Zika related tweets, as well as a number of distinct communities and influential actors. The findings suggest that respected political actors, public institutions, as well as those with valid scientific credentials can help to facilitate the flow of accurate and vital information across disparate communities.

Web surveys by smartphones and tablets: Effects on data quality / Roger Tourangeau, Hanyu Sun, Ting Yan, Aaron Maitland, Gonzalo Rivero, & Douglas Williams

Abstract: Does completing a web survey on a smartphone or tablet computer reduce the quality of the data obtained compared to completing the survey on a laptop

computer? This is an important issue, since a growing proportion of web surveys are done on smartphones and tablets. Several earlier studies have attempted to gauge the effects of the switch from personal computers to mobile devices on data quality. We carried out a field experiment in eight counties around the United States that compared responses obtained by smartphones, tablets, and laptop computers. We examined a range of data quality measures, including completion times, rates of missing data, straightlining, and the reliability and validity of scale responses. A unique feature of our study design is that it minimized selection effects; we provided the randomly determined device on which respondents completed the survey after they agreed to take part. As a result, respondents may have been using a device (e.g., a smartphone) for the first time. However, like many of the prior studies examining mobile devices, we find few effects of the type of device on data quality.

Design heuristics for effective smartphone questionnaires / Christopher Antoun, Jonathan Katz, Josef Argueta, & Lin Wang

Abstract: Design principles for survey questionnaires viewed on desktop and laptop computers are increasingly being seen as inadequate for the design of questionnaires viewed on smartphones. Insights gained from empirical research can help those conducting mobile surveys to improve their questionnaires. This paper reports on a systematic literature review of research presented or published between 2007 and 2016 that evaluated the effect of smartphone questionnaire design features on indicators of response quality. The evidence suggests that survey designers should make efforts to "optimize" their questionnaires to make them easier to complete on smartphones, fit question content to the width of smartphone screens to prevent horizontal scrolling, and choose simpler types of questions (single-choice questions, multiple choice questions, text-entry boxes) over more complicated types of questions (large grids, drop boxes, slider questions). Based on these results, we identify design heuristics, or general principles, for creating effective smartphone questionnaires. We distinguish between five of them: readability, ease of selection, visibility across the page, simplicity of design elements, and predictability across devices. They provide an initial framework by which to evaluate smartphone questionnaires, though empirical testing and further refinement of the heuristics is necessary.

Prospect for knowledge in survey data - an artificial neural network sensitivity analysis / Patrick Weber, Nicolas Weber, Michael Goesele, & Ruediger Kabst

Abstract: Policy making depends on good knowledge of the corresponding target audience. To maximize the designated outcome, it is essential to understand the underlying coherences. Machine learning techniques are capable of analyzing data containing behavioral aspects, evaluations, attitudes and social values. We show how existing machine learning techniques can be used to identify behavioral aspects of human decision making and to predict human behavior. These techniques allow to extract high resolution decision functions that enable to draw conclusions on human behavior. Our focus is on voter turnout, for which we use data acquired by the European Social Survey on the German national vote. We show how to train an artificial expert

and how to extract the behavioral aspects to build optimized policies. Our method achieves an increase in adjusted R^2 of 102 percent compared to a classic logistic regression prediction. We further evaluate the performance of our method compared to other machine learning techniques such as support vector machines and random forests. The results show that it is possible to better understand unknown variable relationships.

Profiling cybercriminals: Topic model clustering of carding forum member comment histories / Alex Kigerl

Abstract: Cybercrime has become a growing business. The marketplaces for such businesses tend to be online forums. Much of the research on carding forums has been qualitative, but there have been quantitative analyses as well. One such type of analysis is topic modeling, a clustering technique that groups forum users according to the textual comments they leave. However, this type of research so far has been exclusively quantitative, without qualitatively examining the topics. The following study attempts to add to this research by analyzing the comment histories from 30,469 users from three carding forums. The results have revealed that users belong to one or more of 21 different topics. The topics are grouped into six broader categories, consisting of a customer base, identity fraud market, crimeware market, free content market, and two others. Descriptives are provided displaying how the topics are distributed across the three websites and directions for future research are discussed.

Automated solutions for crowd size estimation / Muhammad Waqar Aziz, Farhan Naeem, Muhammad Hamad Alizai, & Khan Bahadar Khan

Abstract: The crowd phenomenon frequently occurs in dense urban living environments. Crowd counting or estimation helps to develop management strategies such as designing safe public places and evacuation plan for emergencies. These strategies are different depending upon the type of event such as political and public demonstrations, sports and religious events. However, estimating the number of people in crowds at closed or open environments is quite challenging because of the dynamics involved in the process. In addition, crowd estimation itself poses challenges due to randomness in crowd behavior, motion and an area's geometric specifications. Crowd behavior as well as the area parameters is studied before suggesting any possible technological solution for managing a crowd. This article presents a theoretical understanding of the major crowd size estimation approaches that cannot be achieved through the study of existing survey papers in this area. Because, the existing survey papers focus on particular technologies/ specific areas with no or brief description of the involved steps. Besides, this article also highlights the strength and weakness of crowd size estimation solutions and their possible applications. It is, therefore, believed that the provided information would assist in developing an intelligent system for crowd management.

Reports and communications

Making academic social capital visible: Relating SNS-based, alternative and traditional metrics of scientific impact / Christoph Lutz and Christian Pieter Hoffmann

Abstract: The reliable assessment of individual faculty members' contributions is a key challenge in the governance of research institutions. Traditionally, scientific impact is estimated based on bibliographic analyses. With online platforms, particularly social media, gaining popularity among academics, new opportunities for the analysis of scientific impact arise. Proponents of the "altmetrics" approach hold that both general purpose social media as well as services tailored to the scientific community allow for a range of usage metrics that may inform scientific impact assessment. We propose that relational analyses of social media platforms may shed new light on these understudied dimensions of scientific impact and may enrich assessment efforts. Based on a sample of Swiss management scholars active on ResearchGate, we conduct a social network analysis, derive relational metrics, and correlate these metrics with bibliometrics, webometrics, and altmetrics to gauge their potential to inform scientific impact assessment, specifically in business and management research.