



Ben-Gurion University of the Negev
Jacob Blaustein Institutes for Desert Research
The Swiss Institute for Dryland Environmental and Energy Research
Mitrani Department of Desert Ecology

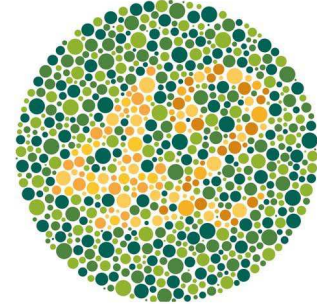
Seminar

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Information Quality

The Potential of Data and Analytics
to Generate Knowledge



Ron S. Kenett • Galit Shmueli



WILEY

Tuesday, March 14, 2017, 12:00

Seminar Room, Old Administration Building

Participants are invited to meet the seminar speaker at the MDDE meeting room immediately after the seminar (~ 13:00). Please bring your lunch; snacks will be provided.

**Reproducibility: An important question for
researchers and science**

The question of reproducibility of research outcomes is discussed now in the open press with a potential negative impact on science as a whole. In dealing with this question, from a statistical view point, several methodological advances have been proposed (like FDR) and several clarification attempts have been published (e.g. the ASA statement on the p value). These attempts seem to only partially address the rising concerns of the public and research funding agencies.

In this talk, we expand on the idea of generalizability of research findings by referring to Type S errors proposed in Gelman A. and Carlin J. *Beyond power calculations: Assessing Type S (sign) and Type M (magnitude) errors, Perspectives on Psychological Science, Vol. 9(6), pp. 641–651, 2014*. The talk will first discuss various types of statistical errors and then show how Type S errors and directional FDR methods fit with the generalizability approach proposed in Kenett R.S. and Shmueli G. *Clarifying the terminology that describes scientific reproducibility, Nature Methods, Vol. 12(8), p 699, 2015*. An example from research in localized colon cancer diagnostics will be used to demonstrate the approach (Bloch M, Kenett RS, Jablonowski I, Wheatley M, Yavin E and Rubinstein R. *A multifactorial analysis of complex pharmaceutical platforms: an application of design of experiments (DoE) to targetable polyacrylamide and ultrasound contrast agents, Polym. Adv. Technol., 26, 898-905, 2015*).