

GuidelinesForScience.com*

Directors

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Improving Management Science: Problems and Solutions

Scott Armstrong presented the Guidelines for Science at the *Global Marketing Conference at Hong Kong* on July 22, 2016 in his paper titled "Improving Management Science: Problems and Solutions". The conference paper slides are available, [here](#). A draft working paper version of the paper is available from ResearchGate, [here](#).

* Site under development

Criteria for Useful Science Checklist

| | | |
|---|------------------|--|
| Paper title: | Reviewer: | Date: / / |
| <p>The task: Raters should spend no more than 15 minutes skimming the paper in order to be able to assess compliance with the useful science criteria below. As a rater, you must be convinced of the paper's usefulness by clear descriptions of the research process, findings, and conclusions^b. Check True (T) if the research complies, not applicable (na), or False/Unclear (F/?) if not or if you are unsure.</p> | | |
| <p>Assess compliance with lettered items under each criterion, below. Then assess whether criteria 1 through 8 are true based on compliance with the associated items. Do not speculate.</p> | | <p>Complies T na F/?</p> |
| 1. Design was objective (unbiased by advocacy for a preferred hypothesis) | | |
| a. All reasonable hypotheses, including the "no change" hypothesis, were represented fairly in the design | | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 2. Findings are useful (can be applied to achieve better outcomes) | | |
| a. Importance of problem explained in the title, abstract, result tables, or conclusions | | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| b. Findings provide improved prediction, decision-making, policy, or methods | | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| c. Directional or effect size findings are presented | | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| d. Directional or effect size findings are shown to be surprising to practitioners or researchers | | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 3. Prior scientific knowledge was comprehensively reviewed and summarized | | |
| a. Search procedures for prior useful scientific knowledge were objective and comprehensive | | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| b. Checked with cited authors that summaries of substantive findings and references were correct | | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| c. Checked with cited authors that no key studies are overlooked | | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 4. Disclosure is comprehensive (sufficient for understanding and replication) | | |
| a. Prior hypotheses clearly described (e.g. directions and magnitudes of relationships; effects of conditions) | | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| b. Revisions to hypotheses and conditions are described | | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| c. Methods are fully described and easy to understand | | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| d. Data are easily accessible using information provided in the paper | | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| e. Other information needed for understanding (e.g. acknowledgements, shortcomings, potential biases) provided | | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 5. Data are valid (true measures) and reliable (repeatable measures) | | |
| a. Data were shown to be relevant to the problem | | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| b. All relevant data (multiple measures) were used to help ensure validity and compensate for biases | | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| c. Longest available time series used when analyzing time series data | | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| d. Reliability of data was assessed | | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 6. Methods were valid (proven fit for purpose) and simple | | |
| a. Methods were shown to be valid for the problem, unless obvious to all intended readers, users, and reviewers | | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| b. Multiple validated methods were used | | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| c. Methods used cumulative scientific knowledge explicitly | | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| d. Methods were sufficiently simple for all potential users of the findings to understand | | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 7. Experimental evidence was used to test all reasonable alternative hypotheses | | |
| a. All reasonable hypotheses were compared using experimental evidence under explicit conditions | | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| b. Predictive validity of hypotheses on effect sizes were tested using out-of-sample data | | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 8. Conclusions are consistent with the evidence | | |
| a. Conclusions are logically consistent with the evidence presented in the paper | | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| b. Conclusions contribute to cumulative scientific knowledge on the problem addressed by the paper | | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |

Complied with [] out of 8 criteria

^aAn electronic version of this checklist is available at GuidelinesforScience.com.

^bResearchers should consult [Armstrong & Green's "Guidelines for Science"](#) and rate their paper against this checklist before submitting.