Replication research’s disturbing trend

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Abstract

Researchers express concern over a paucity of replications. In line with this, editorial policies of some leading marketing journals now encourage more replications. This article reports on an extension of a 1994 study to see whether these efforts have had an effect on the number of replication studies published in leading marketing journals. Results show that the replication rate has fallen to 1.2%, a decrease in the rate by half. As things now stand, practitioners should be skeptical about using the results published in marketing journals as hardly any of them have been successfully replicated, teachers should ignore the findings until they receive support via replications and researchers should put little stock in the outcomes of one-shot studies.

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Since the appearance of Hubbard and Armstrong’s (1994) article concerning the need to publish more replications in the managerial sciences, a number of developments bode well for an increasing presence of replications in the literature. These good signs include the publication of other papers in various marketing and management areas emphasizing the vital role of replication research (e.g., Hubbard and Vetter, 1996; Hunter, 2001; Madden et al., 1995; Singh et al., 2003; Tsang and Kwan, 1999; Wells, 2001). Moreover, under Arch Woodside’s instigation (Easley and Madden, 2000, p. 1; Easley et al., 2000), a special issue of the Journal of Business Research (2000) on topic of replication made the JBR the first major business journal to focus attention on the importance of such work.

Perhaps more importantly, changes are now in place in the editorial policies of leading marketing and management science journals aiming at facilitating the publication of replications. These new policies include Winer’s (1998) revival of the “Research Notes and Communications” section of the Journal of Marketing Research, and Mick’s (2001) introduction of a “Re-Inquiries” section in the Journal of Consumer Research. Further, in an extended editorial on the issue in the Academy of Management Journal, Eden (2002, p. 841) wrote that sound management practices would be greatly aided by “…a large number of high-quality replication studies.”

In light of the above developments, this article reports on an extension of Hubbard and Armstrong (1994) — hereafter H&A. The goal is to answer the following question: what has happened to the publication rate for replications and extensions in marketing in the years following their study?

1. Definitions and method

The definitions of the central terms in this study are in line with those employed by H&A (1994, p. 236). A replication is defined as “a duplication of a previously published empirical study that is concerned with assessing whether similar findings can be obtained upon repeating the study.” Likewise, a replication with extension is “a duplication of a previously published empirical research project that serves to investigate the ability to generalize earlier research findings.” Note that this latter goal of determining the range of conditions under which the findings do and do not hold up can also be addressed by studies in which the author(s) conduct(s) a series of experiments within the same...
article. Unfortunately, such works lack independent assessment. Therefore, following H&A, this account incorporates only replications that were published as independent papers.

The frequency of replications appearing in the *Journal of Marketing (JM)*, *Journal of Marketing Research (JMR)*, and the *Journal of Consumer Research (JCR)* is estimated based on a census of all empirical articles published in them for the period 1990–2004. The census includes a total of 1389 such contributions. Next, two teams, each headed by one of the authors, independently classified all of these works to determine the publication incidence of replications and extensions. Classification results between the two teams were then compared. If a disagreement occurred, the two teams discussed the situation with an eye to resolving any differences. This process saw an 88% agreement rate between the two teams.

In a further attempt to verify the proper quotation, all first-time authors of the replication studies in our sample were contacted, as well as authors of all other papers that we referred to. 52 authors were contacted by email and 21 of them responded. They all indicated that their work is referred to. 52 authors were contacted, as well as authors of all other papers that we referred to. 52 authors were contacted by email and 21 of them responded. They all indicated that their work is properly cited.

### 2. Frequency of replications

Table 1 shows the present findings on the publication incidence of replication research in marketing, and compares them with those of H&A. Whereas H&A estimate that an average of 2.4% of empirical research papers published in *JM*, *JMR*, and *JCR* for 1974–1989 are replications with extensions—a figure they regarded as too low—the average for these same three journals for 1990–2004 has fallen to 1.2% (i.e., only 16 extensions out of 1389 empirical articles). This downward trend applies to each of the journals: *JM* (3.4% to 1.2%), *JMR* (1.9% to 0.6%), and *JCR* (2.3% to 1.7%).

Some research indicates that there are often differences in the results of original and replication studies (e.g., Hubbard and Vetter, 1996; Reid et al., 1981). In marketing, H&A find that only 15% of extensions confirmed initial outcomes, 25% provided partial support, and 60% conflicted with their predecessors. In comparison with the study by H&A, this follow-up showed that that of the 16 replications, 44% confirmed earlier results, 31% provided partial support, and 25% found no support at all for the results of the original study. While these findings are not as severe as with H&A, they nevertheless reinforce the importance of performing replications. No obvious explanations exist for these differences in outcomes between the two studies.

A comparatively brighter picture emerged when analyzing the incidence of replications featured in the *Journal of Business Research*, whose editorial policy is sympathetic toward such work. Of the 861 empirical articles published in *JBR* between 1990 and 2004, 2.8% were replications with extensions, a figure marginally higher than H&A’s 2.4% (Table 1).

To determine whether the lack of published replications applies only to U.S. based journals, the study includes examining the leading German marketing journal, *Marketing ZFP (MZFP)* over the period 1990–2004. Results indicate that the paucity of replication research witnessed in American journals is mirrored in Germany, where a mere 0.6% of MZFP’s empirical articles dealt with this work (Table 1).

Finally, across all five journals for the period 1990–2004, only 41 of 2409 empirical articles, or 1.7%, qualified as replications with extensions (Table 1). While it is difficult to say what the optimal rate of replication is, this rate appears to be low. Consider an analogy to medicine. What if less than 2% of the studies attempting to verify claims about medical treatments had been replicated?

### 3. Practical solutions to the lack of replications

To encourage the growth of replications in marketing’s empirical literature, the data and methods used in the original studies should be made available on the Internet concurrent with a paper’s publication. Traditionally, supporting information of this nature has been difficult to obtain (see Hubbard and Little, 1997). This procedure may require some effort by the authors, but the effort is well worth it. Gleditsch et al. (2003), in their analysis of 416 papers published in the *Journal of Peace Research*, find that papers offering data in any form were cited twice as often as comparable papers without such an offer. (Their study controls for many variables, such as type of article, co-authorship, age of paper, length of paper, and characteristics of author.)

It requires active participation by a journal’s editor to ensure that the data and methods are archived. The *Journal of Money, Credit and Banking (JMCB)* has long had a policy that authors must deposit the data and code used for papers they publish. However, McCullough et al. (in press) find that of 150 empirical articles, sufficient information for replication is provided for only 10% of them. A key barrier is that in many cases the necessary data and methods are not archived. For example, the rate of archiving is only 3% for *JMCB* papers published from 2001 through 2004.

A similar editorial policy is applied by the *Journal of Conflict Resolution*. That journal created a dedicated website on
which all necessary materials have to be made available for replication purposes. Since the first issues of 2002, the authors must sign that they have met this policy as condition of publication (Russett, 2003).

Fortunately for editors, compliance with archiving is now simpler than it has been previously. Authors can be required to supply footnotes showing how to find the data and methods on the Internet. This highlights the availability of the information and also enables the editor to download the materials on the journal’s website. This procedure is currently mandated by journals such as the American Journal of Political Science.

Editors might, upon publication, identify important articles that should be replicated/extended, and invite designated researchers to do so. These replications would be accorded special publication status.

Unsolicited proposals could be reviewed as a basis for replication studies. In addition, competent replications that are submitted through traditional channels might be guaranteed some manner of publication. This might be a short printed version along with the author’s reply, with details on the Internet, to be followed by open peer review. Important replications would receive more print space.

Replications are needed especially for important papers. For example, Ioannidis (2005) finds that replications are conducted on about 75% of highly cited papers in medicine (in a sample from 1990 through 2003). Additional emphasis on this kind of scholarship can also be provided by appointing a replications editor. This has been done, for instance, at the Journal of Applied Econometrics.

Of course it is clear, that the above suggestions for increasing the amount of replication research in journals are unlikely to be effective if editors, reviewers, and researchers devalue this kind of work. Many seem to believe that this is a mundane form of research, one that is synonymous with “merely checking” others’ results, and therefore denigrate its worth. However, the discovery of empirical regularities is made possible only by replication with extension research.

4. Conclusions

Given the favorable reaction over the past decade to calls for more replications, the initial expectation was that a greater frequency of them would be published in JM, JMR, and JCR for the period 1990–2004 than were found for 1974–1989. However, the percentage of replications was published over the latter period dropped by 50%.

A number of strategies to promote replication research can be endorsed. These include:

- Using footnotes to direct readers to data and methods (in enough detail to permit direct replication) on the Internet
- Inviting replications of important papers
- Evaluating research proposals for replications with an eye to their subsequent publication
- Appointing replications editors
- Publishing all competent replications.

Scientific findings rest upon replication. Few results in marketing have been successfully replicated. Given these results, practitioners should be skeptical about making decisions based on the findings of the predominantly single-shot studies reported in the leading marketing journals. Teachers should also be wary of putting much faith in such results in classroom lectures. Finally, many researchers fail to appreciate the idea that in the absence of replication research the behavioral and management sciences rest on weak foundations.

Appendix A

Replications studies in JM, JMR, JCR, JBR, MZFP from 1990–2004


References


Eden Dow. Replication, meta-analysis, scientific progress, and AMJ’s publication policy. Acad Manage J 2002;45:841–6 [October].
