An Analysis of "Publication Bias" in the Travel, Tourism, and Hospitality Research

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ABSTRACT

This article examines whether studies with favorable or statistically significant outcomes are more likely to be published than studies with null results. Should such a publication tendency be in the form of favoring significant findings exist, then the integrity of science, suggestions and conclusions becomes controversial. This also includes those particularly drawn from meta-analyses and systematic reviews. Drawing on a sample of research articles, an examination was undertaken to determine whether studies reporting significant findings were published more. Additional analyses were conducted to examine the validity of reject/support decisions in relation to null hypotheses tested in these studies. The share of the published articles, in which null hypotheses were rejected, was found to be much larger (81%). Interestingly however, calculated power levels and actual samples sizes of these studies were too small to confidently reject/support null hypotheses. Implications for research are discussed in the concluding section of the article.

INTRODUCTION

Evidence from several studies in different fields (e.g., education, psychology, biomedical etc.) revealed that articles reporting a favorable or statistically significant relation/difference were published more than were studies of similar quality that show negative or "no-difference" results (Dickersin, 1993; Emerson et al., 2010). Negative results refer to finding nothing of statistical significance or casual consequence. Publishing statistically significant findings was found to be 3.4 times higher in studies applying behavioral and social methodologies (Fanelli, 2012). The tendency to publish

research articles *"that appears to support a hypothesis and to refrain from publishing findings that do not, thereby creating opinions about the truth of the hypothesis that may be unduly optimistic"* is called "publication bias" (Medical Dictionary, 2009). This is a prevalent phenomenon "arising from bias in submitting, reviewing, accepting and publishing scientific results" (Moller & Jenions, 2002, p. 580). Since its first recognition by Sterling in 1959, publication bias has been named differently (e.g., file drawer-effect, positive outcome-bias, etc). While the names differ, they all convey bias in dissemination of knowledge (Emerson et al., 2010).

A bias towards the positive and avoidance of negative outcomes may have serious implications on the integrity of knowledge and advancement of research for a number of reasons. Firstly, we as researchers tend to construct hypothesis based on the analysis of the available literature. The presence of publication bias inevitably diminishes the credibility of hypothesis testing because it is based on biased information. Secondly, publication bias has effects on meta analyses and systematic reviews, which are the propellers of scientific progress. If meta analyes include only the published studies with significant outcomes, then outcomes of meta analyses are likely to be flawed and misleading since negative data are not taken into account (Rothstein, Sutton, & Borenstein, 2005). Last but not least, if we are doing scientific research to learn and explain the truth, then we must not ignore the realities of life. If "no effect/relation" is a frequently transpiring fact of life, then almost always finding and reporting positive outcomes contradicts with reality.

Several causes, relating to authors, editors, reviewers may account for publication bias. Among other things, we have reasons to believe that current practices, particularly in relation to null hypothesis testing in which "*p value*" has been taken as the only tool to verify accept/reject decisions could be responsible. Misuses of the p-value and consequently falsely rejecting a null hypothesis at a face value of "p" still appears to be a frequent practice (Cashen & Geiger, 2004; Deng, 2005; Egger et al., 2000; Mone et al., 1996; Wilkinson et al., 1999). There is an increasing concern that in modern research false findings may be the majority (Yüksel, 2017). Surprisingly however publication bias and its reasons have received little attention in tourism, travel and hospitality literature. Based on limited research on the topic, the present review primarily aims to examine whether the share of the published studies reporting significant outcomes is larger than studies reporting insignificant outcomes (i.e., failing to reject the null hypothesis). The second objective is to explore whether researchers in the TTH field follow statistical recommendations and refer to the suggested statistical power levels and effect sizes in order to correctly reject/support a null hypothesis.

The following section is designed in three-parts. The first part deals with the concept of publication bias, and discusses its antecedents and consequences. The methodology is explained next and the findings are discussed. The final section includes suggestions and research implications.

LITERATURE REVIEW

Publication bias has been a subject, occupying scholars' attention in social sciences for a long time. Sterling (1959), examining articles involving hypothesis testing

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