



## ARTICLE

# Revisiting some “established facts” in the field of management<sup>☆</sup>



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Received 23 October 2013; accepted 20 November 2013  
 Available online 22 January 2014

## JEL CLASSIFICATION

M1;  
 M5;  
 C01

## KEYWORDS

Outliers;  
 Performance;  
 Meta-analysis;  
 Experimental research;  
 Scientific progress

**Abstract** Although management is now becoming a mature scientific field and much theoretical and methodological progress has been made in the past few decades, management scholars are not immune to received doctrines and things we “just know to be true.” This article revisits an admittedly selected set of these “established facts” including how to deal with outliers, conducting field experiments with real entrepreneurs in real settings, the file-drawer problem in meta-analysis, and the distribution of individual performance. For each “established fact,” I describe its nature, the negative consequences associated with it, and best-practice recommendations in terms of how to address each. I hope this article will serve as a catalyst for future research challenging “established facts” in other substantive and methodological domains in the field of management.

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## 1. Introduction

Management is now becoming a mature scientific field. Although its beginnings were heavily influenced by other disciplines such as psychology, economics, and sociology (Agarwal and Hoetker, 2007; Molloy et al., 2011), the field of management now develops its own theories (Colquitt

and Zapata-Phelan, 2007; Shepherd and Sutcliffe, 2011). Moreover, the field also develops its own methodological approaches mainly described in the Academy of Management sponsored journal *Organizational Research Methods*. In addition, although the field of management has become increasingly specialized, as indicated by groups of scholars who focus mainly on the individual and team levels of analysis (e.g., organizational behavior, human resource management) and those who focus on the firm and industry levels of analysis (e.g., business policy and strategy, entrepreneurship), there is now a trend toward the development of more comprehensive and integrative theories that address organizational phenomena from multiple levels of analysis (e.g., Aguinis et al., 2011a; Foss, 2010, 2011; Van de Ven and Lifschitz, 2013). Given the progress

<sup>☆</sup> Portions of this manuscript are based on a plenary address delivered at the meeting of the Asociación Científica de Economía y Dirección de la Empresa – Strategy Chapter, Universidad de Salamanca, Spain, January 2013. I thank Isabel Suárez González, Gustavo Lannelongue, and Lucio Fuentelsaz Lamata for comments on a previous draft.

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attained over the past few decades, the evidence-based management movement now offers important theory-based insights that can be used to improve management practice (Rousseau, 2012). In short, as we approach the 25th anniversary of the foundation of the of the Spanish Asociación Científica de Economía y Dirección de la Empresa (ACEDE) in the year 2015, we can conclude that much progress has been made since the publication of Gordon and Howell's (1959) report sponsored by the Carnegie Ford Foundation scolding business schools for their lack of scholarly rigor.

## 2. “Established facts” in the field of management: facts or urban legends?

Former Academy of Management President Bill Starbuck asserted that “professors of management are people of superior abilities. . .” (Barnett, 2007: 126). However, in spite of the scientific progress made by the field of management and similar to the general population, management scholars are not immune to received doctrines and things we “just know to be true.” In many cases, these issues are “taught in undergraduate and graduate classes, enforced by gatekeepers (e.g., grant panels, reviewers, editors, dissertation committee members), discussed among colleagues, and otherwise passed along among pliers of the trade far and wide and from generation to generation” (Lance, 2011: 281). Moreover, these “established facts” have in many cases reached the status of myth and urban legends, similar to those about alligators living in the sewage system of the city of New York, or about King Juan Carlos I of Spain riding a motorcycle and helping a stranded motorist (Brunvand, 2012).

The existence of these myths and urban legends is expected as part of a scientific field's growing pains (Lance and Vandenberg, 2009). Moreover, the reason for their existence is that there are kernels of truth underlying each of these “established facts.” However, in all cases, the kernels of truth have been forgotten, exaggerated, or somehow twisted. Many of us have been at the receiving end of these “established facts” when a journal reviewer, dissertation committee members, or professor in a doctoral seminar has indicated that, for example, we should implement a particular methodological procedure but the rationale is not fully explicated. Admittedly, many of us have also been at the giving end of these “established facts” in conversations with peers and doctoral students, and also in our roles of journal reviewers. These issues include both substantive to methodological topics and range from micro- to macro-level topics. Next, I revisit an admittedly selected set of these “established facts” by explaining their nature, the negative consequences resulting from each, and best-practice recommendations regarding how to address each. As a preview, Table 1 includes a summary of the issues addressed in the remainder of this article. The “established facts” refer to outliers being regarded as data problems that must be fixed, the impossibility of conducting field experiments with real entrepreneurs in real settings, the belief that the file-drawer problem biases meta-analytic conclusions, and the belief that individual performance is best modeled using a normal distribution.

## 3. Outliers are data errors that must be fixed

Outliers are data points that deviate markedly from others. Thus, an outlier can be an individual, team, firm, or any other unit. The existence of outliers is one of the most enduring and pervasive methodological challenges in management research because their presence often has an important and disproportionate impact on substantive conclusions regarding relationships among variables. The important impact of outliers on substantive conclusions has been noted in many management subfields, ranging from organizational behavior and human resource management (Orr et al., 1991) to strategy (e.g., Hitt et al., 1998).

Aguinis et al. (2013) conducted a literature review on outliers involving all articles published between 1991 through 2010 in *Academy of Management Journal*, *Journal of Applied Psychology*, *Personnel Psychology*, *Strategic Management Journal*, *Journal of Management*, and *Administrative Science Quarterly*. As part of their review, they identified 232 articles that mentioned the issue of outliers. One of the main conclusions of this review was that management scholars view outliers as “problems” that must be “fixed.” Usually, this is done by removing particular cases from the analyses. Moreover, Aguinis et al.'s (2013) review also uncovered that it is common for management researchers to either be vague or not transparent in how outliers are defined and in how a particular outlier identification technique was chosen and used. In sum, there seems to be an “established fact” that outliers are a nuisance and must be removed – and the particular process used to do so is often not reported openly and transparently.

The current state of the science regarding how management scholars address outliers has important negative implications (Aguinis and Joo, in press). First, deleting outliers from a dataset simply because they are distant from other units can result in large opportunity costs in terms of uncovering interesting relationships. In other words, some outliers may not be problems that must be fixed; rather, they may be interesting observations worth studying further. Second, lack of transparency in how outliers are defined, identified, and handled diminishes the potential replicability of substantive results, which is required for the advancement of science (Brutus et al., 2013).

So, what should management researchers do regarding outliers? Aguinis et al. (2013) offered two general guidelines. First, choices and procedures regarding the treatment (i.e., definition, identification, and handling) of outliers should be described in detail to ensure transparency – including a rationale for the particular procedures that have been implemented. The second principle is that researchers should clearly and explicitly acknowledge the type of outlier in which they are interested, and then use an identification technique that is congruent with the outlier definition.

In addition, Aguinis et al. (2013) offered more specific recommendation on a sequential process for defining, identifying, and handling three different types of outliers. The first category consists of error outliers, or data points that lie at a distance from other data points because they are the result of inaccuracies. If error outliers are found, the recommendation is to either adjust the data points to their correct values or remove such observations from the dataset. In addition, it is necessary to explain in detail the reasoning

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