



# A meta-analytic review of leadership impact research: Experimental and quasi-experimental studies

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## ABSTRACT

In this study we set out to conduct a comprehensive quantitative research analysis of literature reporting results on the causal impact of leadership by focusing on examining what we refer to as 'leadership interventions.' We defined leadership interventions as those studies where the researcher overtly manipulated leadership as the independent variable through training, assignment, scenario or other means. Our focus included both examining experimental and quasi-experimental as well as lab and field studies conducted in public and private organizations. Our goal was to address a simple question: *do leadership interventions have the intended impact and if so to what degree?* We conducted a comprehensive review of the published and unpublished literature and uncovered 200 lab and field studies that met our criterion as leadership intervention studies. We report here the findings of a series of meta-analyzed effects comparing the relative impact of leadership interventions across intervention types, leadership theories, and several common dependent variables. Overall, leadership interventions produced a 66% probability of achieving a positive outcome versus a 50–50 random effect for treatment participants, but this effect varied significantly when assessing moderators such as type of leadership theory.

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## 1. Proposing an integrative view for evaluating leadership impact research

Numerous theories of leadership offer a broad array of explanations regarding how leadership impacts follower motivation, thinking, behaviors, and performance. Yet, we know that much of the accumulated research has been based on field survey research versus using experimental designs. Consequently, the conclusions that can be drawn from this literature are limited in terms of being able to verify and validate the cause and effect relationships proposed in the various theories of leadership (Yukl, 1998, 2002).

Another common criticism of leadership research has focused on the research methods used to examine leadership impact on follower performance. For example, Bass (1990) noted that much of the accumulated research is beset with the over use of small convenience samples with cross-sectional designs. Lord and Hall (1992, p. 153) noted, "too much research in the past has attempted to probe the complex issues of leadership using simple bi-variate correlations." Again, these designs limit the conclusions that can be drawn from the accumulated leadership literature for a variety of reasons such as having a high degree of sampling error, lacking temporal precedence, and/or a failure to manipulate leadership as an independent variable in order to examine its impact on performance outcomes.

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Beyond research design and methods limitations, the limited focus used in the majority of prior meta-analyses reported in the literature has restricted the development of a more integrated summary of the leadership literature. These prior meta-analyses have typically limited their reviews to a single leadership theory when examining leadership impact on various outcomes.

As a foundation for building an integrated research base for the current study, we went back to 1981 where we identified the first leadership study using meta-analytical techniques. This study provided a quantitative review of Fiedler's contingency theory of leadership (see [Strube & Garcia, 1981](#)). Over the next 25-year time span we identified 32 meta-analyses conducted in the field of leadership.<sup>1</sup> All of these previous meta-analyses examined one theory, and in many cases one independent variable compared with a limited set of dependent variables/outcomes. For example, [Eagly and Karau \(1991\)](#) focused on gender effects and their relationship to leadership emergence, while for transactional and transformational leadership, prior meta-analyses focused on linking these different leadership styles to outcomes such as performance, rated effectiveness and satisfaction ([Dumdum, Lowe & Avolio, 2002](#); [Judge, Bono, Ilies & Gerhardt, 2002](#); [Judge & Piccolo, 2004](#); [Lowe, Kroeck & Sivasubramaniam, 1996](#)).

Consequently, while prior meta-analyses have consistently provided evidence showing the positive relationships that various leadership styles or orientations have on a range of outcomes, they were typically limited to one theory of leadership. Moreover, further limiting conclusions from most prior meta-analyses is the fact that they did not examine experimental interventions where cause and effect could be determined. The current meta-analytic study adds to the body of leadership literature by examining the effects of leadership experimental research, across a number of leadership theories, while incorporating a range of dependent variables as described below.

### 1.1. A quick look back

Leadership research can be traced as far back as the early part of the twentieth century. Yet, an organized social-scientific approach to studying leadership did not fully emerge until the early 1930s ([House & Aditya, 1997](#)). Systematic investigations into what constitutes leadership effectiveness began in earnest over the next several decades at various centers for research on leadership such as at Iowa during the 1930s and at Michigan and Ohio States in the 1940s to 1950s.

Over the next fifty years, models of leadership evolved focusing on traits and personalities of leaders, the nature of leader-follower interactions, what constituted leader and follower cognitions, perceptions and attribution processes, situational factors and contingencies that moderated the effects of leadership, leader behaviors/styles, task and goal orientations, team and shared leadership, and transformational/charismatic leadership. And as the twentieth century drew to a close, there were also attempts to integrate the various theories and models of leadership into a broader more integrative framework called a “full range theory of leadership” ([Avolio, 1999](#)).

Along with the growth of research on what constitutes leadership style and effectiveness, a number of authors have called for a renewed emphasis on conducting experimental studies to broaden our understanding of the causal effects of leadership on follower affect, cognition, ability, motivation, and performance ([Day, Zaccaro & Halpin, 2004](#); [Day & O'Connor, 2003](#)). Here we define a *leadership intervention* study as one in which the researcher overtly manipulated leadership to examine its impact on some specific intermediate process variables or outcomes. For example, leadership may have been manipulated in either lab or field settings through the use of actors trained to portray specific leadership styles, via leadership scenarios, or as a result of leadership training.

As we note in more detail below, out of the nearly 500 leadership studies initially identified in our review of the leadership literature, less than half ended up meeting our criteria for inclusion in the meta-analysis as they were not interventions testing cause and effect. Most of the approximately 300 research papers dropped from further consideration were either not empirically based or were based on a correlation design without any intervention.

In sum, the guiding purpose for this meta-analytic study was to provide a comprehensive assessment and best estimate of impacts of leadership interventions by obtaining and examining all experimental and quasi-experimental research that have attempted to change and/or develop leadership. Our secondary goal was to then examine more closely the theoretical frameworks, methods, and dependent variables under which experimental and quasi-experimental leadership research varied in its impact in order to develop a base of comparison upon which future leadership research, theory, and practice could build upon. We also identified several research questions that were based on core assumptions in prior leadership models that set the stage for comparing the impacts of different leadership models on various follower outcomes.

### 1.2. Evidence for higher and lower-order effects of leadership impact

Numerous primary studies and meta-analyses have reported positive associations between a range of leadership orientations including initiation of structure, consideration, and transactional and transformational leadership, all with respect to a very broad range of follower outcomes ([Bono & Judge, 2004](#); [Dumdum et al., 2002](#); [Judge et al., 2002](#); [Judge & Piccolo, 2004](#); [Lowe et al., 1996](#)). Yet, as the field of leadership has evolved over the last 20 years, there has been greater attention paid to examining what might be considered higher impact theories or models of leadership, such as charismatic, inspiring and transformational leadership. Indeed, [Bass \(1985\)](#) signaled this shift in terms of a focus on leadership impact, entitling his book, “Leadership and Performance Beyond Expectations.” Bass argued that leadership defined as transformational would augment transactional forms of leadership in predicting performance, thus the choice of the term ‘performance beyond expectations’. This set the stage for distinguishing what [Bryman \(1992\)](#) and [Antonakis and House \(2002\)](#) referred to as more traditional theories of leadership versus the newer leadership theories.

<sup>1</sup> References of all other leadership meta-analyses found and used in meta-analysis are available from the first author.

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