PUTTING SCHOLARLY IMPACT IN CONTEXT: IMPLICATIONS FOR POLICY-MAKING AND PRACTICES

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ABSTRACT

We address business schools' need to develop policies and practices informed by researchers' scholarly impact by offering an improved conceptualization and measure that considers contextual and temporal aspects: the Contextualized Scholarly Impact Index (CSII). We also offer software to calculate individual and institutional-level CSII scores. Our measure of scholarly impact (a) considers impact within the context of the management field, (b) relies on quantity and quality dimensions of research impact, (c) incorporates temporal aspects of impact, and (d) yields scholarly impact scores using the latest data from an inclusive set of 320 influential management journals. CSII provides a transparent and multi-dimensional measure of scholarly impact to inform policy-making, facilitate benchmarking of research impact, and support researchers in understanding and enhancing their scholarly contributions. Our study contributes to policy-making and practices by improving the theoretical conceptualization of scholarly impact; offering a metric for comparing the impact of individual scholars, research groups (e.g., teams, centers, and institutes), and business schools; aiding funding agencies in making informed decisions; assisting in the training and development of faculty and doctoral students; supporting policies for review, promotion, and tenure; and providing critical information for talent management practices including selection, succession planning, and rewards.

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Business schools are currently facing an urgent need to formulate policies and practices based on scholarly impact (Aguinis, Cummings, Ramani, & Cummings, 2020; Bartunek, 2020; Cunliffe & Pavlovich, 2022; Rasheed & Priem, 2020). Such policies and practices include research funding; faculty performance management; training and development; rewards and incentives; and review, promotion, and tenure. Sound policies and practices related to scholarly impact are particularly needed given their implications for researchers' careers, research relevance, and business school sustainability. Moreover, scholarly impact is "one of the strongest currencies" in academia (Aguinis, Suárez-González, Lannelongue, & Joo, 2012: 105) because policies and resulting practices have critical implications for external (e.g., managers, practitioners, decision-makers, and students) and internal stakeholders (e.g., business schools, research groups, and individual scholars).

Adopting a problematization methodology (Alvesson & Sandberg, 2011), we question the underlying assumptions of the existing literature on conceptualizing and measuring scholarly impact and implications for policies and practices. Specifically, we identify problems and offer an improved conceptualization and measure of scholarly impact, the *Contextualized Scholarly Impact Index* (CSII). Explicitly, we question the in-house assumptions (Alvesson & Sandberg, 2011) surrounding the extant conceptualization of scholarly impact as temporal, non-contextual, and largely unidimensional. Our approach is based on theories about performance originating in human resource management and organizational behavior, which posit that performance should be conceptualized and measured *in situ* (Cascio & Aguinis, 2008). Specifically, this theoretical perspective explicitly defines and measures performance based on context and time. As a

preview, our conceptualization of scholarly impact (a) considers scholarly impact within the context of the management field, (b) relies on quantity and quality dimensions of impact, (c) incorporates temporal aspects of impact, and (d) yields scholarly impact scores using the latest data from an inclusive set of 320 influential management journals. To facilitate the implementation of our conceptualization, we offer a freely available software tool that calculates individual (and groups of aggregated individuals such as research groups and centers) and institutional-level scholarly impact.

Our study makes the following contributions to business school policy-making and practices. First, we improve the theoretical conceptualization of scholarly impact based on performance in situ theory. As a result of this theoretical improvement, we can develop and implement better policies and practices. Second, we offer CSII to assist business school leaders (e.g., deans and department chairs) in making informed research investment decisions by providing a valuable metric for comparing the impact of business schools and management scholars across schools within a specific time frame. Third, funding agencies can use CSII to better understand the influence of business schools and scholars and make better-informed decisions. Fourth, CSII can be used to develop milestones for the training and development of faculty and doctoral students and to identify the scholarly impact of doctoral program alumni. Fifth, CSII provides a transparent assessment of scholarly impact and enables better-informed policy-making and practices for review, promotion, tenure, research awards, teaching load reductions, and summer funding. Lastly, CSII can assist in talent management policies and practices such as selection, succession planning, and rewards.

The remainder of our paper is organized into four main sections. First, we describe problems with commonly used conceptualizations and measures of scholarly impact and their

policy and practice implications. Second, we describe CSII and discuss its theoretical and technical development, detailing the underlying theory and the process used to create and validate the tool, validity evidence, and a "user guide" for improved policy-making and practices. Third, we discuss how our conceptualization and measure can better inform policies and practices by utilizing CSII, including evaluating individual researchers, assessing research groups, and measuring impact for entire business schools. Finally, we discuss future research directions for CSII, highlighting the ongoing journey toward improving the conceptualization and measurement of scholarly impact.

PROBLEMS WITH CONTEMPORARY CONCEPTUALIZATIONS AND MEASURES OF SCHOLARLY IMPACT FOR RESEARCHERS: JOURNALS, CITATION COUNTS, AND THE H-INDEX

Extant research highlights a variety of ways to conceptualize and measure scholarly impact. These conceptualizations and measures generally fall under three families of scholarly impact measures for researchers: (a) journals in which scholars publish, (b) citation counts, and (c) h-index. Although each family of measures has positive aspects, we describe their problems next.

Journals

One of the common ways to conceptualize and measure scholarly impact is through journals in which a scholar has published. In other words, publishing in a journal that is considered impactful leads to the inference that the researcher's work is, by extension, also impactful. For example, the UT Dallas list, primarily unchanged in the last 25 years, was created

¹ Some have made a distinction between *internal* scholarly impact (e.g., on other researchers and other members of the Academy) and *external* scholarly impact (e.g., on managers and policymakers). The focus of our manuscript is on internal scholarly impact.

based on which journals had the largest impact factors in the late 1990s (Trieschmann, Dennis, Northcraft, & Nieme, 2000). In an intriguing case of causal reversal, researchers whose work is published in any of these journals are considered impactful (because the journal is on the list) regardless of a journal's contemporary impact factor and whether it is similarly high as when the list was compiled a quarter of a century ago.

Metrics that fall under this family of measures include journal impact factor (IF), Eigenfactor (Mingers & Yang, 2017), CiteScore, SCImago Journal Rank (SJR), and Source Normalized Impact per Paper (SNIP) (Elsevier, 2021; Hourneaux Junior, Hamza, & Santos Jhunior, 2023). IF and Eigenfactor metrics use the Web of Science (WoS) database, while others use the Scopus database. As a result, the values provided by these metrics differ because they use different bibliometric databases. For example, Garfield (2006) developed IF as the most well-known journal metric as a decision-making tool for choosing which journals to include in the WoS database. It is calculated by dividing the number of journal citations by the number of articles published in the past two or five years (Amin & Mabe, 2003; Garfield, 2006). CiteScore, introduced by Elsevier in 2016, is the annual average number of citations to the number of articles published in a journal in the prior three years (Elsevier, 2016). SJR is a measure of journal prestige. It computes the prestige of journals and then normalizes the computation so that users can compare journals. Lastly, SNIP compares each journal's citations per publication with the field's potential number of citations (Elsevier, 2021).

Although useful, employing these journal metrics as a proxy for individual scholarly impact is misleading because these metrics are *journal-level* metrics and, therefore, not appropriate to use at the *individual researcher level* (Ramani, Aguinis, & Coyle-Shapiro, 2022). More precisely, not all articles published in high-IF journals are highly impactful. For instance,

Ramani, Aguinis, and Coyle-Shapiro (2022) found that the Academy of Management Journal's (AMJ) IF was 10.19 in 2020, but 63% of 160 articles published in AMJ received fewer than ten citations, and only 24% of the articles received at least 50% of all citations. Similarly, Kickul, Griffiths, Brännback, and Robb (2023) replicated these results in entrepreneurship journals. They pointed out that approximately 61% of the articles published in four highly influential entrepreneurship journals were misidentified as high quality. Therefore, they recommended evaluating articles based on their own merits rather than relying on the journals in which they were published.

In addition to incorrect interferences, using journals as a proxy for scholarly impact has several problems. First, using journal metrics can create internal funding policies that allocate funds to groups of scholars who solely publish in specific journals (i.e., those that "count"). This implies that scholars would be incentivized to publish in a limited set of journals and alludes to the possibility of important scholarly work outside of those journals being overlooked in funding allocation decisions. Second, its temporal limitation is another problem tainting journal metrics as a proxy for impact. For instance, IF focuses on only the previous two or five years of citations. Universities often use scholarly impact to allocate rewards (e.g., career awards) and identify when to intervene in a professor's career development trajectory (e.g., promotion to full professor or endowed chair). Using journal metrics overlooks valuable research that has had a longer-lasting impact but does not fit into the two or five-year window. For doctoral students, those using university-identified high-IF journals as guideposts for their career development may prematurely focus on publishing in high-IF journals, potentially neglecting the development of other essential scholarly skills, such as learning new and different research methods. Another problem is that the list of highly influential journals is subjective and often differs across

business schools. Therefore, a journal publication the student has worked on for years may not be considered similarly valuable in the business school the student wants to join as a faculty member. Therefore, this narrow focus can imbalance their academic growth and may even limit their future career opportunities.

Citation Counts

Another family of scholarly impact measures is citation counts, which is the number of times research is cited by other scholars (Adler & Harzing, 2009; Aguinis et al., 2012). This family of scholarly impact metrics includes the total number of citations accrued by a researcher's publications, average citations per publication, citation density (e.g., citation rates of publications), the number of highly cited publications, and the proportion of highly cited publications (Mingers & Yang, 2017; Waltman, 2016). Using citation count metrics to assess scholarly impact of individual researchers has several significant problems, which are exacerbated when designing policies and practices.

First, an issue that needs to be recognized is contextualizing citations. Eugene Garfield, a pioneer of modern citation analysis, noted that all citation studies need to be adjusted to account for contextual factors such as field and discipline, given documented different citation practices and patterns (Garfield, 1999; 2006). For example, external funding agencies aiming to allocate resources based on citation counts would be missing an important piece of the equation without considering the different citation practices across academic fields. Specifically, researchers in the natural sciences (e.g., chemistry, genetics, mathematics, physics, and zoology) are cited on average more than three times as often as those in the social sciences (e.g., economics, management, finance, accounting, and psychology) (Harzing & Alakangas, 2016). In addition, funding agencies and decision-makers using citation counts to allocate resources need to know

the context in which the citations were made. For example, it is unknown whether an article was praised for its contributions to theory or, in contrast, it was cited to illustrate a fatal flaw that rendered the study's conclusions invalid and a mistake that should never be repeated in the future (Anderson & Lemken, 2023; Kacmar & Whitfield, 2000). These different citation scenarios clearly have implications for our understanding of the scholarly impact of the work, yet they would all be rewarded similarly if we simply count citations.

Second, using total citations ignores that specific articles can heavily influence these counts. For example, a high citation count can be attributed to only a handful of highly influential articles, known as "one-hit wonders": when a scholar accumulates numerous citations for only one or a handful of articles over time. In addition, the citation distribution is nonnormal, meaning that a minority of articles (i.e., star articles) account for a disproportionate number of citations (Ramani et al., 2022). Interestingly, Ramani et al. (2022) and Larivière and Sugimoto (2019) found that the impact of star articles is almost identical across journals. Specifically, most management articles (i.e., approximately 65%) receive far fewer citations than the IF of the journal in which they were published, with a few articles (i.e., approximately 20%) accounting for at least half of any given journal's total citations. Also related to the impact of a few articles on total citation count, review articles and meta-analyses receive higher citations than regular issue articles (Sanders, Corey, & Worrall, 2023). For example, Aguinis, Dalton, Bosco, Pierce, and Dalton (2011) reported that meta-analyses receive almost three times as many citations compared to empirical articles based on articles published in AMJ from 1963 to 2007. In addition, Conlon, Morgeson, McNamara, Wiseman, and Skilton (2006) found that special issue articles receive higher citations than regular issue articles based on a regression model that controlled for several factors, such as number of authors and journal prominence.

Third, additional problems are associated with using total citations to measure scholarly impact. Almost 40 years ago, Diamond (1986) warned that total citations may incentivize researchers to self-cite and develop citation-exchange relationships with other researchers. Yet another issue with citation counts is that the citations for articles are dynamic, and the half-life of an article's citations is around ten years (Bergh, Perry, & Hanke, 2006), meaning citations do not occur evenly over time. Notably, these traditionally begin slowly, rising to a peak and, after that, reaching obsolescence (Mingers & Burrell, 2006).

Fourth, from a measurement perspective, similar to journal-based metrics, the total citation count is highly influenced by the bibliometric database used to calculate it. For example, databases such as WoS, Scopus, and Google Scholar provide different total citation numbers for the same researchers due to their differential coverage of publications. Specifically, whereas Scopus covers 69 million records from 1788 onward, WoS covers 105 million from 1900, and Google Scholar covers over 380 million records from 1700 to the present (Gusenbauer, 2019). Also, the varying accessibility of these databases implies that they cannot be used by users not affiliated with a university or an institution that has paid the database subscription. Table 1 compares Scopus, WoS, and Google Scholar regarding their type, scope, coverage, data range, accessibility, and limitations.

[Insert Table 1 about here]

The h-Index

The third family of scholarly impact measures is the h-index. Introduced by Argentine-American physicist Jorge Hirsch (2005), a researcher's h-index identifies the h number of publications cited at least h times each. For example, researchers with an h-index of 19 have 19 publications that have received at least 19 citations each. Thus, to attain a high h-index, it is

necessary to receive both many citations and publish many articles. In other words, neither a few highly cited articles (i.e., star articles) nor many papers with only a few citations (i.e., a high volume of publications) will yield a high h-index—both are needed.

Over the years, the h-index family of measures has grown significantly (Bornmann, 2014a). For example, these metrics include the g-index (Egghe, 2006), w-index (Zhang, 2009), A-index, R-index and AR-index (Jin, Liang, Rousseau, & Egghe, 2007), h2lower, h2center, and h2upper (Bornmann, Mutz, & Daniel, 2010), h-index of first-authored papers (Opthof & Wilde, 2009), and h_I (Batista, Campiteli, & Kinouchi, 2006). The g-index is the highest number of g papers receiving at least g² or more citations. By doing so, the g-index increases the sensitivity of the h-index to highly cited papers. Similarly, the w-index assigns different weights to the citations received by different articles, thus improving the sensitivity of the h-index to highly cited papers. The A-index, R-index, and AR-index assess the impact of a group of papers that received the most citations, called the h-core. Regarding h2lower, h2center, and h2upper, they allow quantifying three areas within a researcher's citation distribution. Lastly, the h-index of first-authored papers and h_I aim to reduce co-authors' influence by considering only firstauthored papers or the total number of authors in h number of papers. Despite their apparent differences, a meta-analysis (Bornmann, Mutz, Hug, & Daniel, 2011) found that 37 h-index variants are highly intercorrelated, ranging from 0.80 to 0.90.

Several problems have been encountered when using the h-index family metrics to measure scholarly impact. Like citation counts, the h-index metrics are contextually and temporally insensitive; their calculation is contingent on the bibliometric database used to calculate them and typically does not consider a specific period. These limitations have important consequences when designing policies and practices. Notably, the temporally

insensitive nature of the h-index family metrics prevents them from calculating past scholarly impact. Such inability implies that policies and practices created on allocating rewards and incentives for faculty and doctoral students may only rely on a current measure of an individual's h-index. However, this is not a true reflection of impact as it should also reflect the role of time (e.g., impact from specific periods and not all-time performance) (Cascio & Aguinis, 2008).

The temporal aspect is critical because it gives more contextual information, such as the scholar's performance trajectory, location, and resources available for research. For instance, within the same period, a scholar at an R1 university (a university with very high research activity according to the Carnegie research classification) with 13 publications and another scholar at an R3 university (a university with moderate research activity according to the Carnegie research classification) with also 13 publications in similar journals would give more contextual information about these scholars' performance. In our example, the scholar at an R3 university, regardless of fewer research resources than the R1 university scholar, performs at a similar level compared to the scholar at the R1 university—and is likely to improve research performance significantly if R1-type resources were available. This is critical information, given that the performance literature shows that performance trajectories should be contextualized (Alessandri, Cortina, Sheng, & Borgogni, 2021).²

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² In addition to journals, citation counts, and the h-index, a more recently proposed family of measures is called "altmetrics." Similar to citation count, these are article-level measures of impact based mostly on social media mentions (Bornmann, 2014b; Sanders, Corey, & Worrall, 2023; Sud & Thelwall, 2014). Altmetrics represent a way of measuring public engagement with research and are a valuable step forward in measuring an article's impact by allowing for impact to be measured shortly after a publication, but they have several limitations. Mainly, altmetrics are prone to problems such as (1) lack of agreement regarding which tools (i.e., bookmarking, Mendeley, comments on articles, blogging, and Wikipedia) to use to calculate altmetrics (Priem & Hemminger, 2010), (2) multiple versions of a paper can result in ambiguity and redundancies, (3) lack of context of where the citation has taken place, (4) lack of governing rules to dictate how to cite a paper in social media platforms, and (5) manipulation where high altmetric scores are generated through fake accounts (Bornmann, 2014b). Moreover, altmetrics are considered a way to measure articles' external impact or the impact that an article has on managers, policymakers, and broader society rather than on other researchers and other members of the Academy exclusively. Overall, while a significant innovation, as altmetrics are in the early development stage, several limitations must be addressed before using them to measure scholarly impact.

Next, we introduce our improved conceptualization and measure of scholarly impact, the Contextualized Scholarly Impact Index.

IMPROVED CONCEPTUALIZATION AND MEASURE OF SCHOLARLY IMPACT

Because of its importance, numerous articles have addressed the issue of conceptualizing and measuring scholarly impact of individual researchers. We reviewed this literature, identified key attributes, and incorporated them to improve the conceptualization of scholarly impact (Lambert & Newman, 2023; Podsakoff, MacKenzie, & Podsakoff, 2016). Specifically, Table 2 summarizes relevant research on scholarly impact that delves into the conceptualizations and recommendations to improve scholarly impact measurement. Prominent themes emerging from the literature include the need to transcend limited and subjective journal lists and embrace a broader spectrum of journals. Additionally, researchers have proposed developing quantifiable metrics and considering temporal constraints to mitigate potential biases in the measurement process.

[Insert Table 2 about here]

Building off the important body of research summarized in Table 2, we offer our improved conceptualization and measure of scholarly impact based on the h-index. Despite the limitations mentioned earlier, the validity of the h-index to measure scholarly impact has been well-established (Benway, Kalidas, Cabello, & Bhayani, 2009; Bornmann & Daniel, 2005; Bornmann, Wallon, & Ledin, 2008; Bould, Boet, Sharma, Shin, Barrowman, & Grantcharov, 2011; Hirsch, 2007; Sharma, Boet, Grantcharov, Shin, Barrowman, & Bould, 2013; van Raan, 2006). Particularly, the h-index addresses the problems of other common metrics, such as the total number of citations and the IF (Alonso, Cabrerizo, Herrera-Viedma, & Herrera, 2009). Specifically, to attain a high h-index, it is necessary to receive *both* many citations and publish

many articles. As a result, the h-index minimizes known problems related to quantifying article impact, such as dealing with the effects of star articles, special issue articles (Conlon et al., 2006), reviews, meta-analyses (Aguinis et al., 2011), article maturity (Bergh et al., 2006), co-author influence, and even journals in which they are published (Ramani et al., 2022). In addition, although several h-index variants were developed to eliminate the influence of co-authors (Batista et al., 2006; Opthof & Wilde, 2009), a meta-analysis showed that they did not significantly differ from the h-index scores (Bornmann et al., 2011).

Conceptual and empirical research in talent management has shown that various conditions affect individual performance, which Cascio and Aguinis (2008) labeled "performance in situ." For example, individual performance is affected by features of the performance management system (e.g., what is rewarded and what is not), norms and practices of the field, and the organization's goals. Accordingly, the h-index, when used in the specific context of management research, should consider citations specifically from management-related articles because citation counts vary due to a field's citation patterns (Kostoff, 2002). In addition, there is a need to consider time to understand the impact trajectory of scholars more effectively. Consequently, we operationalize scholarly impact (i.e., CSII) as the contextually and temporally sensitive h-index—the h number of articles published in any of the first quartile of SCImago publications in six management related categories, including Business and International Management, Management of Technology and Innovation, Organizational Behavior and Human Resource Management, Strategy and Management, Public Administration, and Applied Psychology, with h number of citations within a given time frame.

Facilitating the Improved Conceptualization: The CSII Tool

As detailed in Table 2, CSII incorporates conceptualizations of scholarly impact and

suggestions discussed in the scholarly impact literature in two distinct ways. First, CSII improves on existing measures of scholarly impact by offering a more refined, comprehensive, and transparent approach, thus providing a contextualized assessment of scholarly impact. Second, it provides a comprehensive and user-friendly tool for measuring scholarly impact at different levels, from individual researchers to a group of researchers and entire business schools. As a necessary clarification, CSII is designed to assess researchers' (and aggregated groups of researchers') impact and not the impact of individual articles or journals. Specifically, CSII focuses on the impact of an author's entire corpus of research published in any of the firstquartile SCImago journals in management-related categories. Additionally, CSII is not adversely affected by known issues that drive article impact, such as star articles, special issue articles, coauthor effects, and journal characteristics (e.g., basic vs. applied, high vs. low acceptance rates) because, as previously mentioned, to obtain high CSII scores scholars need to receive many citations and publish many articles within a given time frame. Users interested in assessing whether a scholar's impact has been achieved independently can obtain the CSII scores for all co-authors. The use of this information is entirely up to users, depending on their goals.

The CSII tool calculates the h-index using article-level information from management journals in the first quartile of the open-access SCImago journal list in six categories: Business and International Management, Management of Technology and Innovation, Organizational Behavior and Human Resource Management, Strategy and Management, Public Administration, and Applied Psychology. Appendix A lists the 320 journals included in these categories as of November 2nd, 2023. Table 3 shows the summary of each quartile of SCImago-ranked journals of the six management-related categories aggregated, demonstrating the higher average citation count of the first quartile compared to the other quartiles combined. Explicitly, the first quartile's

citation count is roughly four and half times higher than the second and more than three times higher than the second, third, and fourth quartiles combined. Including other quartiles' journals would substantially increase the database's size, causing strain on storage, data retrieval time, and data management, and would not change contextualized h-index scores meaningfully. Accordingly, CSII uses the first quartile journals.

[Insert Table 3 about here]

Establishing that contextualized h-index scores are valid for the intended use is important (Lambert & Newman, 2023). We do this by using 1) articles from SCImago-ranked journals and 2) Scopus as a base to calculate the contextualized h-index scores. First, using articles from SCImago-ranked journals provides a verifiable, open-access, and comprehensive journal database that all researchers can verify and use. By relying on the first quartile of 320 management journals in SCImago, CSII is more inclusive than other rankings, such as UT Dallas and TAMUGA. Specifically, UT Dallas relies on 24 journals, and 15 of them are management-related and included in the first quartile of SCImago. In contrast, TAMUGA uses only eight journals, all included in the first quartile of SCImago. In contrast, because of CSII's inclusivity and coverage and focus on individual researchers instead of the journals in which they have published their work, it is not biased given the numerous classification errors made when we "judge a book by its cover" and confuse levels of analysis (i.e., journal vs. researcher) when assessing impact (Kickul et al., 2023; Ramani et al., 2022).

Second, CSII uses Scopus as the starting point. However, CSII uses Scopus information to provide a metric that Scopus does not. There are five main reasons CSII uses Scopus as a base rather than WoS and Google Scholar. First, its validity has been determined by multiple independent empirical studies (e.g., Bornmann et al., 2011; Harzing & Alakangas, 2016;

Pranckutė, 2021). Scholars found that the number of citations and metrics provided by Scopus and WoS do not differ significantly, while Google Scholar results differ significantly from these two. Also, Google Scholar often contains duplicate records (Harzing & Alakangas, 2016) because of inconsistent and inaccurate forms of reference (Mingers & Lipitakis, 2010). Second, Scopus provides unique IDs to authors based on the publications indexed in the Scopus database. It allows us to accurately identify all articles that researchers published. In contrast, WoS does not use a unique identifier system like Scopus IDs. Instead, it relies on traditional search mechanisms and provides bibliographic information and citation data. Third, to calculate the contextualized h-index, CSII needs a database with strong social science coverage. Based on December 2021 data provided by Scopus, the majority of its publications are in social science areas (35%), followed by physical science (27%), health science (23%), and life sciences (15%). On the other hand, WoS has the strongest coverage in natural, health, engineering, computer, and materials sciences. More clearly, Martín-Martín et al. (2021) found that Scopus has more comprehensive coverage for Business, Economics, and Management than WoS. Fourth, Scopus is globally more inclusive than WoS. Scopus offers greater coverage of English and non-English documents than WoS (Vera-Baceta, Thelwall, & Kousha, 2019). Finally, Google Scholar restricts data requests and does not allow aggregate data collection (manually or via scraping) or API (database) provision. Since February 2013, Google has reduced the number of results per request from 100 to 20 to 10. If requests exceed the allotted number, Google Scholar blocks IP addresses for up to 24 hours.

In addition, a significant benefit and advantage of CSII is that it allows users to calculate scholarly impact based on different date ranges, providing an opportunity to track scholars' impact progress and trajectory over time (cf. Alessandri et al., 2021). In other words, CSII

enables users to conduct meaningful comparisons of scholars (e.g., based on the year of their Ph.D. completion) as it takes time to accumulate h-index scores. As a result, comparing junior and senior scholars based on their h-index scores may not accurately reflect their scholarly impact. CSII allows for a direct side-by-side comparison of, for example, ten scholars at approximately the same career stage. This use of CSII is not an apples-and-oranges comparison (i.e., the impact of a junior vs. a senior scholar); rather, it would be a comparison of ten junior (or senior) scholars at the same career stage. Thus, CSII scores are relative because they are contextualized and can change as publication norms change over time.

By incorporating a temporal aspect of scholarly impact, CSII differs from other bibliometric databases, such as Scopus, WoS, and Google Scholar. Whereas Scopus provides an individual scholar's h-index and a date range, its h-index calculation does not consider the context. In other words, the Scopus h-index can include articles published in non-management journals. In addition, it does not allow users to compare a group of scholars. For this purpose, users need to check each scholar's h-index. WoS and Google Scholar display the h-index for an individual researcher at the time without the ability to specify a particular year range for the hindex. In other words, WoS and Google Scholar have no built-in features to filter the h-index for a specific year range. Also, a practical limitation is that Scopus, WoS, and Google Scholar do not allow users to compare groups of scholars. Lastly, CSII is free, whereas both Scopus and WoS require institutional access, making the open and transparent calculation of scholarly impact only available to those belonging to an institution that has the financial resources to pay for the subscription. Table 4 includes a summary comparison of CSII with Scopus, WoS, and Google Scholar. In addition, Appendix B summarizes validity evidence in support of CSII scores to assess scholarly impact.

[Insert Table 4 about here]

No installation is necessary to run CSII, and it can be downloaded from https://www.hermanaguinis.com. Figures 1 and 2 provide visuals on how to use CSII. Figure 1 displays the decision diagram for CSII, which outlines the steps to use the tool effectively. Figure 2 shows the CSII home screen with a step-by-step explanation. Once users have identified the appropriate purpose for CSII (i.e., individuals or institutions), they can select the relevant tab at the top of the home screen to calculate the CSII score for a scholar (or aggregated group of scholars) or business schools (i.e., institutions) within a specified time range. The home screen provides the current software version and a link to the Scopus author help page for assistance if there is an issue (e.g., missing author or misspelling), as all author-identifying information is obtained from Scopus. The author search tab enables users to find authors by searching for their names or Scopus ID numbers. Users can also add multiple authors to the search list to calculate and compare the scholarly impact of a group of scholars over a specified period. We next provide a step-by-step "user guide" for CSII based on Figure 2.

[Insert Figures 1 and 2 about here]

Step-by-step Guide for Using CSII for Improved Policy-making and Practices

We introduce two cases illustrating the application of CSII to obtain information to inform policy-making and practices. The first case demonstrates individual management researchers' CSII score calculation, while the second involves comparing a business school with its peer institutions.

In the first case, CSII informs decisions concerning individual scholars. To use CSII, users can double-click the CSII icon, revealing the author search screen (Figure 2's top panel) as the default selection. Authors can be located by their names or Scopus ID numbers, with the

option to specify a date range (1) for comparison purposes (please note that the formatting for the date range is YYYY-MM-DD). To search for a name (e.g., John Doe), users can type it into the "Author name" box (2) or paste it using the "Paste from clipboard" button (3). Initiating the search with the "Search" button (4) displays the results for the entered name (5). Users can add authors to the search list by selecting the correct result and clicking "Add to list" (6), repeating this process as necessary. Once all names have been added to the search list, the CSII score can be calculated by selecting "Compare" (7), and results can then be sorted by last name or CSII score.

In the second case, CSII can inform decisions at the institutional level (i.e., business schools). Users can access the institution search screen (Figure 2's bottom panel) by double-clicking the CSII icon and selecting the institution search tab. The institutional search can be limited to specific dates (1) for comparing business schools within the same period (again, please note that the formatting for the date range is YYYY-MM-DD). Business schools can be located by entering their name into the "Institution name" box (2) or pasting it using the "Paste from clipboard" button (3). Initiating the search with the "Search" button (4) displays the results for the entered business school (5). Users can add business schools to the search list by selecting the correct result and clicking "Add to list" (6), repeating this process as necessary. Once all business schools have been added to the search list, the CSII score can be calculated by selecting "Compare" (7) and sorted alphabetically by institution name or CSII score.

IMPLICATIONS FOR POLICY-MAKING AND PRACTICES

Assessing scholarly impact is critical because of its policy and practice implications.

Unfortunately, existing measures have limitations that can result in flawed policies and practices.

These flawed policies and practices are evidenced by what Aguinis, Archibold, and Rice (2022)

called the *researcher-researcher gap*, or the disconnect between the research scholars create and how we use our own research to manage and lead business schools and faculty careers. The researcher-researcher gap contributed to a perfect storm where, for example, business school deans have resorted to using the Financial Times journal list to recognize publications that should be rewarded, effectively outsourcing the decision of evaluating which research counts and which does not to journalists (Aguinis et al., 2022).

As a preview, Table 5 summarizes policy and practice implications of using CSII, which we discuss next. However, before describing these implications, we issue two critical caveats. First, CSII scores *inform* policies and practices but do not dictate them. Obviously, there are many strategic and operational considerations that business schools take into account when defining, measuring, and making decisions (e.g., allocating resources and rewards) based on scholarly impact. Second, CSII scores are difficult to "game" because they are based on a large and inclusive set of journals and both quantity and quality indicators. However, no matter how good they are, all measures can be gamed—particularly when a single measure is used. So, although we described the many advantages of using CSII scores, they should be part of a broader and pluralist system of assessing scholarly impact (Aguinis, Shapiro, Antonacopoulou, & Cummings, 2014) and certainly not the only arbiter.

[Insert Table 5 about here]

Internal Funding Decisions of Business Schools

Internal funding decisions are critical to performance management systems within business schools, as they allocate resources to various institutes, research groups, scholars, and projects. Business school leaders and administrators can use CSII to inform internal funding decisions due to its management field-centric nature, capacity to consider quantity and quality

dimensions, incorporation of temporal aspects of impact, use of the current data, and ability to compare between sets of individual researchers and groups.

First, business schools could allocate funding (i.e., grants and research incentives) for researchers, research groups, and projects with a high potential to achieve a high CSII score. This can be determined by obtaining the CSII score of faculty on a project, considering their past impact in a specific time frame. Second, school administrators can evaluate the impact of previous funding decisions using CSII. Specifically, previous funding decisions can be evaluated by calculating the CSII scores of funded research groups, institutes, projects, or individuals. Moreover, temporal perspectives of impact can be applied, and as such, administrators can evaluate the impact of their funding decisions in a specific period.

External Funding Decisions of Business Schools

The implementation of CSII can also help external funding decisions. External stakeholders such as governments, institutions, private companies, or international organizations often need to assess the impact of business schools before funding them. CSII can help various stakeholders better understand scholars' and business schools' influence, helping them make more informed funding decisions.

First, decision-makers can use CSII to benchmark their funding decisions. In particular, CSII provides an efficient way to compare the impact of research groups, teams, centers, and institutes. This enablement means that external stakeholders can quickly assess the impact of different business schools or groups of scholars transparently and consistently make more informed decisions about who could receive funding. For instance, Table 6 includes the U.S. News & World Report 2023 ranking of the top 32 business graduate schools and compares it to the corresponding ranking based on CSII scores. As shown in Table 6, according to the 2023

U.S. News & World Ranking of Business Schools, the University of Chicago Booth School of Business is ranked 1st, and the Carey School of Business is ranked 29th. In contrast, per their CSII ranking, the University of Chicago Booth School of Business ranks 25th (i.e., a 24-rank decrease), while the Carey School of Business ranks 11th (i.e., an 18-rank increase).

[Insert Table 6 about here]

Using the data in Table 6, the Spearman's Rank Correlation between the U.S. News & World Ranking and CSII is 0.42 (i.e., only 17.64% variance overlap). So, this result provides discriminant validity evidence about the contextually sensitive nature of CSII scores, given that many highly ranked schools by U.S. News are known for their focus on scholarship in fields other than management (e.g., social psychology, economics). Clearly, the U.S. News ranking is not based just on scholarly impact. However, CSII scores provide complementary information that many business schools will find helpful in assessing and communicating the impact of their management scholarship specifically.

As another demonstration of the usefulness of CSII, Table 7 includes longitudinal CSII scores for a sample of business schools from the Carnegie R1 list. We selected these from the total of 146 R1 universities (as of 2021) to represent a range of CSII scores across time. This table shows that the CSII scores of the Haas School of Business (#8 based on U.S. News) and the Anderson School of Management (#17 based on U.S. News) differ by only seven points, with the former having a CSII score of 131 and the latter 124. Similarly, these schools' CSII scores in the last ten years are not very different, 60 and 54, respectively. Therefore, CSII scores show that even though Anderson School of Business is ranked 17th based on U.S. News, the school's scholarly impact in the field of management is similar to that of the Haas School of Business, ranked 8th.

Further providing an opportunity for decision-makers to benchmark their decisions, Table 7 illustrates the dynamic nature of CSII scores over time. Longitudinal analysis, tracking CSII scores over an extended period, provides valuable insights into the impact of researchers and business schools. Particularly, comparing CSII growth rates across different business schools can assist in contextualizing impact among peers. Additionally, analyzing CSII scores across various timeframes can unveil patterns of evolving impact and periods of increased or decreased impact. For instance, it can aid in identifying whether research initiatives put in place by a new dean are driving impact or causing stagnation.

[Insert Table 7 about here]

For example, Table 7 highlights that the CSII score for the University of Minnesota's Carlson Business School has remained the highest among the sample of R1 universities selected. Particularly, 145 papers produced by Carlson faculty from 2003 to 2023 have received at least 145 citations. Similarly, Carlson produced 69 papers from 2013 to 2023 that received at least 69 citations. Consequently, Carlson appears to have maintained stable research productivity in the last 20 years. Conversely, the University of Wisconsin-Madison's School of Business has had research productivity that increased significantly in the previous 10 years. Explicitly, from 2003-2023, the CSII score for Wisconsin-Madison was 50, whereas in the last 10 years, it was 42. This suggests Wisconsin achieved significant scholarly impact gains from 2013 to 2023.

Finally, funding agencies can decide on resource allocation that dutifully reflects the context in which the resources will be used. When making funding decisions, comparing scholars or business schools belonging to programs under different Carnegie research classifications would be comparing apples with oranges. Explicitly grounded on human capital theory, different training, education, and resource levels dictate performance outcomes. As a

result, external funding agencies would benefit from comparing business schools' CSII scores to peer schools when making decisions. Similarly, at the individual level, agencies can leverage CSII to draw cross-group comparisons to scholars from the same type of Carnegie research classification institutions. Moreover, time is an additional component that affects research impact. As a result, external funding agencies can make decisions drawing comparisons from entire business schools or individual scholars' impact within a particular time frame.

Training and Development of Faculty and Doctoral Students

First, business school policies and practices could provide training and development opportunities emphasizing skills and knowledge relevant to achieving certain CSII scores. Regarding faculty, training programs around the CSII score can be designed to provide department chairs and deans with direction on when to intervene in a faculty's development trajectory. Second, administrators would benefit from using CSII as a benchmarking tool for faculty development. Specifically, milestones can be created based on the impact of similar faculty (i.e., professor status, graduation year, doctoral-granting school), with CSII used to track the achievement of such goals. At the same time, to attain certain CSII scores, the faculty member needs to receive citations and publish articles in management journals within a specific time frame. As a result, it would not be easy to manipulate the CSII. If a faculty member is identified as not meeting the goal in the desired time frame, interventions can be designed to assist such faculty.

In addition, advisors to doctoral students can use CSII to plan out the student's objectives during the doctoral program. For example, advisors may use CSII to identify the impact of previous program graduates after graduation. This could serve as a means for doctoral students to compare their development throughout the program and design their research pipeline to meet

their goals after graduation. Similarly, doctoral students and their advisors could use CSII to identify how current faculty at target placement business schools performed before being hired in certain positions. This would create a metric that allows doctoral students to identify the likelihood of being placed at certain business schools. Fourth, faculty and doctoral students can use CSII to develop personal impact development plans (Aguinis & Gabriel, 2022). These personal impact development plans (PIDPs) help scholars understand their strengths and weaknesses and build a plan to maximize strengths while reducing potential weaknesses. Specifically, using CSII to develop PIDPs can help scholars identify their impact, benchmark themselves against others to see what skills they need to develop, and identify potential collaborators.

Succession Planning

CSII can further assist business schools in improving their human capital planning approaches. Via effective human capital planning, business schools can employ policies and practices to identify gaps in human resources. For instance, business schools can develop a succession planning strategy that prioritizes the development of scholars with the potential to obtain high CSII scores, among other performance evaluation metrics. When business schools need to replace certain faculty or leadership, they may use CSII to identify potential candidates. In conjunction with other information, candidates can be selected based on the CSII scores of the replacements compared to those being replaced. Additionally, business schools may use CSII to compare individuals in the same field who graduated at different times to identify who might be a possible replacement for those retiring or moving on. This practice can help ensure the business school's sustainability over time by enabling strategic succession planning.

Rewards

CSII provides an opportunity for improved talent management processes related to reward systems and incentives tied to scholarly impact. Scholarly impact is critical for business schools because impact metrics are used to make decisions about career outcomes, including securing a tenure-track job, enjoying a teaching reduction to devote more time to research, obtaining additional funding (e.g., summer support, research accounts, and cash bonuses), receiving a positive promotion and tenure review decision, and attaining a chaired position (Abritis, McCook, & Watch, 2017; Edwards & Roy, 2017; Kraimer, Greco, Seibert, & Sargent, 2019; Verma, 2015). As business schools strive for inclusivity and fairness in their rewards and recognition programs, faculty impact must be assessed transparently, in context, and within specific time frames. For this, CSII allows business schools to measure faculty's contextualized impact, translating to several policy and practice recommendations.

First, business schools or organizations seeking to reward efforts during a specific period could use CSII scores to identify those researchers who have increased their impact in that time frame. Second, CSII can benefit management researchers when calculating the CSII scores of individual scholars, research groups, and business schools. Particularly, CSII can be used by management researchers interested in learning about their impact and those evaluating other researchers' impact in the management field, such as faculty search committees, review, promotion, and tenure committees, research award committees, and business school leaders and administrators. These stakeholders would benefit from using CSII in transparently and equitably evaluating and comparing scholarly impact of management researchers. However, the CSII score may not be informative by itself because the ranges of the CSII scores are relative. To better understand the meaning of the CSII scores, stakeholders may want to obtain the CSII scores of the relevant comparison groups. Third, stakeholders involved in the talent management reward

and incentive process can use CSII to develop a clear policy and practice of the expected milestones for candidates interested in review, promotion, and tenure, as well as for research awards or reduced teaching loads. In other words, CSII could be used by business school administrators to develop transparent performance management systems that incentivize faculty to focus on clear impact goals. Further, business school administrators can use CSII to determine if strategic impact priorities align with resource allocation decisions.

Selection of Journal Editors and Associate Editors

The selection committee of journals can also benefit from CSII. The selection of editors is a thorough process that demands significant time and effort from the current editors because editors have long-lasting effects (Cascio, 2008). In addition, many journals have been increasing the size of their editorial teams to keep up with the growing number of article submissions (Corley & Schinoff, 2017). The selection is partly based on one's publication record (Feldman, 2008; Zedeck, 2008). For this purpose, editor selection committees can use CSII to obtain candidates' scores and benchmark them against each other. Further, prospective editors can also use CSII to prepare themselves for selection processes. A policy or practice that states the expected publication record of candidates can be provided to them beforehand, and CSII provides a platform for prospective editors to track their impact progress and make a plan to reach their goals.

Additional Implications for Policy-making and Practices Using CSII: Four Illustrations

To further highlight the practical usefulness of CSII, we present four additional possibilities.

Institutional use. First, users can obtain a quantitative assessment of the research impact of a business school and compare it with others in a particular region of interest or a particular

reference group. Given that CSII can calculate the scores for business schools over time, it can be an invaluable resource for tracking research impact, benchmarking against peers, aspirational schools, and competitors, and assessing the impact of research investments. By incorporating quality and quantity dimensions of scholarly impact, this tool can be one of the inputs into decision-making and resource allocation, ultimately leading to improved outcomes for the business school and its stakeholders. Further, business schools that demonstrate consistent CSII improvements will likely attract prospective faculty. If a business school makes a significant investment in research infrastructure or hires new faculty members, tracking the impact of these investments over time can be helpful, given CSII's ability to focus on specific date ranges.

Prospective student use. CSII can be helpful for prospective students seeking admission to business schools—not just for doctoral students but also for undergraduate students (Perczel, 2021). When choosing a business school, its research impact becomes a significant consideration as it indicates the academic rigor and educational quality expected. Therefore, CSII objectively measures a school's research impact, enabling prospective students to decide which business schools to apply to. By incorporating CSII as one of the factors in their decision-making process, students can gain valuable insights into the scholarly impact of different business schools, thus facilitating a more comprehensive evaluation of their options.

Researcher use. Third, CSII can be helpful to researchers seeking potential collaborators or mentors. By leveraging CSII to identify business schools with a strong impact, researchers can pinpoint those with a track record of producing impactful research in their field of interest. This enables researchers to identify potential collaborators or mentors with the expertise and experience necessary to support and guide their research endeavors effectively. With CSII's insights, researchers can make informed decisions about establishing connections with

individuals from business schools known for their impactful contributions, fostering a collaborative environment conducive to advancing knowledge and achieving scholarly excellence.

Editorial board use. CSII scores are also helpful for journal editorial boards. For example, Table 8 includes mean CSII scores across 16 management journals for senior editorial board members (i.e., editor-in-chief, senior editor, editor, senior associate editor, deputy editor, general editor, and associate editors). CSII objectively measures the collective impact of editorial board members, assesses trends over time, and informs policy decisions. A "cornerstone of the scientific ethos" is selecting editorial board members based on scholarly achievement (Bedeian, Van Fleet, & Hyman, 2009a: 211; 2009b). Using CSII, researchers and policymakers can evaluate the impact of editorial board members and determine the degree to which they are influential. In addition, professional organizations can make decisions about selecting members of the senior editorial board based on this information.

[Insert Table 8 about here]

IMPLICATIONS FOR FUTURE RESEARCH

The improved conceptualization of scholarly impact and introduction of CSII have several implications for future research: (a) investigating the factors that affect scholarly impact, (b) examining the role of interdisciplinary research and networks, and (c) identifying best practices for promoting research collaborations and enhancing scholarly impact. CSII provides a more comprehensive picture of research impact by considering research context and time, which can help identify factors that affect impact in groups of scholars and entire business schools. Future research can also study how funding, research culture, collaboration, and interdisciplinary research contribute to higher CSII scores and overall research impact.

For example, CSII can help investigate networks' role in scholarly impact. Scholars can examine how network characteristics, such as size and structure, influence CSII scores. In addition, CSII can help to identify best practices for promoting research collaborations and enhancing impact. In this regard, scholars can study the strategies and practices that promote successful collaborations and increase impact in groups of scholars and entire business schools. We hope that these avenues of research will contribute to a better understanding of impact and help to improve the evaluation of impact in business schools. Finally, theories and constructs improve over time (Bartunek, 2020). Therefore, better theories, methods, and tools will continue to improve the contribution of management theory and research to policy-making and practices.

CONCLUSION

Scholarly impact is one of the strongest currencies in the Academy. We address problems and answer ongoing calls to better inform business school policies and practices by improving the conceptualization and measurement of scholarly impact that considers contextual and temporal aspects. CSII relies on a wide range of influential management journals and utilizes both quality and quantity dimensions of scholarly impact. Its inclusivity, reliance on Scopus, free access, and user-friendliness make it valuable for assessing scholarly impact at the individual researcher and (aggregated) higher levels of analysis as well. Notably, the CSII software tool can easily calculate impact across different time frames, which sets it apart from existing bibliometric databases. Our study contributes to policy-making and practices by improving the theoretical conceptualization of scholarly impact; offering a uniform metric for comparing the impact of individual scholars, research groups (e.g., teams, centers, and institutes), and business schools; aiding funding agencies in making informed decisions; assisting in the training and development of faculty and doctoral students; supporting policies for review, promotion, and

tenure; and providing critical information for talent management practices in business schools, professional organizations, and journals including selection, succession planning, and rewards. We close by re-iterating an important caveat: All measures, including scholarly impact measures, have the potential to be "gamed." So, it is essential not to rely on any single one, no matter how valid it might be.

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TABLE 1

Comparison of Features of Academic Databases and Search Engines Commonly Used to

Count Citations

	Dat	abases and Search Engin	ies
Features	Scopus	Web of Science	Google Scholar
Type	Bibliographic database	Bibliographic database	Search engine
Scope	69 million	105 million	380 million
Coverage	Multidisciplinary	Multidisciplinary	Multidisciplinary
Date Range	1788 – Present	1900 – Present	1700 – Present
Accessibility	Institutional access	Institutional access	Free ^a
Limitations	Overall, it has the narrowest scope	Least coverage of Business, Economics, and Management journals	Opacity in technical functionality yielding duplicates and inconsistencies in search results

Note: ^a Although Google Scholar is a free service, it imposes restrictions on user requests, and exceeding these limits can lead to temporary service bans.

TABLE 2
Scholarly Impact Research and Its Influence on the Development and Characteristics of the Contextualized Scholarly Impact Index (CSII)

Article	Conceptualization and suggestions to improve scholarly impact	Recommendations used in CSII's development and characteristics
Adler and Harzing (2009)	Academic fields should move beyond dysfunctional academic ranking systems.	Use quantitative data to inform policies and practices that support the production of research that matters.
Aguinis, Cummings, Ramani, and Cummings (2020)	Emphasis on publishing in A- journals has serious detrimental effects on the conduct, content, and reporting of management research.	Consider a broad set of impactful journals using open-access SCImago rankings.
Aguinis, Shapiro, Antonacopoulou, and Cummings (2014)	Scholarly impact should consider multiple stakeholders and measures to be assessed accurately by psychometric standards.	Adapt the measure of impact to a specific local context (i.e., management studies) by using a broad set of journals based on Scopus to calculate CSII scores.
Aguinis, Suárez- González, Lannelongue, and Joo (2012)	There is a lack of research assessing the impact of individual researchers' scholarly work on external stakeholders.	Develop a tool external stakeholders can use to compare individual researchers and business schools.
Bedeian (2005)	There are methodological and theoretical challenges when comparing management journals to those of closely related fields.	Include a limited set of closely related journals (e.g., applied psychology and not psychology) as categorized by SCImago.
Certo, Sirmon, and Brymer (2010)	Most scholars need more than five (or 10) years to publish five (or 10) high-IF articles.	Include temporal constraints on searches.
Cronin (1984)	Science is a social system where credit is bestowed in recognition via citations.	Use citation counts as an important measure of scholarly impact.
Hirsch (2005)	Provide an easily calculable	Conduct a group-level

	metric that mitigates bias issues when solely relying on the total number of papers or citations.	calculation of the contextualized h-index, which is currently difficult to calculate in a reasonable amount of time.
Judge, Cable, Colbert, and Rynes (2007)	While the prestige of a journal is the primary driver of citations, it entails a host of inefficiencies, including excessive submissions to a small set of journals.	Select an inclusive set of journals from the top quartile of management-related journals from SCImago (300+).
Lockett and McWilliams (2005)	The management field runs a trade deficit with other fields importing more knowledge than it exports.	Include multidisciplinary categories from SCImago, including applied psychology and public administration.
Podsakoff, MacKenzie, Podsakoff, and Bachrach (2008)	Bibliometric techniques on quantitative data can be used to evaluate the impact of researchers and business schools.	Provide a tool enabling those without specialized knowledge to obtain bibliometrically derived data.

TABLE 3
Selected SCImago Journal Citations by Quartile

Quartile	N	Mean	SD	Median	IQR	Mean citations from the previous three years
1	320	84.44	57.09	73	59.75	1,683.31
2	348	36.33	22.13	31	29	380.63
3	339	19.33	13.31	17	14.50	136.42
4	350	9.90	8.90	8	11	37.04

Note: Journals belonging to one or more SCImago categories resulted in different numbered quartiles. IQR = interquartile range, SD = standard deviation.

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TABLE 4

Comparative Benefits of CSII, Scopus, Web of Science, and Google Scholar for Scholarly Impact Assessment

Benefit	CSII	Scopus	Web of Science	Google Scholar
Contextualized assessment	Yes	No	Limited	No
Inclusion of quality metrics	Yes	Yes	Yes	Yes
Multi-dimensional evaluation	Yes	Limited	Limited	No
Field-specific assessment	Yes	Limited	Yes	Limited
Temporal analysis	Yes	Yes	Limited	Limited
Easy benchmarking	Yes	Limited	Limited	Limited
Transparent methodology	Yes	Yes	Limited	No
Open access	Yes	No	No	Limited ^a

Note: ^a Although Google Scholar is a free service, it imposes restrictions on user requests, and exceeding these limits can lead to temporary service bans.

TABLE 5

Improving Scholarly Impact Assessment Using the Contextualized Scholarly Impact Index (CSII): Implications for Policy-Making and Practices

Domains	Policies	Practices
Internal Funding Decisions of Business School •	Allocate funding for individual researchers, research groups, and projects with the potential to achieve high CSII scores. Evaluate the impact of previous funding decisions using CSII.	CSII provides a uniform metric for comparing impact context and allows business schools to allocate internal funding, grants, and research incentives effectively among researchers and research groups (e.g., teams, centers, and institutes). As a result, it enables more meaningful comparisons of individual researchers and research groups in a specific period.
External Funding • Decisions of Business School •	Use CSII as a benchmarking mechanism for funding decisions. Allocate resources based on the context in which they will be used.	CSII allows an efficient and fair comparison of scholarly impact across business schools by considering impact context and time frames. Funding agencies can use it to make informed decisions about who receives funding and consistently compare business schools or groups of scholars while accounting for differences in training, education, and resources and for time.
Training and Development of Faculty and Doctoral Students	development opportunities emphasizing skills and knowledge relevant to achieving certain CSII scores. Use CSII as a benchmarking tool for faculty development.	CSII can guide the design of training programs by identifying milestones for faculty development within a specific time frame. In addition, advisors can use CSII to plan doctoral students' objectives and provide a metric for comparing with previous graduates and current faculty at target placement business schools, helping students design their research pipeline.
Succession • Planning	Develop a planning and succession strategy that	CSII can help business schools identify resource gaps and select

develops scholars with the potential for high CSII scores.

potential candidates for faculty and leadership positions (e.g., associate dean for research). It can also help compare individuals in the same field who graduated at different times, enabling strategic succession planning and ensuring the business school's sustainability.

Rewards

- Use CSII scores to identify researchers who have increased impact during a specific time frame for rewards and incentives.
- Use CSII scores to develop milestones for faculty.

CSII offers transparent measurement of researchers' impact and identifies those who increased impact in a specific time frame.

Management researchers and talent management stakeholders can use it to evaluate scholarly impact and develop the expected milestones for review, promotion, tenure, research awards, and teaching load reduction.

Selection of Journal Editors and Associate Editors Use CSII to obtain scores for candidates and benchmark them against each other to select journal editors and associate editors. CSII can help the selection committee of journals to compare candidates. It can also provide a platform for prospective editors to track the progress of editorial board members.

TABLE 6

2023 U.S. News & World Report Top 32 Best Business Graduate Schools and Corresponding Contextualized Scholarly Impact Index (CSII) Ranks

U.S. News	CSII	
Rank	Rank	Business School
1	25	University of Chicago (Booth)
1	1	University of Pennsylvania (Wharton)
3	6	Northwestern University (Kellogg)
3	10	Stanford University (Graduate School of Business)
5	2	Harvard University (Harvard Business School)
5	3	Massachusetts Institute of Technology (Sloan)
7	25	Yale University (School of Management)
8	17	Columbia University (Business School)
8	12	University of California, Berkeley (Haas)
10	13	University of Michigan-Ann Arbor (Ross)
11	15	Dartmouth College (Tuck)
12	8	Duke University (Fuqua)
12	4	New York University (Stern)
14	22	University of Virginia (Darden)
15	31	Cornell University (Johnson)
16	23	Carnegie Mellon University (Tepper)
17	14	University of California-Los Angeles (Anderson)
18	16	University of Texas-Austin (McCombs)
19	7	University of North Carolina-Chapel Hill (Kenan-Flagler)
19	8	University of Southern California (Marshall)
21	18	Emory University (Goizueta)
22	28	Georgetown University (McDonough)
22	5	Indiana University (Kelley)
22	21	University of Washington (Foster)
25	28	University of Notre Dame (Mendoza)
25	30	Vanderbilt University (Owen)
27	24	Rice University (Jones)
28	19	Georgia Institute of Technology (Scheller)
29	11	Arizona State University (Carey)
29	32	University of Texas at Dallas (Jindal)
29	25	University of Florida (Warrington)
29	19	Washington University in St. Louis (Olin)

TABLE 7

Contextualized Scholarly Impact Index (CSII) Scores for a Sample of Business Schools in Universities Classified as Very High Research Activity (i.e., R1) According to the Carnegie

Classification of Institutions of Higher Education

Classification of Institutions of Higher Ed		COTT	COII
	CSII	CSII	CSII
	score	score	score
	(all	(2003–	(2013–
Business School	time)	2023)	2023)
University of Minnesota (Carlson)	162	145	69
University of Maryland (Smith)	151	131	69
Michigan State University (Eli Broad)	146	127	57
University of North Carolina at Chapel Hill (Kenan-Flagler)	143	122	67
Pennsylvania State University (Smeal)	133	118	67
University of California, Berkeley (Haas)	131	118	60
University of Michigan (Ross)	129	121	66
Texas A&M University (Mays)	129	125	74
University of California, Los Angeles (Anderson)	124	107	54
University of South Carolina (Moore)	120	115	69
University of Texas at Austin (McCombs)	117	113	54
University of Georgia (Terry)	107	97	60
Purdue University (Krannert)	105	82	40
University of Pittsburgh (Katz)	96	80	39
University of Washington (Foster)	93	92	64
Georgia State University (Robinson)	92	88	54
University of Arizona (Eller)	91	89	47
University of Illinois at Urbana-Champaign (Gies)	86	75	38
University of Florida (Warrington)	84	81	45
University of Oklahoma (Price)	83	79	43
University of Colorado, Boulder (Leeds)	79	78	40
University of Connecticut (UConn School of Business)	77	69	38
University of Utah (Eccles)	76	67	41
Iowa State University (Ivy)	72	65	40
Oklahoma State University (Spears)	72	68	40
University of Arkansas (Walton)	68	64	42
University of Alabama (Culverhouse)	67	67	43
University of Oregon (Lundquist)	67	58	35
University of Massachusetts Amherst (Isenberg)	61	57	38
Virginia Tech (Pamplin)	60	50	36
University of Kansas (School of Business)	60	51	30
University of Iowa (Tippie)		58	29
Washington State University (Carson)		52	36
Louisiana State University (Ourso)		52	25
University of Wisconsin-Madison (Wisconsin School of			
Business)	52	50	42

Note. This table includes a selected sample from 146 R1 universities (as of 2021) to represent a range of CSII scores across time. CSII scores were calculated on November 22, 2023.

TABLE 8

Senior Editorial Board Contextualized Scholarly Impact Index (CSII) Ranks and Mean
CSII Scores Across 16 Management Journals

Journal	Rank	N	Mean	SD
Academy of Management Perspectives	1	9	21.56	9.50
Journal of Management	2	20	18.05	7.99
Academy of Management Annals	3	13	16.77	10.38
Academy of Management Journal	4	20	14.55	8.77
Journal of Applied Psychology	5	13	14.46	7.91
Journal of Management Studies	6	15	14.20	5.47
Journal of Organizational Behavior	7	16	13.13	4.81
The Leadership Quarterly	8	24	12.42	10.01
Academy of Management Review	9	15	12.33	8.20
Academy of Management Discoveries	10	10	12.00	9.35
Personnel Psychology	11	7	11.43	5.56
Administrative Science Quarterly	12	13	11.08	4.39
Strategic Management Journal	13	37	10.38	5.45
Academy of Management Learning and Education	14	9	9.56	5.27
Organizational Behavior and Human Decision Processes	15	16	8.56	5.11
Organization Science	16	51	7.96	5.04

Note: Senior editorial boards include the editor-in-chief, senior editor, editor, senior associate editor, deputy editor, general editor, and associate editors. CSII scores were calculated on November 22, 2023.

FIGURE 1

Deciding Whether to Use Contextualized Scholarly Impact Index (CSII) and Which Type of Analysis

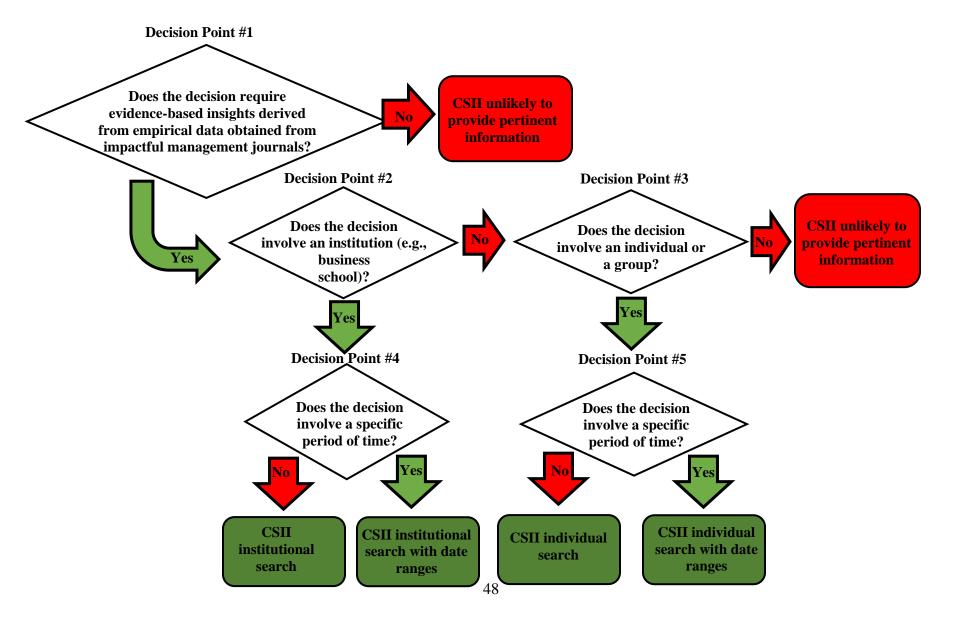
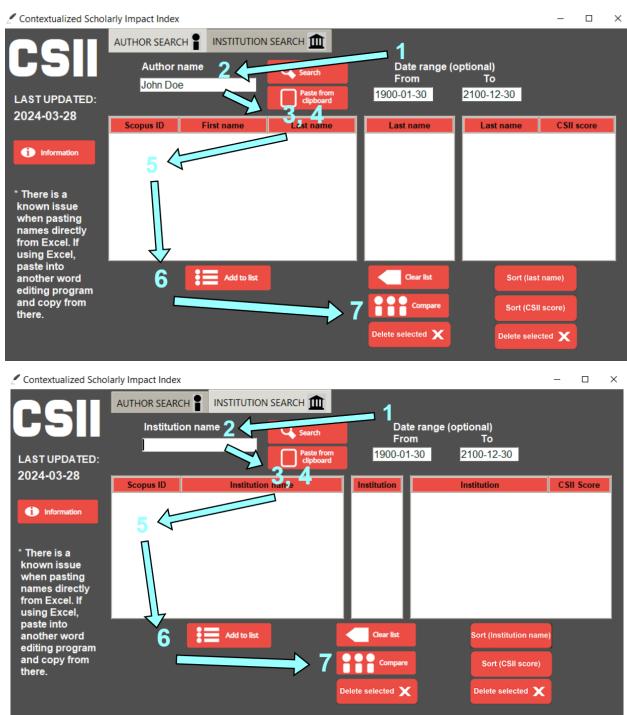


FIGURE 2
Contextualized Scholarly Impact Index (CSII) User Interface



Note. The program is available at https://www.hermanaguinis.com.

APPENDIX A

Journals Used to Calculate Contextualized Scholarly Impact Index (CSII) Scores (N = 320)

Academy of Management Annals

Academy of Management Journal

Academy of Management Learning and Education

Academy of Management Perspectives

Academy of Management Review

Accounting, Organizations and Society

Administration and Society

Administrative Science Quarterly

Administrative Theory and Praxis

American Journal of Community

Psychology

American Journal of Evaluation

American Review of Public

Administration

Annual Review of Organizational

Psychology and Organizational

Behavior

Applied Developmental Science

Applied Psychology

Applied Psychology: Health and Well-

Being

Area Development and Policy

Asia Pacific Journal of Management

Asia Pacific Journal of Marketing and

Logistics

Asia Pacific Management Review

Assessment

Behavioral Medicine

Behavioral Research in Accounting

Benchmarking

Body Image

British Journal of Health Psychology

British Journal of Industrial Relations

British Journal of Management

BRQ Business Research Quarterly

Business Ethics

Business Horizons

Business Process Management Journal

Business Strategy and the Environment

California Management Review

Career Development and Transition for

Exceptional Individuals

Corporate Governance: An International

Review

Corporate Social Responsibility and

Environmental Management

Counseling Psychologist

Creativity and Innovation Management

Criminology and Public Policy

Cyberpsychology, Behavior, and Social

Networking

Decision

Decision Sciences

Economic and Industrial Democracy

Economy and Society

Educational Administration Quarterly

Educational and Psychological

Measurement

Educational Assessment, Evaluation and

Accountability

Educational Management

Administration and

Leadership

Electronic Commerce Research and

Applications

Electronic Markets

Emerging Markets Review

Entrepreneurship and Regional

Development

Entrepreneurship Theory and Practice

Environment and Planning C: Politics

and Space

Eurasian Mining

European Accounting Review

European Business Review

European Journal of Industrial Relations

European Journal of Innovation

Management

European Journal of Psychology Applied

to Legal Context

European Journal of Work and

Organizational Psychology

European Management Journal

European Management Review International Journal of Forecasting European Research on Management and International Journal of Hospitality **Business Economics** Management **European Sport Management Quarterly** International Journal of Human **Evolutionary Human Sciences** Resource Management Foundations and Trends in International Journal of Industrial Entrepreneurship Organization International Journal of Integrated **Futures** Supply Management Gender, Work and Organization Global Journal of Flexible Systems International Journal of Intercultural Management Relations Global Strategy Journal **International Journal of Logistics** Globalizations Management International Journal of Logistics Governance Research and Applications Government and Opposition Group and Organization Management International Journal of Management Harvard Business Review Reviews Health Care Management Review International Journal of Managing Health Psychology **Projects in Business Human Relations** International Journal of Operations and **Human Resource Development Production Management** International Journal of Physical **Ouarterly** Human Resource Development Review Distribution and Logistics Human Resource Management Management Human Resource Management Journal International Journal of Precision Human Resource Management Review Engineering and Manufacturing – Human Resources for Health Green Technology International Journal of Production **IEEE Communications Standards** Magazine Research IEEE Engineering Management Review International Journal of Project **ILR Review** Management Industrial Management and Data International Journal of Retail and Systems **Distribution Management Industrial Relations International Journal of Stress Industry and Innovation** Management Information and Organization **International Marketing Review** Information Technology for **International Organization** Development **International Public Management** Innovation Policy and the Economy Journal International Business Review International Review of Sport and International Entrepreneurship and **Exercise Psychology** International Small Business Journal Management Journal International Journal of Electronic **International Transactions in Operational** Research Commerce International Journal of Entrepreneurial Internet of Things (Netherlands) Behavior and Research Journal of Advertising

Journal of Air Transport Management Journal of Fashion Marketing and Journal of Applied Psychology Management Journal of Applied Research in Memory Journal of Financial Economics and Cognition Journal of Global Fashion Marketing Journal of Behavioral Decision Making Journal of Higher Education Policy and Journal of Benefit-Cost Analysis Management Journal of Black Psychology Journal of Human Resources Journal of Brand Management Journal of Industrial and Business Journal of Business and Industrial **Economics** Journal of Industrial Integration and Marketing Journal of Business and Psychology Management Journal of Business and Technical Journal of Industrial Relations Communication Journal of Information Systems Journal of Business Economics Journal of Information Technology Journal of Information Technology and Journal of Business Ethics Journal of Business Venturing **Politics** Journal of Business Venturing Insights Journal of Innovation and Knowledge Journal of Interactive Marketing Journal of Career Assessment Journal of International Business Studies Journal of Cleaner Production Journal of Co-operative Organization Journal of International Management and Management Journal of International Marketing Journal of Common Market Studies Journal of Knowledge Management Journal of Law, Economics, and Journal of Communication Management Journal of Construction Engineering and Organization Management - ASCE Journal of Leadership and Journal of Consumer Culture **Organizational Studies** Journal of Consumer Psychology Journal of Management Journal of Consumer Research Journal of Management Accounting Journal of Contextual Behavioral Research Journal of Management in Engineering – Science Journal of Corporate Finance **ASCE** Journal of Criminal Justice Journal of Management Inquiry Journal of Management Science and Journal of Destination Marketing and Management Engineering Journal of Economic Behavior and Journal of Management Studies Journal of Managerial Psychology Organization Journal of Manufacturing Processes Journal of Economic Psychology Journal of Economics and Management Journal of Manufacturing Technology Strategy Management Journal of Marketing Journal of Educational Administration Journal of Educational Measurement Journal of Marketing Communications Journal of Marketing Management Journal of Engineering and Technology Management – JET-M Journal of Marketing Research Journal of Environmental Psychology Journal of Media Business Studies Journal of European Public Policy Journal of Occupational and Journal of Family Business Strategy Organizational Psychology

Journal of Occupational Health Psychology

Journal of Operations Management Journal of Organization Design

Journal of Organizational and End User

Computing

Journal of Organizational Behavior Journal of Personal Selling and Sales

Management

Journal of Policy Analysis and

Management

Journal of Positive Behavior

Interventions

Journal of Product and Brand

Management

Journal of Product Innovation

Management

Journal of Productivity Analysis

Journal of Professions and Organization

Journal of Public Administration

Research and Theory Journal of Public Policy

Journal of Public Policy and Marketing Journal of Public Relations Research Journal of Purchasing and Supply

Management

Journal of Quality Technology

Journal of Risk Research

Journal of Service Management

Journal of Service Research

Journal of Service Theory and Practice Journal of Small Business Management

Journal of Social Policy

Journal of Sport Management

Journal of Technology Transfer

Journal of the Academy of Marketing

Science

Journal of the Association for Consumer Research

Journal of Urban Management Journal of Vocational Behavior

Journal of World Business

Labour Economics

Leadership

Leadership Quarterly Long Range Planning Management and Organization Review

Management Communication Quarterly

Management International Review

Management Learning

Management Review Quarterly

Management Science

Manufacturing and Service Operations

Management Marketing Letters Marketing Science Media Psychology

Mental Health and Physical Activity

Mindfulness

Multinational Business Review New Technology, Work and

Employment

Nonprofit Management and Leadership

Operations Management Research

Organization

Organization and Environment

Organization Science Organization Studies

Organizational Behavior and Human

Decision Processes

Organizational Psychology Review Organizational Research Methods

Personnel Psychology Policy and Internet **Policy and Politics** Policy and Society

Policy Design and Practice

Policy Insights from the Behavioral and

Brain Sciences Policy Sciences

Policy Studies Journal

Production and Operations Management

Production Planning and Control Project Management Journal Psychological Medicine Psychology and Marketing

Psychology of Aesthetics, Creativity,

and the Arts

Psychology of Sport and Exercise

Psychology of Violence Psychosomatic Medicine Psychotherapy and Psychosomatics

Public Administration

Public Administration Review

Public Management Review

Public Performance & Damp; Management

Review

Public Personnel Management

Public Relations Review

Quality Technology and Quantitative

Management

R and D Management

Regulation and Governance

Research and Politics

Research in Organizational Behavior

Research in Personnel and Human

Resources Management

Research in Transportation Business and

Management

Research Policy

Research Technology Management

Review of Corporate Finance Studies

Review of International Organizations

Review of Public Personnel

Administration

Risk, Hazards and Crisis in Public

Policy

Scandinavian Journal of Management

School Leadership and Management

Science and Engineering Ethics

Service Business

Service Industries Journal

Social Issues and Policy Review

Social Policy and Administration

Socio-Economic Planning Sciences

Sport Management Review

Strategic Entrepreneurship Journal

Strategic Management Journal

Strategic Organization

Strategy Science

Stress and Health

Supply Chain Management

Technological Forecasting and Social

Change

Technology in Society

Technovation

Tourism Management

Tourism Planning and Development

Transportation Research Part F: Traffic

Psychology and Behaviour

Transportation Research, Part E:

Logistics and Transportation Review

Trauma, Violence, and Abuse

Utilities Policy

Venture Capital

Voluntas

Work and Occupations

Work and Stress

Work, Aging and Retirement

Work, Employment and Society

APPENDIX B
Summary of Validity Evidence in Support of Contextualized Scholarly Impact Index (CSII) Scores

Validity	Validity Evidence
Construct validity	CSII uses the established methodology based on the h-index to measure scholarly impact (Bornmann, Mutz, & Daniel, 2010; Hirsch, 2005), providing evidence that CSII scores are an approximation of scholarly impact (Landy, 1986).
Content validity	The selection of 320 influential management journals for inclusion from SCImago (Appendix A) ensures that a "diverse domain sampling" (Aguinis, Henle, & Ostroff, 2001: 38) of management topics and perspectives is represented.
Criterion-related validity	CSII calculates an individual scholar's h-index using a subset of data from Scopus. Thus, CSII scores are an h-index variant based on Scopus data. Bornmann, Mutz, Hug, and Daniel (2011) showed that 37 h-index variants exhibit a high correlation level, ranging from 0.80 to 0.90.
Convergent validity	Scopus h-index scores are closely linked to CSII scores because CSII scores are extracted from a subset of Scopus data. This implies that the CSII score will consistently match or be lower than the Scopus h-index score, ensuring that both metrics yield comparable outcomes (Aguinis, 2025).
External validity	CSII's inclusion of a large number of influential management journals (see Appendix A) maximizes generalizability.
Discriminant validity	A CSII comparison with U.S. News & World Ranking yielded a Spearman's Rank Correlation of 0.42 (i.e., only 17.64% overlap).

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