



The scholarly exchange of knowledge in Operations Management

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ABSTRACT

A number of studies have investigated the quality of journals in Operations Management. This research steps back from these studies and investigates the exchange of ideas within Operations Management journals and between other management disciplines (Management, Marketing, and Finance) during the last decade (1998–2007). Journal citation metrics provide a measure for the exchange of scholarly ideas. Operations Management (OM) journals show a willingness to cross-pollinate ideas with other management disciplines. But, they also tend to have a higher level of self citations and lower level of within discipline citation exchanges when compared to other management disciplines. As a result, Operations Management journals may reflect methodological silos in the field that could potentially dampen scholarly exchange. In general, increasing the diversity of scholarly exchanges within Operations Management, and conducting more cross-disciplinary research with other management disciplines should improve the scholarly development of Operations Management.

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1. Introduction

Scholarly progress can be defined as the *advancement or exchange of ideas* (adapted from wordnet.princeton.edu). Scholarship involves the progressive creation and exchange of knowledge that cumulates over time. Much of our current knowledge has been developed from the Shoulders of Giants from the past (Merton, 1965). That is, “science is by and large cumulative; it builds on what has gone on before” (Bird, 1998, p. 159). Sarton notes “the acquisition and systemization of positive knowledge are the only human activities which are truly cumulative and progressive” (Sarton, 1936). Similarly, scholarship in Operations Management should also be progressive and cumulate over time. However, a narrow disciplinary focus can hinder the development of a field of study. Scholars from different communities should cross-pollinate and learn from one another by exchanging ideas. Often real world problems that managers face do not belong to a single discipline, but are rather inter-disciplinary in nature (Van de Ven, 2007). Management scholars may need to transcend disciplinary boundaries when investigating real world phenomena. The field of Operations Management should not only influence, but also be influenced by other management disciplines. Research can “lock quickly into a single research discipline, paradigm or theory and

ignore the developments and insights from other fields that could shed light on the research issue on which they are focusing” (Merchant et al., 2003, p. 251). As a result, Operations Management scholars should actively participate in an ecosystem of exchanging ideas with other management disciplines to enhance learning and create knowledge. This study investigates the exchange of ideas within Operations Management, and between Operations Management and other management disciplines. Journal citation data provides the basis for measuring the exchange of scholarly ideas.

Measuring scholarly activity can be a daunting task. The pioneering work of Price (1963) provides one of the first attempts to quantitatively measure scholarly activity. Early measures focused on simple metrics like journal article or publication counts (Vastag and Montabon, 2002). However, these measures only consider the volume of research activity and did not consider the exchange of scholarly ideas. Researchers have argued that cutting edge science increasingly involves collaboration across disciplinary boundaries (Rinia et al., 2002). In spite of this, relatively few empirical studies examine cross-disciplinary citation exchanges in management (Agarwal and Hoetker, 2007). This research attempts to understand citation exchanges between Operations Management and other disciplines, specifically – Management, Marketing and Finance.

Citation metrics can help measure the exchange of ideas between disciplines. In particular, the Citation Proportion (CP) (Tahai and Meyer, 1999), and the Balance of Trade (BOT) (Lockett and McWilliams, 2005) can help assess the cross-citation behavior between Operations Management and other management disciplines. These metrics help understand how Operations Man-

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agement participates in the larger ecosystem of exchanging ideas with other management disciplines. In addition, other metrics based on self citations (journals citing their own journal articles) and within discipline exchange (journals citing journals within the same discipline) help understand the amount of intra-, inter- and self citations that occur among the disciplines.

The importance of exchanging scholarly ideas via journals cannot be overstated. Journals provide one of the principle mediums for communicating, diffusing, and archiving scholarly ideas. Cole and Cole (1973, p. 16) view journal communication as “the nervous system of science – the system that receives and transmits stimuli to its various parts.” The effectiveness of journals not only facilitates scholarly exchanges, but also helps create a body of knowledge over time. Understanding journal communication can provide insights into the development of Operations Management, and how Operations Management communicates with other management disciplines. Journal citations formally document scholarly communication. “A citation occurs between journals A and B when an article in A references an article that was published in B. Journal A is called the *citing* journal while B is referred to as the *cited* journal” (Nerur et al., 2005, p. 71). When journal A cites journal B, journal A essentially imports knowledge from journal B while Journal B exports knowledge to Journal A (Lockett and McWilliams, 2005). Consistent with Lockett and McWilliams (2005), this research uses citation exchanges between journals to measure the scholarly development in a discipline.

Citations metrics have been commonly used to study business journals in disciplines such as Marketing (Guidry et al., 2004), Management (Agarwal and Hoetker, 2007), and Finance (Coe and Weinstock, 1984). They “provide an accurate and [a] less biased way of determining the influence of a journal by measuring its use.” (Guidry et al., 2004, p. 46). Citation metrics can serve as a measure of the exchange (Judge et al., 2007; Stephan and Levin, 1991; McFadyen and Cannella, 2004) and progress of scholarly ideas (Martin and Irvine, 1983). Higher citation metrics indicate more scholarly exchanges and hence knowledge creation.

Studying citation metrics longitudinally also gives valuable insight into the evolution and status of a discipline (Franke et al., 1990; Zinkhan et al., 1992; Lukka and Kasanen, 1996; Baumgartner and Pieters, 2003). A longitudinal investigation can reveal trends and transitions in performance over time (Barman et al., 1991). Such an analysis shows how journals contribute to the exchange ideas, and can provide insight into how a discipline evolves.

This research investigates the scholarly exchange of ideas in Operations Management journals via journal citations, and makes comparison with journals in Management, Marketing, and Finance. Although a number of disciplines could have been considered, Operations Management, Marketing, and Finance are principle functions of any business (Schroeder, 2007; Stevenson, 2007; Jacobs and Chase, 2006). In addition, Management is germane to any business activity (Daft, 2003; Robbins, 2003). These disciplines should be most relevant to Operations Management since decisions made in one of these disciplines typically influence or are influenced by Operations Management (Schroeder, 2007). The influence of Operations Management and other management disciplines (Management, Marketing, and Finance) is studied through the cross-citation behavior among these disciplines. Findings from this research suggest that Operations Management exhibits a higher level of cross-citation behavior with other management disciplines (when compared to Management, Finance, and Marketing). But, Operations Management also has higher rates of self citations (journals citing articles from the same journals) and lower within discipline journal citation exchanges (journals citing other journals in the same discipline). In contrast, Finance has the lowest level of self citations (among the four

disciplines) and has the most within discipline citation exchanges. Finance journals tend to exchange ideas with each other, while Operations Management journals tend not to exchange with one another. In general, relative to the other disciplines, Operations Management appears more willing to communicate with journals outside its discipline but less willing to communicate with journals inside its discipline. Increasing cross communications within Operations Management journals holds the potential to increase scholarly development.

2. Data and metrics

2.1. Journals

Journals play a critical role in communicating, diffusing, and archiving scholarly knowledge. A number of journals could be used when studying the scholarly exchanges within Operations Management and between other disciplines. However, for the most part, the top ranked journals should communicate, diffuse, and archive scholarly knowledge more effectively than other journals (see Judge et al. (2007) for a detailed discussion of journal citations and journal quality). This research uses journals recently identified as the most influential journals from each of the following disciplines: Operations Management, Marketing, Management, and Finance.

Barman et al. (2001) identified the Journal of Operations Management, Management Science, Decision Sciences, and Production and Operations Management as journals with the highest quality and relevance in field of Operations Management. Their data came from a survey of US members in the Production and Operations Management Society (POMS). Another study by Malhotra and Grover (1998) identified the same four journals as the most influential scholarly journals in Operations Management. In Marketing, Tellis et al. (1999) and Baumgartner and Pieters (2003) found the Journal of Marketing, Journal of Marketing Research, Marketing Science, and Journal of Consumer Research as the leading marketing journals in terms of quality and breadth of publications. In a study of Management journals, Podsakoff et al. (2005) identified Academy of Management Review, Academy of Management Journal, and Strategic Management Journal as the journals with the greatest influence in management over the past 20 years. Finally, Borokhovich et al. (2000) and Chen and Huang (2007) found the Journal of Finance, Review of Financial Studies, and Journal of Financial Economics as the journals with the most impact and influence in Finance over the past 30 years.

Table 1 gives the 14 top ranked journals from the four disciplines. Although a number of journals could have been considered, this study bounds the analysis to the most influential journals from each of the disciplines.

Table 1
Influential journals by discipline.

Operations Management	Marketing
Decision Science (DS)	Journal of Consumer Research (JCR)
Journal of Operations Management (JOM)	Journal of Marketing (JMKTG)
Management Science (MS)	Journal of Marketing Research (JMR)
Production and Operations Management (POM)	Marketing Science (MKSC)
Management	Finance
Academy of Management Journal (AMJ)	Review of Financial Studies (RFS)
Academy of Management Review (AMR)	Journal of Finance (JOF)
Strategic Management Journal (SMJ)	Journal of Financial Economics (JFE)

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