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An assessment of world-wide research productivity in production and operations management

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ABSTRACT

Journal publications are important to facilitate knowledge sharing among production and operations management (POM) academics and practitioners. The purpose of this study was to explore the global POM research performance based on papers published in 20 core POM journals in the past half century. The data for the study were obtained from Thomson Reuters' *Web of Science/Knowledge* databases, from 1959 to 2008, when 63,776 papers were published in POM journals. The annual distribution of papers published shows a significant growth in POM research productivity over the time period 1959 to 2008. The most productive authors in these five decades were T.C. Edwin Cheng from The Hong Kong Polytechnic University, Hong Kong; Gilbert Laporte from HEC Montréal, Canada; S.K. Goyal from Concordia University, Canada; S. Eilon from the University of London, UK; and Oded Berman from the University of Toronto, Canada. The five most productive institutions were as follows: Massachusetts Institute of Technology, Georgia Institute of Technology, Columbia University, Purdue University, and the University of Michigan. The countries found to have the highest outputs were the USA, the UK, Canada, the Netherlands and Taiwan.

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1. Introduction

Journal publications are important to facilitate knowledge dissemination among production and operations management (POM) academics and practitioners. Most academic disciplines in the field of management have analyzed their own research productivity in terms of authors, institutions and other bibliometric characteristics.

Some disciplines publish such studies on a fairly regular basis: for instance, accounting (Chung et al., 1992; Glover et al., 2006; Weber and Stevenson, 1981; Zivney et al., 1995), business (Henry and Burch, 1974; Moore and Taylor, 1980; Niemi, 1988b, 1998; Young et al., 1996), finance (Alexander and Mabry, 1994; Borokhovich et al., 1995; Borokhovich, et al., 1994, 1995; Chandy and

Williams, 1994; Chung and Cox, 1990; Chung et al., 2001; Cornelius and Persson, 2006; Heck et al., 1986; Jones and Roberts, 2005; Knight et al., 2000), management (Coe and Weinstock, 1984; Hancock et al., 1992; Jauch and Glueck, 1975; Sharplin and Marby, 1985; Stahl et al., 1988; Young et al., 1996), marketing (Niemi, 1988a), management information systems (Claver et al., 2000; Grover et al., 1992; Shim et al., 1993; Vogel and Wetherbe, 1984), operations research/management science (Chang and Hsieh, 2008), and even on an emerging technology used in business and industry, such as RFID (Ngai et al., 2008).

With reference to production and operations management, the first journal evaluation study was conducted by Barman et al. (1991), who ranked 20 POM-related journals based on the perceptions expressed by US-based members of the Decision Sciences Institute. Ansari et al. (1992) identified 72 journals that could potentially be important to a POM academic or practitioner. Vokurka (1996) and Goh et al. (1996, 1997) used objective citation analysis to

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determine the relative importance of various POM journals. Young et al. (1996) represented the first attempt at ranking the POM research productivity of individuals and business schools in the USA, according to the number and quality of articles published in the Barman et al. (1991) list of POM-related journals during the period 1989–1993. Malhotra and Kher (1996) classified institutional research productivity in terms of the total number of articles and pages published in the top five journals in the Barman list. These journals included *Management Science*, *Decision Sciences*, *Journal of Operations Management*, *IIE Transactions*, and *International Journal of Production Research*. Soteriou et al. (1999) presented rankings of the publication outlets in the five most highly ranked POM-related journals as perceived by POM researchers in Europe, and commented on the differences between European and US academics. In 2001, Barman et al. conducted a 10-year update to re-establish the ranking of those POM journals surveyed by Barman et al. (1991) and to capture changes in stakeholder perceptions that might have taken place in the previous decade. Olson (2005) obtained quality ratings and rankings of 39 journals in operations management and related disciplines through surveys of faculty members at the top 25 US business schools in both 2000 and 2002. Hadjinicola and Soteriou (2006) identified factors that promote the research productivity of groups of POM researchers in US business schools and noted three factors that increase both research productivity and the quality of articles published: (a) the presence of a POM research center, (b) funding received from external sources for research purposes, and (c) better library facilities. Jiang et al. (2007) examined the stream of China-related POM research over 1980–2005 to determine trends in quantity,

topical coverage, and data sources. While much has been written on POM, an extensive and longitudinal literature review is still lacking.

Following the evolution and growth of the field of production and operations management, a number of studies have recently appeared that provide insights into the assessment of the research productivity of individual researchers and departments in academic institutions. Most of these studies focused their efforts on US and European academics, and excluded both non-US and non-European/Europe researchers. In this study we contribute to the trend towards globalized research efforts in the POM discipline in the past half-century.

2. Methods

2.1. Journal selection

A number of recent studies have identified journals that are outlets for research in POM (Barman et al., 1991, 2001; Goh et al., 1997; Saladin, 1985; Scudder and Hill, 1998; Soteriou et al., 1999; Vokurka, 1996). However, some of the journals listed by previous studies were multi-disciplinary and not specific to POM (Young et al., 1996), and some new journals needed to be added. For the purposes of this study, those journals that were deemed not pertaining directly to the POM discipline were excluded. Based on the list of previous research, 20 POM-related journals were selected for this study. These are the journals that are indexed in the Thomson Reuters' *Web of Science/Knowledge (WoS/K)* "Science Citation Index-Expanded (SCI-E)" and "Social Science

Table 1
Twenty core POM journals.

No.	Journal title	Impact factor				Articles per year				Issues/ year	Country	Papers/ percentage 1959–2008	h- index
		2005	2006	2007	1998–2007	2005	2006	2007	1998–2007				
1	Computers & Industrial Engineering	0.347	0.65	0.554	0.358	87	99	93	109	8	UK	3895/6.11%	36
2	Computers & Operations Research	0.746	0.893	1.147	0.556	199	183	221	136	14	UK	2893/4.54%	47
3	Decision Sciences	1.055	1.62	1.435	0.864	23	23	21	21	4	USA	1067/1.67%	56
4	European Journal of Operational Research	0.824	0.918	1.096	0.668	447	651	838	471	24	NL	11445/ 17.95%	86
5	IIE Transactions	0.476	0.637	0.797	0.502	86	86	85	89	12	USA	2004/3.14%	49
6	Interfaces	0.524	0.338	0.575	0.501	36	44	42	56	6	USA	3595/5.64%	44
7	International Journal of Operations & Production Management	0.597	0.612	1.054	0.545	61	61	59	53	12	UK	1169/1.83%	33
8	International Journal of Production Economics	1.008	1.183	0.995	0.590	158	217	212	165	18	NL	3015/4.73%	37
9	International Journal of Production Research	0.481	0.799	0.560	0.559	251	270	278	247	18	UK	5394/8.46%	65
10	Journal of Operations Management	1.419	2.042	1.851	1.302	38	49	82	33	6	NL	418/0.66%	37
12	Journal of Productivity Analysis	0.492	0.763	0.439	0.545	31	35	35	24	6	NL	445/0.70%	27
11	Journal of the Operational Research Society	0.603	0.597	0.784	0.733	144	139	159	140	12	UK	6904/10.83%	52
13	Management Science	1.669	1.687	1.931	1.470	136	141	133	122	12	USA	5124/8.03%	141
14	Mathematics of Operations Research	0.906	0.785	0.875	0.969	54	36	55	45	4	USA	1504/2.36%	61
15	Naval Research Logistics	0.373	0.362	0.548	0.379	65	59	73	55	7/8	USA	2204/3.46%	48
16	Omega—International Journal of Management Science	0.648	0.663	1.327	0.566	49	52	62	50	6	UK	2351/3.69%	42
17	Operations Research	1.219	1.234	1.467	0.942	70	82	82	95	6	USA	7127/11.18%	117
18	Operations Research Letters	0.597	0.767	0.517	0.520	86	94	112	72	10	NL	1877/2.94%	42
19	Production and Operations Management	0.831	2.516	2.123	0.698	24	39	51	17	4	USA	382/0.60%	26
20	Transportation Science	0.714	1.27	1.427	0.792	37	38	35	32	4	USA	963/1.51%	49

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