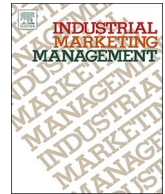




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# Industrial Marketing Management

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## Patterns of knowledge outflow from *Industrial Marketing Management* to major marketing and specialized journals (1999–2013): A citation analysis<sup>☆</sup>

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### 1. Introduction

Journals often mark special, commemorative occasions and major milestones by engaging in healthy introspective evaluations of their history, strategy, evolution, and impact (e.g., Calabretta, Durisin, & Ogliengo, 2011; Chintagunta et al., 2013; Huber, Kamakura, & Mela, 2014; Hustad, 2013; Schrock, Zhao, Hughes, & Richards, 2016). In this rich tradition, we mark the changing of the guard at *Industrial Marketing Management*, and Peter Laplaca's long tenure as Editor of IMM by tracing the impact *Industrial Marketing Management* has had on major marketing and specialized B2B marketing journals from 1999 to 2013. This period of interest overlaps significantly with Peter's stewardship of the journal.

Recent studies have examined levels of citation flows to assess import and export of knowledge between disciplines and domains (e.g. Clark, Key, Hodis, & Rajaratnam, 2014; Shafiq, 2013). We use a similar approach, but at the level of a particular journal. Specifically, we take a dynamic, year-by-year look at the impact *Industrial Marketing Management* (IMM) has had in terms of its Impact Factor, and citations in relevant major marketing and journals focusing on industrial/business-to-business marketing. In particular, from 1999 to 2013 we take a longitudinal look at:

- 1) the level of self-citation by IMM, and the growth in its impact factor;
- 2) the level of citation of IMM by top tier marketing journals;
- 3) the level of citation of IMM by second tier marketing journals, and specialized B2B/industrial marketing journals; and
- 4) the effect of self- and cross-citations on the 2-year Impact Factor of IMM from 1999 to 2013.

### 2. Data

We extracted article-by-article citation data from 336 journals in major business disciplines from the *Web of Science* from 1999 to 2013. This bibliometric database contained data on 5,390,245 citations from 116,750 articles.<sup>1</sup> For the purpose of this essay, we narrowed the analysis down to a list of top-tier and second-tier marketing journals as identified by Guidry, Hollier, Johnson, Tanner, and Veltsos (2004) based on citation analysis. The Top 5 marketing journals included: *Journal of Marketing* (JM), *Journal of Marketing Research* (JMR), *Journal of Consumer Research* (JCR), *Marketing Science* (MKSC), and *Journal of the Academy of Marketing Science* (JAMS).

The next five (second tier) marketing journals as identified by Guidry et al. (2004) were: *Journal of Retailing* (JR), *Journal of Business Research* (JBR), *Marketing Letters* (ML), *International Journal of Research in Marketing* (IJRM), and *Journal of Product Innovation Management* (JPIM).<sup>2</sup> To this set of top and second tier marketing journals, we added two specialized journals with specific relevance to business marketing and B2B marketing: *Journal of Business to Business Marketing* (JBBM) and *Journal of Business and Industrial Marketing* (JBIM)<sup>3,4</sup>. The final analyses were based on 436,943 citations from 8767 articles published in these 13 journals (the 12 above mentioned journals and *Industrial Marketing Management*) over a 15-year period (1999–2013). A total of 1944 of these articles cited IMM 8065 times over this period.

### 3. IMM's impact factor, self-and cross-citation rates in top tier, second tier and specialized marketing journals (1999–2013)

The journals under consideration differ with respect to the number of issues published per year, the number of articles published per issue,

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<sup>1</sup> Not all the journal records included in this database started in 1999. Some of the journals were incorporated in the database at later dates.

<sup>2</sup> *Journal of Advertising Research* was tied with JPIM in Guidry et al. (2004) ranking, but it was excluded from this analysis because of its lack of relevance to industrial/business marketing.

<sup>3</sup> Data for these two journals were only available from 2005 to 2013 in the database.

<sup>4</sup> While the *Journal of Personal Selling and Sales Management* (JPSSM) would also have been of interest in the specialized journals, we unfortunately did not have data on JPSSM in the database.

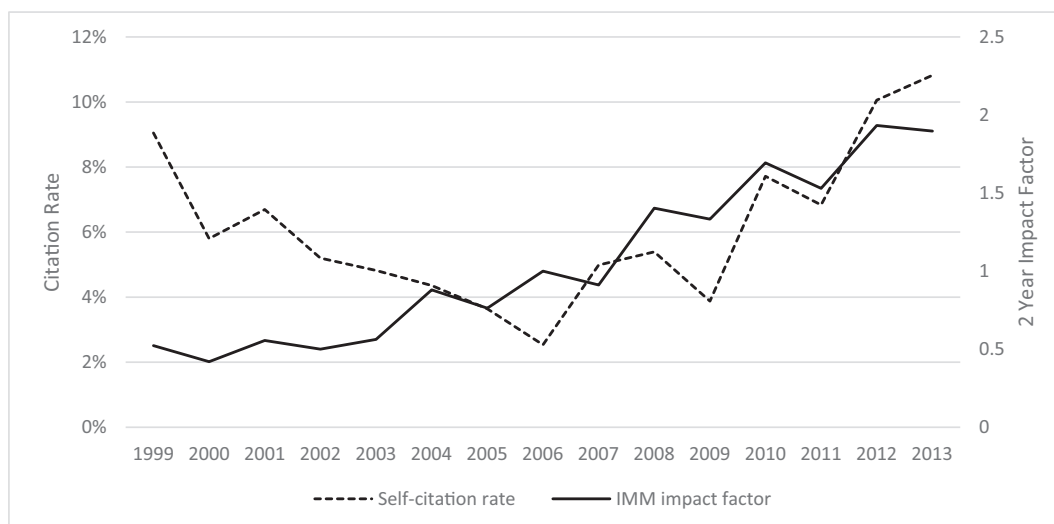


Fig. 1. IMM self-citation rate and impact factor (1999–2013).

and the number of references cited per article. In order to account for these differences, all citation data were normalized, and are presented here in terms of the percentage of all references cited in that journal in that year.

Fig. 1 presents the change in the 2-year impact factor of IMM along with its self-citation rates from 1999 to 2013. After decreasing from 1999 to 2006, the self-citation rates grew consistently, reaching nearly 11% in 2013. All this while, the 2-year impact factor of the journal increased steadily from 1999 to 2013. Fig. 2 shows the growth in IMM's 2-year impact factor relative to its cross-citations in the top-tier, and second-tier and specialized B2B marketing journals. The figure shows that IMM's citations in top-tier marketing journals remains consistently low over the 15-year period under examination. However, the impact factor of the journals tracks the citations in second-tier and specialized B2B marketing journals quite well over this period.

Next, we examined the effect of self- and cross-citation (top tier, second tier and specialized marketing journals) rates on the 2-year impact factor of IMM. Table 1 presents the descriptive statistics and correlations between the variables.

The correlation matrix shows only a weak positive correlation between IMM self-citation and its 2-year impact factor ( $r = 0.49$ ;  $p < .10$ ). This could be because the relationship between the two may not be strictly linear (see Fig. 1). IMM self-citations, on the other hand, were strongly correlated with citations in second-tier and specialized B2B marketing journals ( $r = 0.88$ ;  $p < .01$ ). Top-tier marketing journals have a significant and positive correlation with both IMM self-citation ( $r = 0.59$ ;  $p < .05$ ) and citations in second tier and specialized marketing journals ( $r = 0.54$ ;  $p < .05$ ). IMM self-citation and second tier and specialized marketing journals' citations were not significantly correlated.

In order to further ascertain the effect of citation rates on impact factors, we regressed IMM's 2-year impact factor on self- and cross-citation rates (top-tier, second-tier and specialized B2B marketing journals) over the 1999–2013 period. Table 2 reports the results of this multiple regression analysis.

Multiple regression show that only second-tier and specialized B2B marketing journals citations have a significant positive effect on the 2-year impact factor ( $\beta = 0.79$ ;  $p < .00$ ). Neither self-citation rates, nor citations in top-tier marketing journals, have any significant effect on the 2-year impact factor of IMM from 1999 to 2013. Overall, the model explained 75% of the variance in IMM's impact factor. All the variance inflation factors (VIFs) were  $< 2$ , suggesting that multicollinearity was not an issue in the analysis. Given the self-citation patterns displayed in Fig. 1, we also ran a regression analysis to test for a potential non-linear

effect of self-citation on impact factor. The results of the non-linear analysis were consistent with those seen in Table 2, suggesting that the effects obtained were stable and robust.

#### 4. Discussion

The overall pattern of our results indicates that IMM self-citations followed a very shallow u-shaped pattern from 1999 to 2013 (see Fig. 1). While the self-citation rates initially decrease, before starting to climb again, the IMM impact factor grew steadily over this period. The citations patterns show very low citation rates for IMM in the top-tier marketing journals (see Fig. 2), indicating that IMM's share of knowledge imported by top marketing journals remains relatively small. The IMM impact factor seems to track citation rates in second-tier and specialized B2B marketing journals more closely.

Regressing the IMM impact factor over the years on the rates of self-citation, citation in top-tier marketing journals, and citation rates in second-tier and specialized journals, indicates that self-citation and citation in top marketing journals had no significant effect on the impact factor of IMM (Table 2). For the period under examination, by far the biggest driver of IMM's 2-year impact factor were citations in second-tier and specialized journals. The proposed model explained 75% of the variance in IMM impact factor of IMM from 1999 to 2013.

However, in order to tease out this effect even further, we conducted post-hoc analyses where we separated the citation rates in the second-tier journals from those in specialized B2B marketing journals. This post-hoc analysis presented in Fig. 3 shows that when separated, the IMM citation pattern in second-tier marketing journals resemble those in top-tier marketing journals, with both tiers citing IMM at a fairly low rate relative to their overall levels of citations (i.e., knowledge imports). In fact, Fig. 3 shows that the pattern of growth of IMM impact factor closely follows its citation rates in specialized B2B marketing journals (e.g., JBIM, JBBM).<sup>5</sup>

These findings are indicative of a larger, long-term trend of decreasing emphasis on B2B and industrial marketing topics in the top marketing journals over the last 15–20 years. Consistent with these findings, other researchers have also noted a decreasing emphasis on strategy research in general in top-tier marketing journals (Houston, 2016). However, within the top-tier marketing journals, JAMS shows the strongest citation patterns for IMM in recent years, suggesting JAMS

<sup>5</sup> Our database contained citation data for JBBM and JBIM for only 9 years, which leaves us with insufficient data points to estimate a new regression model with specialized B2B journals included as a separate predictor.

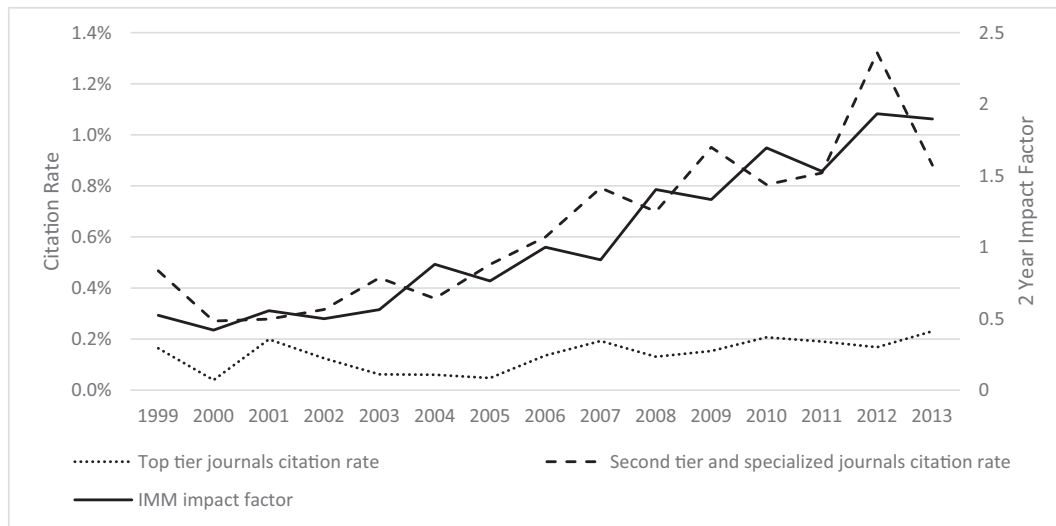


Fig. 2. IMM impact factor and cross-citation rates (top-tier, second tier and specialized B2B marketing journals) (1999–2013).

Table 1  
Descriptive statistics and correlation matrix.

	Mean	S.D.	Correlations			
			1	2	3	4
1 IMM impact factor	1.0604	0.5302	1.00			
2 IMM self-citation	0.0611	0.024	0.49*	1.00		
3 Citations in top tier marketing journals	0.0014	0.0006	0.58**	0.59**	1.00	
4 Citations in second tier and specialized marketing journals	0.0063	0.003	0.88***	0.42	0.54**	1.00

\*  $p < .10$ .  
 \*\*  $p < .05$ .  
 \*\*\*  $p < .01$ .

Table 2  
Regression results of the effect of self- and cross-citation (top-tier, second-tier and specialized B2B marketing journals) on 2-year impact factor of IMM.

	Unstandardized coefficients (p-values)	Standardized coefficients	VIF
Constant	-0.08 (0.72)	***	
IMM self-citation rate	2.26 (0.54)	0.10	1.56
Top tier journals citation rate	79.29 (0.61)	0.09	1.82
Second tier and specialized journals citation rate	139.62*** (0.00)	0.79***	1.46
Observations	15		
$R^2$	0.805		
Adjusted $R^2$	0.751		

\*  $p < .10$ .  
 \*\*  $p < .05$ .  
 \*\*\*  $p < .01$ .

may have become the de-facto strategy & B2B outlet of choice in the top-tier set. While JM shows the next best tendency to cite IMM in recent years, its in-bound citation rates from IMM are considerably weaker compared to JAMS.

In another follow-up post-hoc analysis, we went back to the larger database of 336 major business journals containing 5,390,245 citations from 116,750 articles, and extracted the Top 25 journals citing IMM from 1999 to 2013. Table 3 presents a list of these journals with year-by-year breakdown of how many times IMM was cited by each journal

each year. A closer examination of Table 3 indicates three distinct clusters of journals (and domains) in which IMM is being cited heavily. The clusters on which IMM is making a significant impact correspond to:

- Second-tier marketing journals beyond the top 7–8 set, including the specialized B2B marketing journals (i.e., *European Journal of Marketing*, *International Journal of Research in Marketing*, *Journal of Business to Business Marketing*, *Journal of Business and Industrial Marketing*, *Marketing Theory*, *Journal of International Marketing*, *International Marketing Review* etc.);
- Journals in technology-innovation management (TIM) domain (i.e., *Journal of Product Innovation Management*, *International Journal of Technology Management*, *IEEE Transactions on Engineering Management*, etc.); and
- Journals in operations management/logistics/supply chain management (OM/SCM) domains (i.e., *Journal of Supply Chain Management*, *International Journal of Operations and Production Management*, *Journal of Purchasing and Supply Management*, *Journal of Operations Management*, *Journal of Physical Distribution and Logistics Management*, *International Journal of Logistics Management*, etc.).

While at first the results related to second-tier marketing journals may seem to contradict the findings presented in Fig. 3, it is important to note the distinction between the two analyses. The findings reported in Fig. 3 pertain to the rate of citations in the top-tier and second-tier marketing journals. That is the fraction of the total citations or knowledge imported in these journals. The analysis presented in Table 3, by contrast, reports the raw numbers of actual IMM citations in these journals. These results together indicate that while IMM's share of knowledge cited in the top-tier (Rank 1–5) and second tier (Rank 5–10) marketing journals remains low, second tier marketing journals (outside the top 8 rankings) constitute some of the most frequent citers of IMM.

Thus while IMM's impact on the top 7–8 marketing journals remains light, it is a reflection of the decreasing emphasis being placed on marketing strategy research in general (and consequently B2B/industrial marketing research) in these journals during 1999–2013. However, IMM's impact factor has continued to grow at an impressive rate over this period. Much of this growth has come from sources other than self-citation. Our post-hoc analysis shows that IMM's appeal is growing, and it is having an ever increasing influence on the related domains of supply chain management (including operations management and logistics), and technology and innovation management.

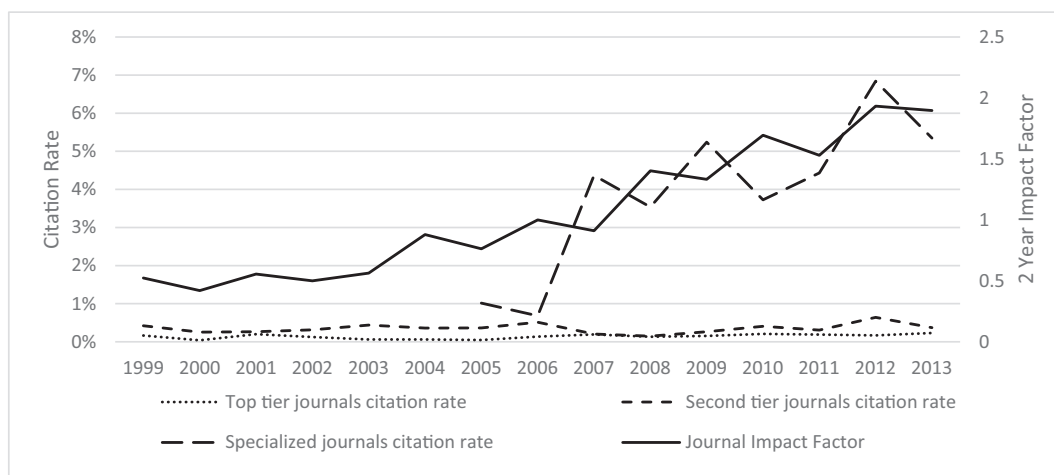


Fig. 3. IMM impact factor, self-citation rates, and cross-citation rates in top-tier, second-tier, and specialized B2B marketing journals (1999–2013).

**Table 3**  
Journals citing IMM highest number of times from 1999 to 2013.

Citing journal	Year															Total
	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	
Industrial Marketing Management	119	106	119	148	123	146	137	121	289	310	231	736	677	950	1085	5297
Journal of Business & Industrial Marketing									109	99	139	111	146	234	182	1020
Journal of Business Research	14	9	6	27	30	35	35	52	24	15	17	48	49	151	77	589
European Journal of Marketing								33	81	33	38	27	65	52	41	421
Journal of Business-to-Business Marketing								26	20	17	29	44	35	56	57	347
Journal of Product Innovation Management	17	14	14	7	16	9	12	14	10	7	25	36	32	62	64	339
Supply Chain Management—An International Journal					19	11	29	19	20	53	18	42	18	24	46	299
International Journal of Operations & Production Management	2	8	18	4	5	11	20	28	15	36	28	21	18	31	39	284
Technovation	2	5	2	1	1	4	25	24	7	30	21	11	11	25	6	175
International Marketing Review	7	1	7	3	12	9	6	10	4	19	6	30	7	13	34	168
Journal of the Academy of Marketing Science	7	1	12	4	1	2		8	18	8	14	29	24	16	20	164
Journal of International Marketing	6	2	7	5	3	4	9	27	2	4	5	40	11	25	13	163
Journal of Purchasing and Supply Management											28	37	33	46	12	156
Journal of Business Ethics	4	5	3	13	6	5	2	4	5	9	12	37	21	8	19	153
Journal of Operations Management		3	1	7	1	2	2	11	18	7	2	25	31	22	18	150
Journal of Service Management											15	50	29	39	14	147
International Journal of Technology Management	10	3	7	6	8	21	3	3	6	13	4	16	13	4	13	130
International Journal of Physical Distribution & Logistics Management										18	13	22	18	24	24	119
International Business Review							4	5		5	12	5	9	20	45	105
Journal of Supply Chain Management										16	15	5	20	18	24	98
IEEE Transactions on Engineering Management		3	1	6		5	19	8	8	4	9	8	10	10	4	95
International Journal of Logistics Management										5	14	30	10	15	20	94
Journal of World Business	1	4				9	1	1	2	8	5	5	29	10	14	89
International Journal of Research in Marketing	4		4	3	2	1	1	20		3	8	28	7	3	3	87
Marketing Theory										11	10	8	7	7	44	87

These results attest to IMM's growing influence on fields and domains beyond marketing. Thus the partial vacuum created by a reduced emphasis on B2B/industrial marketing topics in top marketing journals is being filled by the second tier marketing journals (ranked 8 and beyond), and specialized journals in related fields of supply chain management, and technology and innovation management, which show some of the highest citations of research published in IMM from 1999 to 2013. The results concerning IMM's influence on fields outside the marketing discipline, in fact, corroborate the conclusions of Touzani and Moussa (2010), who ranked marketing journals using Google Scholar data. They noted that IMM was one of the journals that ranked very high using their methodology, and speculated that one reason for this finding was the popularity of IMM among academics from other disciplines such as strategy, innovation, management, and product development. Our results show that much of the increase in IMM cites is

in journals that correspond precisely to these research disciplines (e.g., *Journal of Product Innovation Management*, *International Journal of Technology Management*, *IEEE Transactions on Engineering Management*) or to related disciplines such as supply chain management and operations (e.g., *Journal of Supply Chain Management*, *Journal of Purchasing and Supply Management*, *Journal of Operations Management*).

**5. Conclusions**

This study presents a citation analysis of the impact of *Industrial Marketing Management* on the marketing literature. We assessed the impact of IMM on top-tier, second-tier, and specialized B2B marketing journals, and in post hoc analysis, increased the scope of analysis to include journals in related disciplines as well. The period of data availability corresponded closely to the years during which Peter

LaPlaca guided the journal, so the results present a form of external validation of the impact of IMM on research in B2B marketing and elsewhere.

The results showed relatively low citation patterns for IMM in some of the top-tier marketing journals — not an unexpected finding, given the relatively lower emphasis on marketing strategy research in recent years among the top marketing journals (Houston, 2016). Nevertheless, one first-tier journal, *Journal of the Academy of Marketing Science*, shows strong citation patterns, indicating that it may be the top-tier journal most frequently (or most successfully) targeted by B2B marketing researchers. IMM has retained a strong and growing presence in the second-tier and specialized B2B marketing journals, suggesting that articles published in IMM are viewed as highly influential by authors working in B2B marketing research and related streams. The post hoc analysis showed IMM's influence increasing in other fields as well, as judging by high citation numbers in innovation and product development journals such as *Journal of Product Innovation Management*, and operations and supply chain management journals such as *Journal of Operations Management*. The impressive citation counts of IMM over the years in B2B marketing and general marketing publications, as well as in related disciplines such as innovation, indicate that, under the thoughtful stewardship of Peter LaPlaca, *Industrial Marketing Management* has consistently grown in quality, relevance, and influence on ever larger numbers of business scholars. IMM has been the leading journal for published research in B2B and industrial marketing management and strategy for many years, and thanks to the sure-handed and

insightful leadership and guidance of Editor-in-Chief Peter LaPlaca, is poised to maintain this position for years to come.

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