Starry-eyed II: the logistics journal ranking debate revisited

ABSTRACT

Purpose: In a previous paper (McKinnon, 2013), I questioned the principle and practice of journal ranking and discussed its effects on logistics research. Since then several important developments have occurred that have prompted this updated review of the issues.

Design / methodology / approach: New literature on the journal ranking debate has been reviewed. The validity of the journal ranking as a proxy measure of paper quality is explored using data from the UK Research Excellence Framework (REF) assessment. Changes to the ranking of ten logistics / supply chain management (SCM) journals in four listings are analysed and possible reasons for the relatively low status of the journals are examined.

Findings: The influence of journal rankings on the academic research process is strengthening while the debate about their legitimacy intensifies. UK REF data casts doubt on the reliability of the journal ranking as an indicator of a paper's merit. Logistics/SCM journals continue to occupy mid-to-lower tier positions in most listings, though there has been some improvement in their standing.

Research limitations / implications: The paper aims to alert those managing and undertaking logistics research to the dangers of over-reliance on journal rankings in the measurement of research quality and productivity.

Practical implications: The paper may help logistics/SCM scholars to defend the position of their discipline and resist journal-ranking-induced pressures to marginalise it and devalue its outputs.

Social implications: Academic recruitment, promotion and motivation are considered.

Originality / value: The paper sheds new light on the relationship between journal ranking and individual paper quality, on recent changes in the rating of logistics/SCM journals and on the wider debate about the use of bibliometrics in assessing research quality.

Keywords: journal rankings, logistics / SCM research, bibliometrics, REF

Introduction

Academic research is being parameterised as never before. A recent UK government report used the term 'metric tide' to describe the proliferation of indices now being used to measure research output, quality, impact and productivity (HEFCE, 2015a). Today academics obsess about journal rankings, impact factors and citation counts, conditioned to do so by deans and heads of departments who increasingly manage by metric. In the case of journal rankings, what began as an earnest attempt to 'help select additional source journals' (Garfield, 2006: 90) has ended up transforming the management and funding of research, university recruitment, tenure and promotional policies and the career plans and well-being of a generation of academics.

There are many reasons for academic decision-making becoming so strongly influenced by journal impact factors (JIFs) and rankings. On the supply side, over the past couple of decades there has been an explosion in the amount of bibliographic data available and a step-change in our ability to analyse it. The field known variously as bibliometrics, scientometrics and journalology has become a science in its own right with rich data sets, its own journals and no shortage of interesting research questions to investigate. On the demand side, citation-based journal league tables have satisfied a perennial need of university managers for a simple, standardised and objective means of assessing research that avoids the need for 'critical reading'. This need has become pressing in those countries with government-sponsored research assessment programmes, such as the UK 'Research Excellence Framework' or REF, which rate departments, schools and institutions and determine the subsequent allocation of research funding. This high level of institutional commitment to journal rankings has made them a source of power and prestige within academic circles exercised at all levels in the hierarchy from discipline to university to department to individual scholar. Those whose status is enhanced by journal rankings clearly have a strong vested interest in promoting their use as an academic differentiator.

There is, nevertheless, widespread and mounting opposition to the subordination of many aspects of academic life to journal ranking. A substantial academic literature, reviewed by Hussain (2015), Tourish and Willmott (2015), HEFCE (2015a) and others, has emerged to challenge the validity of journal ranking and examine its negative effects. Over 12,500 individuals and 840 organisations have now signed the San Francisco Declaration on Research Assessment (DORA) which recommends all stakeholders in the academic community not to 'use journal-based metrics, such as JIFs, as a surrogate measure for the quality of individual research articles, to assess an individual scientist's contributions, or in hiring, promotion or funding decisions' (ASCB, 2012). This was initially promoted by the American Society for Cell Biology but has now attracted wide cross-disciplinary support. In the German-speaking world, there has been a significant boycott of the *Handelsblatt* personal rating of business and economics academics on the basis of journal rankings, with 339 out of 'approximately 2500 considered researchers', opting out (Lorenz and Loffler, 2015: 201).

In the field of business and management, much criticism has been directed at the journal lists compiled by the Association of Business Schools (2015). Several papers published in recent

years condemning or defending this particular journal list give a sense of just how heated the debate has become. The arguments have stimulated much fine polemical writing, but also the use of some intemperate language. For example, Willmott (2011) sees journal ranking as a form of 'auto-eroticism' and suggests that 'we take pleasure from the self-bondage and self-torture of wrestling with a manuscript to render it compliant with the form of scholarship required by the targeted journal'. Rowlinson et al. (2015) in response, state that, 'according to Willmott (2011),….the fetishists who produce the ABS Guide are illiterate wankers with no passion for ideas, who can find time to endlessly revise their list but not "for the critical task of reading".....If these 'self-regulating peers' were indeed successful in abolishing journal lists perhaps they could turn their attention to the abolition of nuclear weapons next'. In a rejoinder Tourish and Willmott (2015) liken Rowlinson et al to 'an arsonist who seeks to distract attention from his or her handiwork by pointing to a fire in an adjoining building'.

I entered the journal ranking debate in 2013 with a paper in IJPDLM that explored what I saw as the damaging effects of journal rankings on logistics management research (McKinnon, 2013). I used the term 'Starry-eyed' in the title because of a growing fixation with the star-rating of journals in the ABS listings. Like Nkomo (2009), Mingers and Willmott (2010), Tourish (2011) and others, I challenged the principle, practice and use of journal ranking, but also argued that journal ranking was having a more deleterious impact on some disciplines than others and portrayed logistics as a field at risk of being marginalised by the low rating of its journals.

Over the four years since that paper was published a number of developments have occurred encouraging me to reassess the situation. First, there has been a surge of new literature on the journal ranking debate, much of which I cite in this paper. Second, the results of the 2014 UK REF has been published and data released which permits a comparison of the quality of individual journal papers as judged by an assessment panel and by the use of the journal ranking as a proxy measure. The next section reports the results of this comparison. Third, new journal league tables have been published in which the ratings of logistics / supply chain management (SCM) journals have been recalibrated. The penultimate section considers how this has affected the relative standing of ten of these journals. The paper concludes with a brief discussion of where current research assessment trends appear to be heading and a set of principles whose adoption might help logistics journals gain more respect from academic peers.

Paper-specific Evaluation versus Journal Rank Proxy

There is much criticism of the widespread practice of assigning the average rating of a journal to all the papers that it publishes, essentially using the journal ranking as a proxy measure of every paper's quality. There are basically two grounds for this complaint. First, journal rankings rely heavily on citation scores but the number of times a paper is cited is only one of several indicators of its research quality (Milne, 2002). Second, and more importantly, the distribution of citations across all the papers published by a journal is usually highly skewed, rendering the impact factor a poor measure of a particular paper's citation score (Mingers and Leydesdorff 2015). Ellinger and Chapman (2016: 4) acknowledge that

'impact factors are susceptible to inflation due to the influence of a single outstanding article' though note that IJPDLM's citation profile has not been distorted in this way over the past five years. Taking a broader view of journal publishing, Garfield (2006: 91), the 'father' of the journal impact factor, reckons that the 'so-called 80/20 phenomenon applies, in that 20% of articles may account for 80% of citations'. The distribution of citations is generally skewed to the right (van Leeuvwen and Moed, 2005; Mutz and Daniel, 2012), as in the case of six management science / OR journals whose citation patterns over a 14 year period were analysed by Mingers and Burrell (2006). Despite this clear scientometric evidence, it is now common practice, indeed almost obligatory, for business academics applying for jobs, tenure and promotion to insert the journal impact factor and/or ranking against the papers in their publication lists. Merely getting a paper into one of the higher-rated journals is worn like a badge of honour, regardless of its subsequent readership, citation and impact on business practice. On the other hand, Coleman et al (2012) , Rao et al (2013) and Maloni et al. (2015), in their measurement of the research productivity and impact of logistics scholars, commendably avoid reference to journal impact factors and instead base their analyses on paper-specific citation data.

To illustrate how poor a proxy of paper-level citation journal ratings can be, I selected two professors in the field of logistics / transportation and analysed the number of times papers that they published over the period 2009 -2013 were cited by mid-2015. Neither of these professors was consulted, I am not one of them and, for obvious reasons, they must remain anonymous. The choice of professors was not random. I deliberately chose researchers whom I knew to be near opposite ends of a publication spectrum. The intention was to highlight a major flaw in the current system of research appraisal rather than produce generalizable results. I used the 2015 ABS list to obtain ratings of the journals in which the professors published and Google Scholar Citations to determine the number of times their papers had been cited between 1.5 and 5.5 years after publication. The two professors had markedly different publication profiles. Professor A published eight papers over the four year period, mainly in top-rated 4* and 3* journals (Figure 1). Professor B published three times as many papers (26 in total), but predominantly in 2* and 1* journals. Despite publishing in supposedly inferior journals, professor B's papers had accumulated almost seven times more citations than those of professor A (933 as opposed to 139), achieving an average number of citations per paper (35.9), just over twice that of professor A's papers (17.4). In many business schools, professor A would be feted while professor B would, quite unfairly, be considered to be under-performing because of his / her propensity to publish in lower-rated journals.

Data from the 2014 REF assessment in the UK permits a broader empirical analysis of the relationship between a journal's ranking and the quality of individual papers it publishes. The analysis relates to business and management research. The sub-panel responsible for evaluating research in this field, like all the other subject sub-panels, was 'explicitly instructed not to refer to any additional sources of bibliometric analysis, such as JIFs, or other journal-level metrics in their assessments' (HEFCE, 2015a). The chairman of the Business and Management sub-panel confirmed that it would 'not base its rating of outputs on any

journal ranking list' (Anon, 2013). So the sub-panel on 'business and management' and their subject advisers were required to read all the papers submitted to the REF and assess their quality on a 4-point numerical scale from 1 star to 4 star. Quality was judged on the basis of 'originality, significance and rigour' and graded as internationally leading (4*), internationally excellent 'but falling short of the highest standards of excellence' (3*), 'recognised internationally' (2*) and 'recognised nationally' (1*). Papers could be 'unclassified' if the 'quality falls below the standard of nationally recognised work – or does not meet the published definition of research for the purposes of this assessment' (HEFCE, 2014).

The practicality and validity of using peer review in a national research assessment has been questioned (Sayer, 2015). Taylor (2011), for example, contends that members of the assessment panels would need 'super-human powers' to review their quota of research outputs in the available time. The limited range of specialisms represented on the panel also means that the review will usually be conducted by someone with less subject expertise than the original journal referees. On the other hand, the panel members have a different role from these referees in taking a broader cross-sectional view of research quality and grading it on a consistent scale of international and national importance. The burden of reviewing that they take on is undeniably daunting, but to my knowledge panel members have not complained that the task is unmanageable.

Grading data at the level of individual papers was obtained from the 2014 REF exercise, permitting comparison of a paper's REF score with the ABS ranking of the journal in which it appeared. The data relate to a sample of 908 journal papers submitted by six institutions and assessed by the Business and Management sub-panel. The data were grouped in a frequency table and the anonymity of the paper and its author(s) preserved. The papers were not differentiated by business specialism. 87% of the papers submitted by the institutions were in journals graded 3* or 4* by ABS. This preponderance of papers in higher-rated journals is understandable as academics had to identify their four best papers and naturally prioritised those in journals with higher ABS scores. Many university departments discouraged, or in some cases vetoed, the submission of papers published in journals with less than a 3* ranking. Only 67% of the papers attained the top two REF levels, suggesting that the REF appraisal was more rigorous at the upper end of the scale. Figure 2 shows how the difference between the ABS and REF ratings was negatively skewed. Half of the papers obtained the same REF and ABS ratings, while the REF grade was higher for 14% and lower for 36%.

As Figures 3a and 3b show, the matching of REF and ABS grades was stronger at some levels than others. In Figure 3a, for each ABS journal ranking there are four columns corresponding to the REF 1-4* rating. The heights of the columns show the percentages of papers in the different ABS journal categories given these REF ratings. The solid black columns represent papers whose REF and ABS ratings are identical. This shows that the degree of correspondence between the two assessments was 53-55% for papers in the ABS2 and ABS3 brackets and below 40% for the other two categories. When the comparison is inverted (Figure 3b), differences in the degree of correspondence significantly widen. 70%

of the papers judged to be REF 3* had been published in ABS 3* journals, but only, respectively, 21% and 13% of papers in the REF 2 and REF 1 categories had similar ABS alignment. The REF sub-panel was much more positive about these papers than their ABS journal grading would suggest. This could have particular significance for logistics / SCM, because, as we shall see later, most of its core journals are graded 2* and 1* by ABS.

One must, of course, exercise caution in interpreting these results. Neither the sample of papers nor the institutions from which they originated were selected at random. The results are, therefore, not necessarily generalizable. The methodologies underpinning the evaluations and the numerical scaling are also quite different. Far from invalidating the analysis, however, these differences are the very reason for conducting it. Many deans, heads of department and research directors in UK universities are basing their preparations for the next REF in 2021 on the ABS ratings of their staff's publications. They are recruiting, awarding tenure, promoting, distributing teaching loads, administrative tasks and research funding on this basis, despite the fact that ABS journal rankings are an unreliable predictor of a paper's REF rating, particularly if it is published in journals deemed to be inferior by ABS. In the UK it is through this REF connection that the ABS list exerts its influence on academic life. Wells (2015: 1) speculates that 'if the REF did not exist, the ABS list would be little more than a coffee-time amusement for academics'.

According to our analysis, there is only a 50% chance overall of the ABS journal ranking predicting the right REF paper grade. This finding confirms the observation by Tourish and Willmott (2015: 41) that the ABS Guide 'cannot be relied upon to forecast likely assessments of (REF) panel members, despite a proclivity of many business and management schools to make this administratively congenial assumption'. They are also in line with a comprehensive analysis of the correlation between 2014 REF scores and a set of fifteen bibliometric and altmetric[1] indicators 'at a paper-by-author output level' (HEFCE, 2015b). This analysis of approximately 150,000 research outputs across all disciplines found that 'individual metrics give significantly different outcomes from the REF peer review process, showing that metrics cannot provide a like-for-like replacement for REF peer review' (p iii). It is hardly surprising, therefore, that an independent government study of the REF (Stern 2016) has concluded that peer review of individual research outputs should remain the dominant mode of assessment though it conceded that subject panels should be allowed to make some use of bibliometric data to assist this process.

Ranking of Logistics Journals.

The rankings of ten of the main journals containing the words logistics or supply chain management in their titles have been reviewed over the period from 2010 to 2016. Collectively these journals publish around 460 research papers annually and account for a substantial proportion of the total peer-reviewed output of academic logistics / SCM

[1] Altmetrics are alternative metrics that supplement traditional citation counts with online data on numbers of downloads, mentions on social media sites and web profiling on research sites such as ResearchGate and Academia.edu.

specialists. This analysis uses data from the four main journal ranking schemes that include logistics / SCM papers in their lists. Two of the most widely quoted lists for business journals, the Financial Times and so-called Dallas list (of the University of Texas), are absent as neither include any of the ten journals. Also excluded are lists compiled by individual universities such as Erasmus, Cranfield, Vienna and Queensland. Harzing (2016) provides a compendium of journal ranking data for nine lists compiled since 2012, including the four used in this analysis: UK Association of Business Schools[2] (ABS), the German Academic Association for Business Research (VHB) whose list is known as Jourqual, the French National Center for Scientific Research (CNRS) and the Australian Business Deans Council (ABDC). The use of these four journal lists gives the analysis an international perspective and adds methodological diversity as they are compiled in markedly different ways:

ABS uses evidence from five sources: 'assessments of leading researchers', mean 5-year citation-based impact factors, 'evaluation by the Editors and Scientific Committee members', frequency of citation in the world's top five journal lists for business and management (a rather incestuous criterion) and the age of the journal (Association of Business Schools, 2015). It is important to note that the objective measurement of citations is only one of five criteria and that this is overlain by the subjective judgement of subject experts and an editorial board. The relative weightings of the criteria are not disclosed.

VHB derives its list much more democratically. Its journal rankings are based on the opinions of the organisation's membership. In 2016 over 1100 members submitted a total of 64,113 journal evaluations. To obtain a rating a publication must receive a minimum of 25 ratings and in 2016 651 cleared this threshold. VHB makes no reference to journal impact factors and concedes that the assessment is entirely subjective, 'composed of the different information and experiences of everyone polled (e.g. individual experiences as an author, articles read, experiences of review processes, discussions with colleagues etc.)' (VHB, 2017).

CNRS relies heavily on consultation with experts in France and abroad in universities which achieve high ratings. This listing also takes account of data from the Thomson Reuters[3] Social Science Citation Index (SSCI) and other sources (Harzing, 2016).

ABDC adopts a multi-criterion approach to selecting journals for their list and rating them. The Council considers the 'relative standing of the journal…relying mainly on citation metrics and other reputable journal quality lists', the international calibre of its editorial board, the nature of its peer-review system, its 'track record in publishing influential papers', its 'sustained reputation' as well as influence on 'hiring, tenure and promotion decisions' (Australian Business Deans Council, 2016). This last criterion introduces an element of circularity into the process of research evaluation. Overall ABDC emphasises the 'relevance

[2] The Association of Business Schools has now received charter status and become the Chartered Association of Business Schools.

[3] Following the sale of the Thomson Reuters Intellectual Property & Science business to Onex Corporation and Baring Private Equity Asia in October 2016, the Web of Science citation index is managed by Clarivate Analytics which now publishes the Journal Citation Report (JCR).

of both quantitative and qualitative information that requires professional judgment in a complex multi-dimensional decision making setting'. The Council also offers reassurance that 'the rating exercise is not simply based on a trivial impact factor ranking'.

To summarise, three of the rating schemes use citation-based factors as part of a wider multi-faceted assessment which includes significant use of qualitative, subjective judgement but exactly how much is not made clear. The fourth (VHB) does not directly use impact factors though some, perhaps many, of its members may take them into account when making their evaluations.

Table 1 shows how eight of the logistics / SCM journals were rated in the 2010-11 and 2015-16 versions of the four schemes. The 2010-11 listings are shown in parenthesis. *Maritime Economics and Logistics* and *Logistics Research* are included despite their limited presence in these listings. It should be noted that the ABS and CNRS numerical scales go in opposite directions.

One can make several observations from the data in Table 1:

1. The judgement in 2012 that the average rating of these journals was 'mediocre' (McKinnon, 2013) continues to apply. On the ABS, VHB and CNRS lists, logistics / SCM journals are all second or third-tier. Only one of the journals on one of the lists managed to secure top-billing (*Transportation Research* part E in the ABDC listing).

2. On balance, however, the situation has improved over the past 5-6 years. There have been seven instances of a journal being raised by one level and two of a two-level upgrade (light shaded cells in Table 1). JSCM has performed well, enjoying an upgrade in three of the four schemes. On the other hand, two journals, one of which (IJLM) published many of the seminal papers on the subject in the 1980s and 90s and was rated one of the top three logistics journals in 2004 (Kumar and Kwon, 2004) and 2009 (Menachof et al., 2009), were relegated by ABS from a 2 to 1-star rating (dark-shaded cells). It is interesting to note that while ABS downgraded IJLM, both VHB and ABDC raised it. Such disagreements between journal ranking agencies must surely undermine confidence in their validity. This leads to the third observation.

3. The same journal can get significantly different ratings in different lists. It is difficult to make direct comparisons because the number of tiers varies between schemes, but some differences are quite pronounced, as for IJLM, IJLRA, JBL and SCMIJ. The overall status of logistics / SCM journals also varies between the schemes, with ABDC rating them most highly, followed in order by VHB, CNRS and ABS. As each country uses its own rating scheme, one might expect to see some international divergence in the relative standing of logistics / SCM as journal rankings impact on recruitment, promotion and resource allocations.

If the ratings were based entirely on the same set of impact factors from the definitive source, (i.e. Thomson Reuters / Clarivate Analytics Web of Science) one would expect them all to be identical. Indeed there would then be no need for separate lists. The

differences therefore reflect variations in subjective appraisal of the journals by experts, either small groups of subject specialists appointed by the organisations or, in the case of VHB, its entire membership of over 1000 researchers. Much depends, therefore, on the selection of the experts by ABS, ABDC and CNRS and by the disciplinary cross-section voting in the VHB membership poll. This partly explains the poor showing of logistics / SCM journals in the ABS list. Logistics / SCM is simply regarded as a branch of operations management and lacks separate representation on the ABS panel. Contrast this situation with tourism, which arguably as a field of business management is no more important than logistics / SCM, which has a spokesperson to lobby on its behalf and curiously manages to have three journals in the top 4* bracket. Tourish and Willmott (2015: p40) argue that 'peer review retains the confidence of diverse communities of scholars to the extent that it adequately responds to, and appreciates, the variety of topics and approaches.' This requires that panel 'members are selected to reflect diversity'. However, a perusal of the publication list of the domain specialist appointed by ABS to represent operations management reveals that he has had little involvement with logistics and supply chain management. ABS has made little effort to consult the logistics professoriate in the UK to compensate for this lack of specialist expertise. On the contrary, following the unsolicited submission of evidence by a group of senior UK professors on behalf of the Logistics Research Network making the case for an elevation of logistics / SCM journals, ABS lowered two, raised one and left the rest unchanged.

Possible Reasons for the Lower Ranking of Logistics Journals

Lack of personal representation on the key decision-making panels is not the only reason for logistics/SCM journals languishing at lower positions in the journal lists. There are several other possible reasons:

First, academics in this field may simply have to face the fact that the quality of the research they publish in these journals is of lower quality and less relevance. This is a very difficult hypothesis to test, and would naturally be strongly disputed by scholars in the field. Whatever the starting point and baseline for any quality assessment, there is a danger that persistently poor journal rankings can become self-fulfilling and depress the standard of papers published. Figure 4 compares the chain of consequences for a journal receiving a low rating with one that is highly ranked. The former can enter a vicious cycle in which authors are discouraged or prohibited by their university management from publishing there. As the number of good submissions diminishes, average quality can deteriorate, referees and editors can become harder to find, papers can be excluded from literature reviews and citations and impact factors can decline risking a further descent in the journal rankings. This contrasts sharply with the virtuous cycle that highly-rated journals enjoy, but at the expense of lengthening publication lead times, slower research dissemination, greater wastage of research results and higher levels of demoralisation among academics denied access to these prized outlets.

Second, logistics / SCM suffers from being treated as a branch of operations management and operational research, fields that are already dominated by a few long-established and highly-

rated journals, such a Management Science, Production and Operations Management and the Journal of Operations Management. As Hussain (2005: 129) explains, 'A journal's impact factor can be severely impacted by the subject area to which it has been allocated. There are many journals that could reasonably be allocated to two or three different ABS subject categories, giving potentially quite different quartile ratings'. Good papers that could have been destined for specialist logistics journals get lured into more general operations management/OR journals with higher ratings. Zinn and Goldsby (2014) condone this 'leakage' arguing that 'only publication in journals broadly accepted as 'A' will boost the standing of logistics research in business schools where there is a logistics program and in the broader academic community'. Lambert and Enz (2015), on the other hand, urge greater loyalty to specialist logistics / SCM journals when they say that 'publishing our best research in other journals is a catch-22. How will logistics journals ever reach premier journal status if we publish our best work in non-logistics journals'.

Third, most of the logistics and SCM journals were relatively late in gaining official impact factors in the citation database of Thomson Reuters (2015). It took an average of 25 years for six of the core journals (SCMIJ, JBL, IJPDLM, IJLRA, JSCM and IJLM) to secure impact factors (McKinnon, 2013), despite evidence that they merited inclusion in the ISI data base much sooner (Chapman and Ellinger, 2009) and compared favourably with journals in other business disciplines (Ellinger and Chapman, 2011). Although all but one of the journals (*Logistics Research*) now have impact factors, it takes time for this status to alter perceptions and strengthen a journal's reputation.

Fourth, the intrinsically practical, empirical and industry-oriented content of many of the outputs of logistics / SCM research tends to be less valued within the operations management / OR community than more theoretical and mathematical contributions. Researchers seeking an outlet for the latter type of paper have a suite of top-rated journals available, many of which rate mathematical rigour and complexity more highly than relevance to the real world of business. This introduces a disciplinary bias into the journal ranking process which works against the interests of those working in more applied fields.

Fifth, longer established, more generalist journals naturally have a wider readership and larger citation base than the journals of younger, more specialist fields. Although in research terms logistics / SCM is now a fairly mature field, it is still relatively niche by comparison with disciplines like marketing, finance, management science and organisational behaviour. Mingers and Wilmott (2010: 1056) note that 'journals dedicated to peripheral areas and approaches are often invisible or marginal to citation indices. As a consequence, they tend to be poorly rated within, or excluded by, journal lists'. While logistics / SCM is not peripheral, it is not sufficiently mainstream to enjoy the benefits of a large citation base.

Whatever the causes of the relatively low rating of logistics / SCM journals, the negative consequences are even more evident today than in 2012 at personal, institutional and disciplinary levels.

At a personal level, academics publishing in lower-rated logistics / SCM journals are less likely to be employed, tenured and promoted. They can become 'second class citizens' within business schools favouring an 'elite' which regularly publishes in the top-rated journals. They can suffer the penalties, frustrations and indignities of being deemed to be an under-achieving researcher, shouldering higher teaching and administrative loads, being denied research funding and the opportunity to attend conferences. These may be legitimate sanctions where an academic is genuinely under-performing but not where his or her only misdemeanour is to publish in the core journals of their discipline read by the target audience for their research. Some active researchers were excluded from the UK REF 2014 assessment because of the low ABS ratings of the journals in which they had published. This practice can not only blight the academic careers of those excluded; it also denies their papers the opportunity to be independently evaluated in the mistaken belief that there is a close correlation between REF paper-based scoring and ABS journal level ranking. The earlier analysis demonstrated that this is not the case[4].

At an institutional level, it is difficult for logistics to compete with other fields whose core journals command higher positions in the ranking. Business schools priding themselves on the number of papers they can publish in these journals naturally skew staffing and resources towards subject areas that can deliver them.

The negative effects on the future development of the discipline are perhaps the most worrying. Under pressure to publish in higher-rated journals, logistics researchers often have to shift the focus of their research, adopt different approaches and methodologies and express their arguments in different ways. Hussain (2015: 120-1) speaks of researchers having to 'twist and contort their work into an appropriate format… even if they do not believe that this may be the best way to present the research'. The issue is not simply presentational, however. Much cherished academic freedom to research what you deem important in a way you judge most appropriate gets eroded as you strive to stay within the prescribed subject area and methodological boundaries of the more prestigious journals. As these journals are inundated with submissions, they can afford to be discriminating and 'are at liberty to sift what they receive to comply with their entrenched standards of scholarship' (Tourish and Willmott, 2015, p.42). Logistics researchers should not have to 'use increasingly complex methodologies just because they are in vogue, or to prove (they) can' (Mollenkopf, 2014). Moreover the traditional diversity of logistics, reflecting the convergence on this subject area of specialists from many different disciplinary backgrounds such as marketing, engineering, management, mathematics, economics and geography, is at risk of being replaced by what Mingers and Willmott (2010, p.13) call an 'academic monoculture in which business school faculty are induced to emulate the values and forms of scholarship that dominate the most

[4] The practice of universities using journal rankings to decide whose research outputs should be submitted to the REF is widespread (Rohn, 2013), despite contravening that government's express wish not have these rankings used in the research evaluation process. What is the point of telling the REF panels not to refer to journal rankings when universities have already used them to 'weed out' of the assessment those publishing in journals with lower impact factors.

highly-rated (largely US) journals'. This induces fundamental changes in the nature and scope of logistics research and breaches the recommendation of HEFCE (2015a: 50) that 'metrics should not become the "tail that wags the dog" of research practice'.

When journal rankings alter the course and content of a discipline, it is not just a matter for academic debate, particularly when the discipline in question is essentially pragmatic and risks losing relevance to the practitioner community it serves. Targeting a paper on a top-rated journal often means prioritising theory over practice and making the arguments accessible only to those with 'high domain-specific knowledge' (Woxenius, 2015). The practical relevance of the field and the engagement of researchers with practitioners then suffers as impressing your academic peers becomes much more important than doing something relevant for industry and the community (Lambert and Enz, 2015).

Journal rankings also affect what might be called the governance of the discipline. Self-appointed groups of academics whose personal or institutional status has been enhanced by journal impact factors then take the ranking process to higher levels and apply it to departments, business schools or universities. This form of academic tribalism is much in evidence in the field of supply chain management. An SCM Congress has emerged, composed of 'scholars whose institutions were chosen based on a top-10 ranking of supply chain management programs by U.S. News and World Reports' The Congress provides 'governance surrounding the journals that are encompassed within the SCM Journal List'. This list comprises eight journals split into two sets of four, one labelled 'empirical' and the other 'analytical' – a rather strange choice of terms implying that empirical data does not require analysis. In an act of disloyalty to most of the specialist journals in SCM / logistics, members of the Congress include only two of the list of ten in Table 1 in their SCM list (JBL and JSCM). They fill the remaining six slots with top-rated operational research / management science / OR journals. They then seek endorsement for their choice of journals by inviting visitors to their website (www.scmlist.com) to 'agree that the SCM Journal List represents a broad array of high quality research in the SCM discipline' – which it patently does not. This is done on a 'take it or leave it' basis with no option to suggest alternative journals and constitutes a rather dubious consultation exercise. It is hardly surprising that, up to February 2017, a third of the endorsements came from the top 20 out of 434 universities ranked on the 'empirical' SCM scale. Who wouldn't vote for a system that elevates the standing of one's own institution in a higher education system subject to intense competition for students and resources, particularly in North America. Incidentally, all eight journals on the SCM list are published in the US and 72% of the endorsements are from North American academics.

One must never lose sight of the fact that this ranking edifice extending from the research paper to the academic to the department to the institution is built upon a spurious correlation, that between the average impact factor of the journal and the citation performance, let alone quality, of an individual paper. It is ironic that academics who pride themselves on being methodologically rigorous in their studies conveniently overlook this fundamental flaw in the way they grade research performance at personal, departmental and institutional levels.

Conclusion

Although the debate about journal rankings has intensified over the past five years and evidence of their shortcomings and perverse effects has continued to accumulate, their influence on many aspects of academic life appears undiminished. This paper has offered three contributions to the continuing debate:

- a review of recent literature on the subject, much of it originating from the UK where the national assessment of university research performance has stimulated new scientometric research and scholarly discussion.
- empirical support for the view that journal rankings are a poor proxy measure of the quality of an individual paper in the field of business and management. This casts doubt on the validity of using of these rankings to rate the research performance of individual researchers and the institutions in which they work, particularly in the case of papers published in lower-rated journals. The business and management sub-panel of the UK REF graded these papers more highly than the journal status would suggest.
- updates on the relatively low status of specialist logistics and SCM journals in the major journal lists and the effect that this is having on the development of the discipline. While there has been an overall improvement in the standing of logistics / SCM journals, they remain predominantly in the second or third tiers of the four journal lists examined.

If, as a researcher in logistics or some other field, you agree that over-reliance on journal ranking is having a harmful effect there is little that you can do individually to change the situation. You have to accept that journal rankings are now deeply embedded in university assessment procedures and the mindsets of those who manage them. You can resist the pressure to reorient your research to meet the requirements of highly-ranked journals and continue to support lower ranked journals, but this may carry workload and career penalties. Change has to occur at a system-level and needs campaigning through academic forums and initiatives such as DORA. These bottom-up efforts to reform the appraisal of research performance are likely, at least in some countries, to be reinforced by top-down pressure exerted by government agencies. The 'metric tide' report cited at the start of this paper provides an excellent example of such pressure. Published by the Higher Education Funding Council for England (HEFCE, 2015a: xii), the report argues that 'journal-level metrics, such as the JIF, should not be used' by HR managers, recruitment and promotion panels, and Universities UK (the organisation representing British universities). It goes on to recommend that the assessment of research is based on five principles:

Robustness: this requires the use of the most accurate and consistent metrics available to judge research quality. Using the average impact factor or the ranking of the journal as a surrogate for the quality of an individual paper is unlikely to meet this requirement.

Humility: this is defined as an acceptance that 'quantitative evaluation should support – but not supplant – qualitative, expert assessment'. It infers that those who use the journal

ranking as dominant, or sole, criterion in judging research performance have lacked humility and failed to recognise the unfairness and injustice it causes.

Transparency: this demands full disclosure of the processes of data collection and analysis used in research assessment, permitting independent scrutiny and verification. Most of the current systems of journal ranking lack transparency. This makes it difficult to determine how the gradings are actually derived and to check for disciplinary biases.

Diversity: this principle has particular relevance to fields, such as logistics, which are disadvantaged by the current system of journal ranking. It recommends the use of a 'range of indicators to reflect and support a plurality of research' accommodating variations in the scope, maturity, approaches and methodologies of particular fields.

Reflexivity: this involves 'recognising and anticipating systemic and potential effects of indicators', presumably on such things as the status of particular disciplines, the distribution of research funding, academic career paths and engagement with the business world. It is because of a lack of 'reflexivity' in the past that we are now suffering the unintended consequences of excessive reliance on journal rankings. Reversing this process will not be easy, but at least there is growing recognition that the current system of journal-based research assessment is defective and needs to be fixed.

These principles provide a sound basis for a gradual relaxation of the current stranglehold of journal impact factors on the measurement of research performance and quality in the field of business and management in general and logistics / SCM in particular.

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Figure 1: Number of journal papers published by two anonymous professors in the logistics / transport field between 2009 and 2013 and classified by ABS journal ranking. (4* high 1* low)

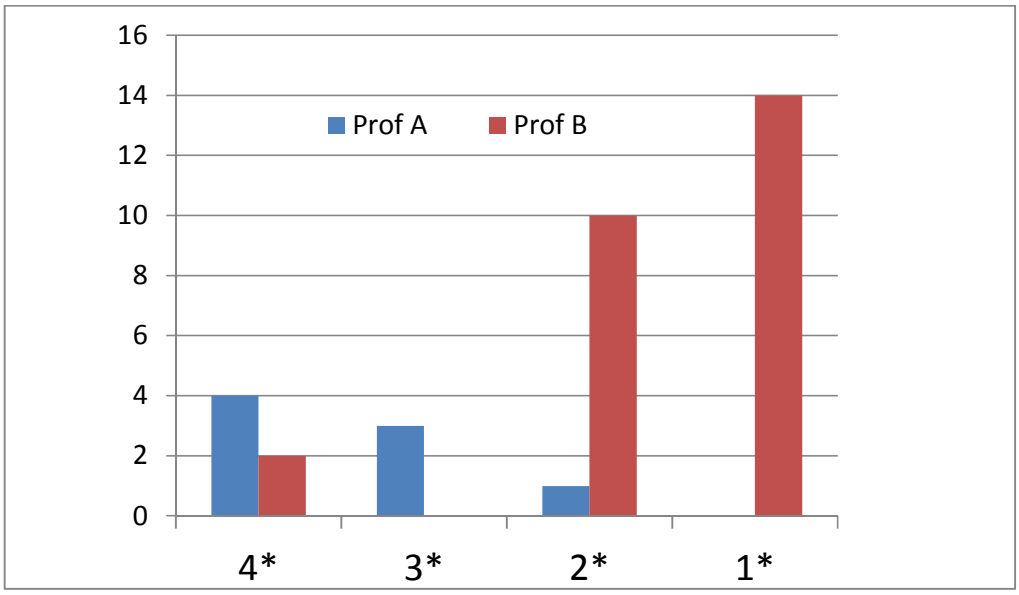


Figure 2: Comparison of REF grades against ABS grades for sample of business and management journal papers

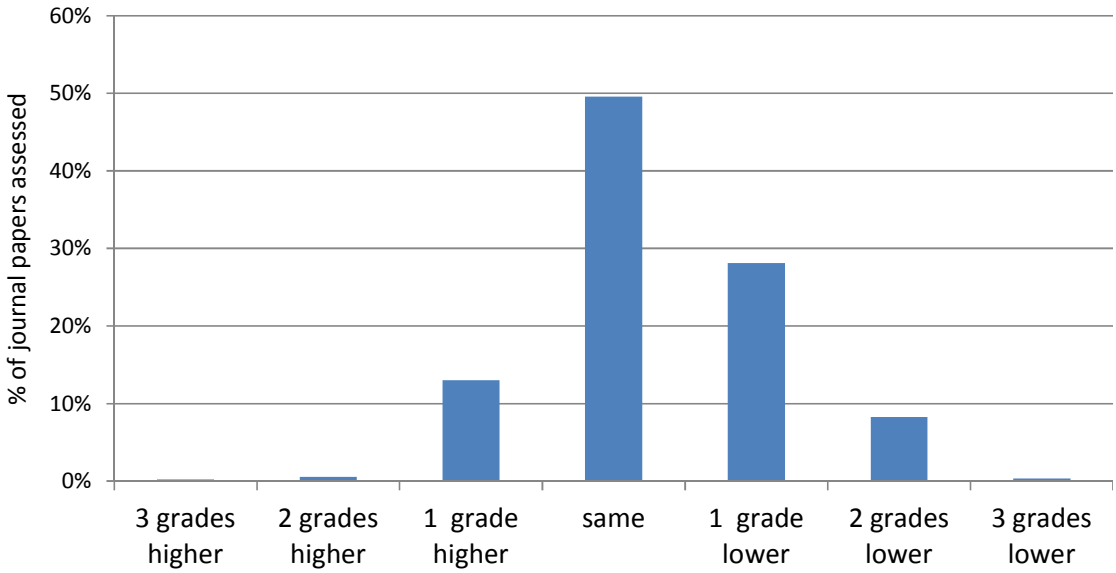
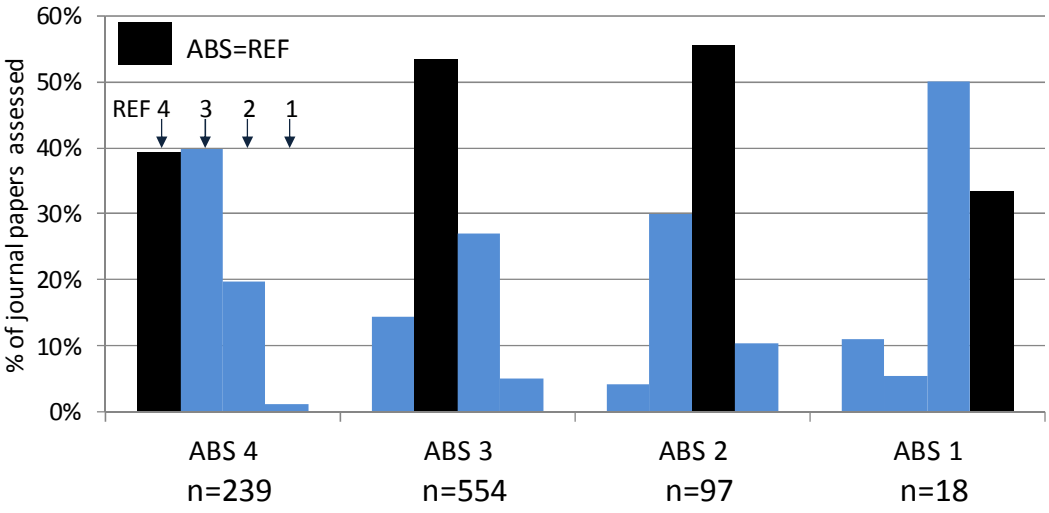
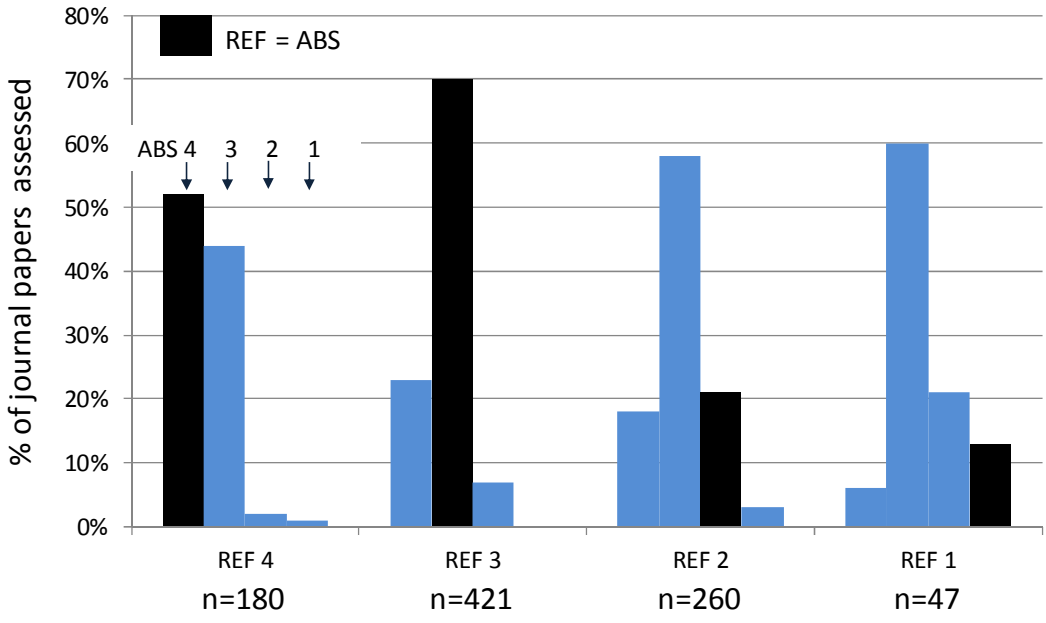


Figure 3: Comparisons of ABS 2010 and REF 2014 rating of journal papers in business and management



(a)



(b)

Figure 4: Chain of consequences for journals with low and high rankings.

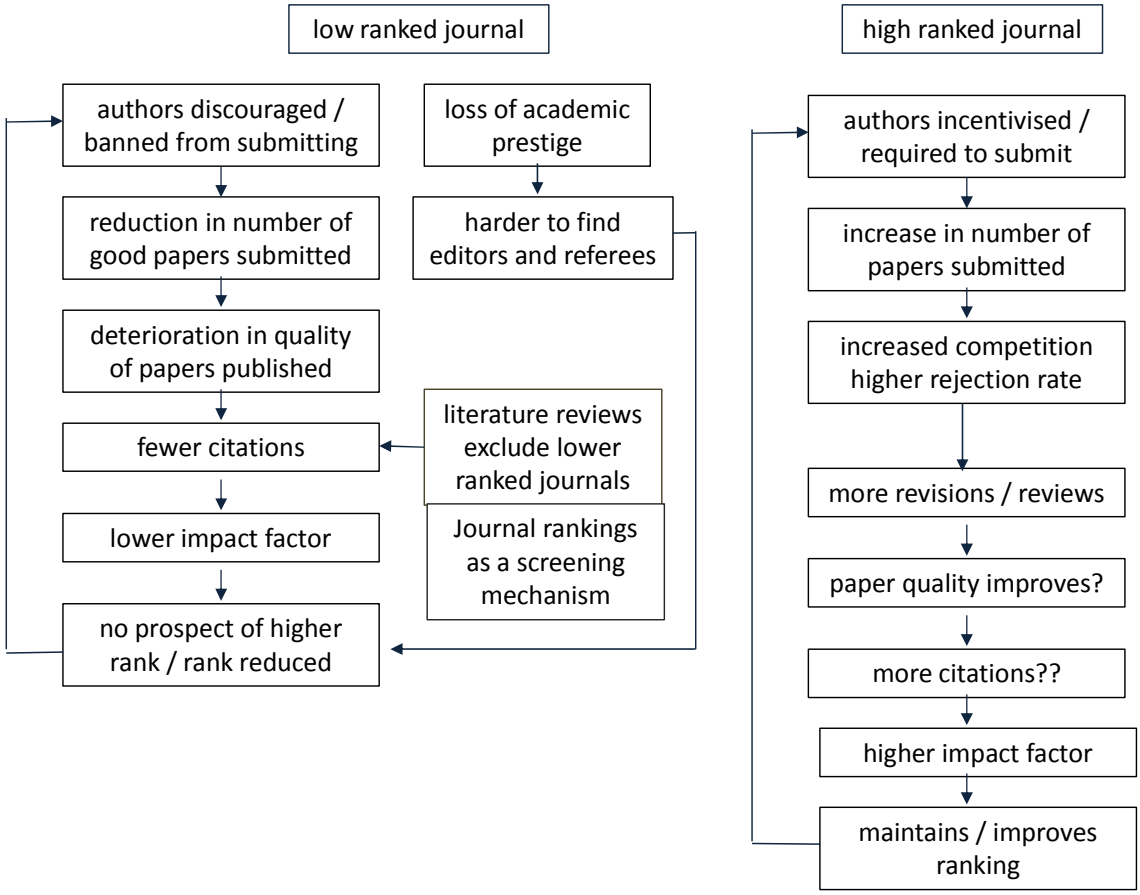


Table 1: Rating of 10 logistics / supply chain management journals in the 2010-11 and 2015-16 editions of four journal ranking schemes.

Journal	ABS rating (UK) 2015 (2010) (1 low 4 high)	Jourqual 3 / VHB (Germany) 2016 (2011) (A high D low)	ABDC (Australia) 2016 (2010) (A high C low)	CNRS (France) 2016 (2011) (1 high 4 low)
International Journal of Logistics Management (IJLM)	1 (2)	C (D)	A (B)	3 (3)
International Journal of Logistics: Research and Applications (IJLRA)	1 (2)	C (C)	B (B)	3 (3)
International Journal of Physical Distribution and Logistics Management (IJPDLM)	2 (2)	B (B)	A (C)	3 (3)
Journal of Business Logistics (JBL)	2 (2)	B (B)	A (B)	2 (2)
Journal of Supply Chain Management (JSCM)	3 (1)	B (B)	A (B)	3 (4)
Logistics Research (LR)		C (C)		
Maritime Economics and Logistics (MEL)	1 (1)		B (B)	
Naval Research Logistics (NRL)	3 (3)	B (B)	B (B)	3 (3)
Supply Chain Management: an International Journal (SCMIJ)	3 (3)	B (C)	A (A)	3 (3)
Transportation Research E: Logistics and Transportation Review (TRE)	3 (3)	B (B)	A* (A)	2 (2)