Case selection biases in management research: the implications for international business studies

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Abstract: This paper reports on a bibliometric analysis of peer-reviewed articles in business and management studies, initially conducted in 2004 and repeated in 2009. It reveals that a small number of firms (11 in 2004) account for over 50% of the total 'hit count' for all firms in our list of the largest 200 multinationals. The major implication of this finding is that we gain most of our academic insights *and* our 'best-practice' lessons on management from a small, unrepresentative group of 'exemplar' companies. Seven case selection biases are identified, showing a disproportionate focus on a sub-set of firms that are: global and bi-regional; US-based; large; manufacturers; in dominant positions in important industries; long-term survivors; owners of strong brands. In this paper, we examine the first of these biases most closely. We conclude that business and management studies tend to overestimate the benefits and underestimate the difficulties of internationalisation.

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1   Introduction

Most firms are not global but are home-region oriented. However, academic studies and practitioner lessons in management and business studies focus consistently on global and bi-regional firms. What are the implications of this case selection bias for evolving theories of international business? This paper presents data supporting these statements and reflects on how an overwhelming focus on an unrepresentative sub-sample of firms may be influencing the development of international business theory and the development of 'best practice' directed at the majority of managers responsible for more 'average', home-region-oriented firms.

In addition to the bias towards studying global and bi-regional firms we identify six other related types of case selection bias towards: US firms, large firms, manufacturing firms, firms that hold dominant positions in important industries, firms that have been in existence for a long time and firms with a strong, recognisable brand. After a brief description of each, we focus on the international business dimension, examining two related propositions drawn from the data:

1   as relatively few firms expand their activities significantly beyond their own region, perhaps international business studies have tended to overestimate the benefits and underestimate the costs or difficulties of internationalisation

2   those firms that have developed more global or bi-regional structures are highly unusual and may well be inappropriate benchmarks for theory or practice.

2   The significance of the case approach

Good academic research has to overcome the double hurdle of rigour and relevance (Pettigrew, 1997). Well-conducted case-based research can contribute to both theory and practice, and there has been an increase in attention to case study approaches and sampling methods within individual sub-disciplines of the field, such as international business (Kostova and Roth, 2003; Reynolds et al., 2003; Piekkari and Welch, 2004), small firm studies (Perren and Ram, 2004) and operations management (Meredith, 1998). In the main sub-disciplines of strategy and organisation studies there has, in the past, been more questioning of the potential over-reliance on individual case studies (Glueck and Willis, 1979). But more recently, we have seen a renewed interest in building theory from cases, alongside a more sophisticated approach to validation methodologies (Bartunek et al., 2006; Siggelkow, 2007).

Methodological and epistemological studies have emphasised the link between case-study research and good-theory building to the extent that authors, such as Eisenhardt (1989), Yin (1994) and Eisenhardt and Graebner (2007), have become standard reading for doctoral students in business and management studies. These rightly focus on the steps needed to develop good research around a case-based approach, including issues of problem definition, sampling and construct validation and appropriate controls. In Eisenhardt's (1989) 'road map', selecting cases to focus on a specified population can help 'constrain extraneous variation' and 'sharpen external validity'. Such approaches can provide insightful, rich descriptions, or be used to test theory or generate theory through inductive case-study research. But a key weakness, as stated by Eisenhardt (1989, p.547) and Eisenhardt and Graebner (2007), is that case-level data can produce theories which describe idiosyncratic phenomena rather than general relationships, patterns, or processes. Good theory should have both explanatory power and both predictive and prescriptive validity. The shift from descriptive to normative theory is always difficult because the findings from a few cases may not generalise to the majority of cases. Like many before them Carlile and Christensen (2004) discuss how individual case studies could always be anomalies and any lessons that they yield are actually 'circumstance-contingent statements of causality'.

In the context of this paper, the management practices adopted by a small number of firms are entirely appropriate to their situation as large, dominant, more international companies, but inappropriate to most of the rest because their situation is different. In Yin's (1994) terms, they may have 'internal' but not 'external' validity. The *external* validity of a theory is the extent to which a relationship that was observed between phenomena and outcomes in one context can be trusted to apply in different contexts as well.

Among other reflective articles in the field, Kostova and Roth (2003) note how the Multinational Corporation (MNC) has been increasingly used as a context for conceptual and empirical work. They review several leading management journals and list three main reasons for MNC analyses:

1   the study of MNC-specific phenomena

2   the validation and expansion of existing theories

3   the development of new theories.

What they and others do not reflect on is the overall aggregate sample selection made across all scholars in the field, which needs to be representative for robust theory development to occur.

Alongside theory development, case studies also contribute to the development of lessons for management practitioners. In fact, of all methodological approaches the case approach arguably has the strongest impact on external users of management research such as policymakers, consultants and managers. This happens via the MBA classroom, via executive-oriented journals and via 'bestseller' business books, all of which tend to focus on exemplary case studies as examples for all to follow (Peters and Waterman, 1982; Collins and Porras, 1994; Katzenbach, 2000; Joyce et al., 2003). Because of the importance of these and other dissemination channels, there is a strong link between case-based studies and the creation and dissemination of best practice thinking and management fads and fashions, although the relationship is more complex than this (Abrahamson and Fairchild, 1999; Weick, 2001; Clark and Greatbatch, 2004).

However, in both theory-building and practitioner-oriented circles there has been very little questioning about the overall sample selection in case-study research in our own field of business and management studies. Using a simple bibliometric technique, this paper examines which firms tend to dominate the focus of business and management journal articles. Our central question is: which firms receive more attention than others in management and business research and why? We then examine the implications of any sample biases for our understanding of management and business and on the kinds lessons distilled from this research to advise managers.

3 A study of case selection biases in management and business studies

Our aim was to measure which firms received the most attention in peer-reviewed journals in management and business studies. This study covers the top 200 firms in the world, ranked by revenue using a database developed to analyse the world's largest 500 firms. It builds explicitly on the theoretical frameworks, data and internationalisation measures used by Rugman and Verbeke (2004), Rugman (2005), Rugman and Collinson (2006) and Collinson and Rugman (2008).

On the basis of the same data and the measures of internationalisation defined below, Rugman (2005) constructs the regional matrix out of the earlier matrix of Country-Specific Advantages (CSAs) and Firm-Specific Advantages (FSAs) (Rugman, 1981; Rugman and Verbeke, 1992). Aggregate 'environmental' country factors, such as natural resource endowments, political, cultural, social or economic attributes, labour characteristics, capital markets, demand conditions, regulatory systems and national or local institutions, in the home-base can lead to CSAs. These form the basis of the international platform from which the multinational firm derives a home-base advantage. In Porter's (1990) terminology, this is the 'diamond' advantage. Building on the CSAs managers make decisions about the efficient 'global' configuration and coordination between segments of its value chain (operations, marketing, R&D and logistics). FSAs are 'unique capabilities that are proprietary to the organisation'. They are based ultimately on its internalisation of an asset such as production, product or process technology, knowledge, managerial or marketing capabilities or distributional skills.

These frameworks and the underlying data provide the antecedents to our analysis. Rugman's (2005) revenue-based classification defines global firms as deriving over 20% of their sales from each region of the broad triad, but less than 50% in any one region. Bi-regional firms derive over 20% of their sales from two regions of the triad, including their own, but less than 50% in the region in which they are headquartered. Host-region firms are defined as deriving over 50% of their sales from a region other than their own. Home-region oriented firms derive over 50% of their sales from the region in which they are headquartered (see also the note in Table 2). This has been complemented more recently by a dual approach which considers both internationalisation of sales and assets using the above definitions (Rugman and Collinson, 2006; Collinson and Rugman, 2008).

We employed a simple bibliometric technique for our study.[1] The largest 200 firms were subjected to a keyword search using the online '*Business Source Premier*' database. Data are for 2001, re-calculated from annual reports, as listed in the '*Regional Nature of Global Multinational Activity*' or RNGMA database in Rugman (2005). The bibliometric search was performed twice, once in 2004 and once in 2009, to examine any changes in

the results over the intervening five-year period. Note that for the sake of consistency and comparability the original list of firms was kept the same (even though some had left the top 200 and others had entered, by 2009) and the financial data listed in Table 1 is from the earlier period. Only the 'hit counts' from both bibliometric searches in 2004 and 2009 are from different periods.

Quoting the database providers, *Business Source Premier* is described as 'the world's largest full-text business database'. It provides full-text search for nearly 3800 scholarly business journals and full-text retrieval for more than 1100 peer-reviewed business publications (over 6.5 million articles are viewable on the online system). Coverage includes virtually all subject areas related to business, including some journals dating as far back as 1922. The database is updated on a daily basis via 'EBSCOhost' (http://ejournals.ebsco.com/Home.asp).

Our search simply combined the firm's name and the word 'business' to search through all default fields. We set one 'limiter' to restrict the search to peer-reviewed periodicals. This returned a total 'hits' count for each firm. The 200 firms were then ranked in terms of the frequency of their mentions across this entire range of journals.

The final list includes a cumulative total of 5060 hits (14,569 for the 2009 dataset). This does not mean 5060 individual articles since the count includes multiple hits where single articles include more than one firm listed. Two firms were excluded (SK and Delphi) because of the difficulties their names created in the search process, so the list was extended to the top 202 firms to keep a total of 200 firms. Some articles counts had to be thoroughly 'filtered'. For example 'fiat money' is a common term in finance studies and articles with this form of the word had to be excluded from the count for Fiat, the auto firm. Checks were run on a number of the individual article lists to ensure that the specific firms featured in all the articles returned by the search.

We should note that the database, although providing global coverage of business and management journals is dominated by English language, US-based publications. This is, however, simply a reflection of the research field and the proportion of US academics and academic institutions in the field. To validate the findings a second, partial search was conducted using the same method applied to the *Social Sciences Citation Index*, which covers 1725 journals spanning 50 disciplines (http://portal.isiknowledge.com/). While the hit-counts were different, the relative ranking of the firms and the proportion of hits for each group of firms both validate the results of the main search.

4   Findings

Table 1 lists the top 114 out of the total 200 firms, accounting for over 97% of the total 5060 hits in 2004 (95% of the total 14,569 hits in 2009), ranked in order of the number of article 'hits' received in 2004. Summary data are provided for specific sub-groups including the average number of article hits, average revenues and cumulative article count as a percentage of the total for the whole list of 200. These sub-groups are divided according to the number of article hits per firm in 2004: firms with over 100 hits comprise the top ten; firms 11 (BP) to 23 (Nestle) have 50–99 hits; 24 (DuPont) to 59 (Lockheed Martin) have 20–49 hits; 60 (DaimlerChrysler) to 84 (HSBC) have 10–19 hits and the remainder on Table 1 have fewer than ten hits. Of the remaining 86 firms, not shown, 14 received four hits, seven received three hits, 12 received two hits, 25 received one hit and 28 received 0 hits in 2004.

Table 1   The top 200 firms ranked by article 'hits' in 2004 and 2009*

	500 Rank	Company	Region	Revenues in bn US$	F/T Sales	% intra regional	N. America % of total	Europe % of total	Asia Pacific % of total	C	Article hits 2004	Article hits 2009	Cumltv article count 2004	Cumltv article count 2009
							2004 Data							
1	19	IBM	N. Am	85.9	64.8	43.5	43.5	28	20	G	760	2093	760	2093
2	5	Ford motor	N. Am	162.4	33.3	66.7	66.7	21.9	na	D	307	953	1067	3046
3	175	Microsoft	N. Am	25.3	na	na	na	na	na	N	279	701	1346	3747
4	3	General motors	N. Am	177.3	25.5	81.1	81.1	14.6	na	D	212	646	1558	4393
5	6	Enron	N. Am	138.7	na	na	na	na	na	N	185	522	1743	4915
6	9	General electric	N. Am	125.9	40.9	59.1	59.1	19	9.1	D	180	394	1923	5309
7	70	Hewlett Packard	N. Am	45.2	58.4	41.6	41.6	na	na	I	163	295	2086	5604
8	8	Royal Dutch/ Shell Group	Europe	135.2	na	46.1	15.6	46.1	na	I	142	336	2228	5940
9	162	Intel	N. Am	26.5	64.6	35.4	35.4	24.5	40.2	G	112	226	2340	6166
10	138	Motorola	N. Am	30	56	44	44	14	26	B	107	198	2447	6364
Averages and percentages for the above group				95.24	49.07	52.19	48.38	24.01	23.83		244.7	636.4	48%	44%
11	4	BP	Europe	174.2	80.4	36.3	48.1	36.3	na	B	92	121	2539	6485
12	10	Toyota motor	Asia-P	120.8	50.8	49.2	36.6	7.7	49.2	B	91	118	2630	6603
13	1	Wal-Mart stores	N. Am	219.8	16.3	94.1	94.1	4.8	0.4	D	82	223	2712	6826
14	143	Philips	Europe	29	na	43	28.7	43	21.5	G	80	190	2792	7016
15	68	Unilever	Europe	46.1	na	38.7	26.6	38.7	15.4	B	68	141	2860	7157
16	42	Boeing	N. Am	58.2	33.3	66.7	66.7	14.5	16.3	D	66	209	2926	7366
17	131	Dell	N. Am	31.2	na	71.7	71.7	20.1	8.2	D	65	149	2991	7515

Table 1 The top 200 firms ranked by article 'hits' in 2004 and 2009* (continued)

	500 Rank	Company	Region	Revenues in bn US$	F/T Sales	% intra regional	N. America % of total	Europe % of total	Asia Pacific % of total	C	Article hits 2004	Article hits 2009	Cumltv article count 2004	Cumltv article count 2009
18	22	Siemens	Europe	77.4	78	52	30	52	13	D	57	202	3048	7717
19	117	Compaq computer	N. Am	33.6	62	38	38	36	na	I	54	60	3102	7777
20	37	Sony	Asia-P	60.6	67.2	32.8	29.8	20.2	32.8	G	51	159	3153	7936
21	195	Honeywell Intl.	N. Am	23.7	26.3	73.7	73.7	18	na	D	51	104	3204	8040
22	2	Exxon mobile	N. Am	191.6	69.6	37.5	37.5	8.9	10.4	I	50	106	3254	8146
23	55	Nestlé	Europe	50.2	na	31.6	31.4	31.6	na	I	50	85	3304	8231
Averages and percentages for the above group				*60.16*	*56.07*	*48.57*	*43.41*	*28.30*	*16.80*		*59.2*	*140.5*	*65%*	*56%*
24	172	DuPont de Nemours (E.I.)	N. Am	25.4	51.2	55.1	55.1	26	14.8	D	47	210	3351	8441
25	139	BT	Europe	30	26.6	87	8.3	87	4.7	D	45	75	3396	8516
26	190	Canon	Asia-P	23.9	71.5	28.5	33.8	20.8	28.5	G	45	95	3441	8611
27	41	Honda motor	Asia-P	58.9	73.1	26.9	53.9	8.1	26.9	S	40	71	3481	8682
28	95	Merrill Lynch	N. Am	38.8	31	73	73	16.6	8.7	D	37	121	3518	8803
29	152	Dow chemical	N. Am	27.8	57.9	42.1	42.1	32	na	I	37	97	3555	8900
30	58	Nissan motor	Asia-P	49.6	50.3	49.7	34.6	11	49.7	B	36	94	3591	8994
31	194	ABB	Europe	23.7	na	53.9	25.1	53.9	11.3	D	36	78	3627	9072
32	47	Bank of America Corp.	N. Am	52.6	na	92.9	92.9	3.5	2.7	D	35	165	3662	9237
33	40	AT&T	N. Am	59.1	na	na	na	na	na	N	34	55	3696	9292
34	177	Walt Disney	N. Am	25.3	na	83	83	10.3	4.9	D	34	138	3730	9430
35	147	Nokia	Europe	27.9	98.5	49	25	49	26	G	33	109	3763	9539
36	114	Tesco	Europe	33.9	15.4	93.6	–	93.6	6.4	D	32	65	3795	9604

2004 Data

Table 1 The top 200 firms ranked by article 'hits' in 2004 and 2009* (continued)

500 Rank	Company	Region	Revenues in bn US$	F/T Sales	% intra regional	2004 Data N. America % of total	Europe % of total	Asia Pacific % of total	C	Article hits 2004	Article hits 2009	Cumltv article count 2004	Cumltv article count 2009
37	73	Morgan Stanley	N. Am	43.7	25	75	75	17.9	6.3	D	31	113	3826	9717
38	118	Samsung	Asia-P	33.2	na	na	na	na	na	N	31	189	3857	9906
39	178	Aetna	N. Am	25.2	–	100	100	–	–	D	30	64	3887	9970
40	24	Philip Morris	N. Am	72.9	42.1	57.9	57.9	25.8	na	D	29	52	3916	10022
41	83	Sears Roebuck	N. Am	41.1	12.6	100	100	–	–	D	29	126	3945	10148
42	62	Merck	N. Am	47.7	16.4	83.6	83.6	na	na	D	28	70	3973	10218
43	109	WorldCom	N. Am	35.2	10.7	89.3	89.3	na	na	D	28	140	4001	10358
44	184	J. Sainsbury	Europe	24.6	na	83.3	16.7	83.3	–	D	28	53	4029	10411
45	112	BMW	Europe	34.4	73.4	57.3	31.7	57.3	na	D	27	61	4056	10472
46	121	Johnson & Johnson	N. Am	33	32.7	67.3	67.3	20.9	na	D	27	57	4083	10529
47	159	PepsiCo	N. Am	26.9	32.4	67.6	67.6	na	na	D	27	64	4110	10593
48	180	Lucent technologies	N. Am	25.1	35.3	64.7	64.7	na	na	D	27	180	4137	10773
49	12	Mitsubishi	Asia-P	105.8	13.2	86.8	5.4	1.7	86.8	D	26	111	4163	10884
50	84	NEC	Asia-P	40.8	20.4	79.6	7	na	79.6	D	26	69	4189	10953
51	21	Volkswagen	Europe	79.3	72.3	68.2	20.1	68.2	5.3	D	24	47	4213	11000
52	125	Renault	Europe	32.6	60.8	89.1	na	89.1	na	D	23	59	4236	11059
53	123	Vodafone	Europe	32.7	36.2	93.1	0.1	93.1	4.8	D	22	57	4258	11116
54	154	Barclays	Europe	27.6	na	88	6	88	na	D	22	227	4280	11343
55	46	Home depot	N. Am	53.6	6.2	100	100	–	–	D	21	34	4301	11377
56	103	Tyco	N. Am	36.4	35.6	65.4	65.4	21.2	12.4	D	21	39	4322	11416
57	132	Goldman Sachs group	N. Am	31.1	35.6	65.9	65.9	25	9.1	D	21	114	4343	11530
58	77	Toshiba	Asia-P	43.1	37	75.3	13.9	8.7	75.3	D	20	61	4363	11591
59	182	Lockheed Martin	N. Am	24.8	17	83	83	na	na	D	20	46	4383	11637

Table 1 The top 200 firms ranked by article 'hits' in 2004 and 2009* (continued)

500 Rank		Company	Region	Revenues in bn US$	F/T Sales	% intra regional	2004 Data N. America % of total	Europe % of total	Asia Pacific % of total	C	Article hits 2004	Article hits 2009	Cumltv article count 2004	Cumltv article count 2009
		Averages and percentages for the above group		39.66	39.07	72.80	51.48	40.48	24.43		29.97	94.61	87%	80%
60	7	DaimlerChrysler	Europe	136.9	na	29.9	60.1	29.9	na	S	18	112	4401	11749
61	32	Hitachi	Asia-P	63.9	31	80	11	7	80	D	18	55	4419	11804
62	72	Metro	Europe	44.3	42.7	97.3	–	97.3	2.3	D	18	56	4437	11860
63	90	ABN Amro holding	Europe	39.7	na	na	na	na	na	N	18	44	4455	11904
64	134	United parcel service	N. Am	30.6	13.7	86.3	86.3	na	na	D	18	49	4473	11953
65	167	Sprint	N. Am	26.1	na	na	na	na	na	N	17	33	4490	11986
66	45	Matsushita electric industrial	Asia-P	55	35.1	64.9	12.4	6.9	64.9	D	16	41	4506	12027
67	144	Allstate	N. Am	28.9	na	100	100	na	na	D	16	35	4522	12062
68	113	Safeway	N. Am	34.3	12	100	100	–	–	D	15	22	4537	12084
69	158	Bayer	Europe	27.1	na	40.3	32.7	40.3	16.1	B	15	59	4552	12143
70	27	Deutsche bank	Europe	66.8	69	63.1	29.3	63.1	6.5	D	14	62	4566	12205
71	49	Fiat	Europe	51.9	65.6	73.3	13	73.3	na	D	14	68	4580	12273
72	88	Fujitsu	Asia-P	40	28.2	71.8	11.4	12.2	71.8	D	13	48	4593	12321
73	127	Pfizer	N. Am	32.3	38.2	61.8	61.8	na	6.5	D	13	49	4606	12370
74	160	Wells Fargo	N. Am	26.9	na	na	na	na	na	N	13	53	4619	12423
75	71	ENI	Europe	44.6	44.3	80.4	12.1	80.4	3.1	D	12	42	4631	12465
76	124	J.C. Penney	N. Am	32.6	na	100	100	na	na	D	12	33	4643	12498
77	135	Robert Bosch	Europe	30.5	na	na	na	na	na	N	12	42	4655	12540

Table 1   The top 200 firms ranked by article 'hits' in 2004 and 2009* (continued)

	500 Rank	Company	Region	2004 Data Revenues in bn US$	F/T Sales	% intra regional	N. America % of total	Europe % of total	Asia Pacific % of total	C	Article hits 2004	Article hits 2009	Cumltv article count 2004	Cumltv article count 2009
78	97	France Télécom	Europe	38.5	35.8	64.2	na	64.2	na	D	11	20	4666	12560
79	105	Samsung electronics	Asia-P	36	na	na	na	na	na	N	11	97	4677	12657
80	115	Royal Bank of Scotland	Europe	33.8	19	81	12	81	na	D	11	88	4688	12745
81	34	American Intl. group	N. Am	62.4	na	59	59	na	na	D	10	48	4698	12793
82	52	Fannie Mae	N. Am	50.8	–	100	100	–	–	D	10	62	4708	12855
83	57	McKesson	N. Am	50	6.6	93.4	93.4	na	na	D	10	29	4718	12884
84	64	HSBC holdings	Europe	46.4	na	na	na	na	na	N	10	52	4728	12936
Averages and percentages for the above group				45.21	33.94	76.14	52.62	50.51	31.40		13.8	51.96	93%	89%
85	13	Mitsui	Asia-P	101.2	34	78.9	7.4	11.1	78.9	D	9	31	4737	12967
86	14	Chevrontexaco	N. Am	99.7	56.5	43.5	43.5	na	na	I	9	50	4746	13017
87	145	Olivetti	Europe	28.7	na	na	na	na	na	N	9	11	4755	13028
88	149	United technologies	N. Am	27.9	53	47	47	17	12	I	9	26	4764	13054
89	11	Citigroup	N. Am	112	na	na	na	na	na	N	8	80	4772	13134
90	23	Sumitomo	Asia-P	77.1	12.7	87.3	4.8	na	87.3	D	8	38	4780	13172
91	31	Credit Suisse	Europe	64.2	73.3	60.9	34.9	60.9	4.1	D	8	31	4788	13203
92	93	Procter & Gamble	N. Am	39.2	48.2	55	55	27	10	D	8	114	4796	13317
93	104	Kmart	N. Am	36.2	–	100	100	–	–	D	8	19	4804	13336
94	122	Conoco	N. Am	32.8	42.4	57.6	57.6	na	na	D	8	20	4812	13356
95	141	Mitsubishi Electric	Asia-P	29.2	26.3	83.1	8.9	6	83.1	D	8	14	4820	13370
96	163	International paper	N. Am	26.4	22	78	78	10	7	D	8	23	4828	13393
97	16	NTT	Asia-P	93.4	na	na	na	na	na	N	7	18	4835	13411
98	29	US postal service	N. Am	65.8	3	97	97	na	na	D	7	49	4842	13460

Table 1   The top 200 firms ranked by article 'hits' in 2004 and 2009* (continued)

	500 Rank	Company	Region	Revenues in bn US$	F/T Sales	% intra regional	N. America % of total	Europe % of total	Asia Pacific % of total	C	Article hits 2004	Article hits 2009	Cumltv article count 2004	Cumltv article count 2009
							2004 Data							
99	35	Carrefour	Europe	62.2	50.8	81.3	na	81.3	6.6	D	7	27	4849	13487
100	98	AOL Time Warner	N. Am	38.2	14.6	86.4	86.4	na	na	D	7	46	4856	13533
101	140	GlaxoSmithKline	Europe	29.5	95.7	28.6	49.2	28.6	na	B	7	48	4863	13581
102	186	Bank One Corp.	N. Am	24.5	na	100	100	na	na	D	7	3	4870	13584
103	189	BellSouth	N. Am	24.1	11.3	88.7	88.7	na	na	D	7	13	4877	13597
104	30	AXA	Europe	65.6	77.3	51.2	24.1	51.2	19.9	D	6	19	4883	13616
105	56	Kroger	N. Am	50.1	–	100	100	–	–	D	6	18	4889	13634
106	59	UBS	Europe	48.5	62	58	37	58	5	D	6	15	4895	13649
107	106	Prudential	Europe	35.8	na	na	na	na	na	N	6	38	4901	13687
108	108	Freddie Mac	N. Am	35.5	na	na	na	na	na	N	6	32	4907	13719
109	54	JP Morgan Chase & Co	N. Am	50.4	na	67.7	67.7	23.2	6.7	D	5	21	4912	13740
110	133	Hyundai motor	Asia-P	30.9	20.9	81.6	18.1	0.3	81.6	D	5	36	4917	13776
111	142	BASF	Europe	29.1	77.8	55.3	23.6	55.3	14.4	D	5	37	4922	13813
112	170	New York Life Insurance	N. Am	25.7	na	na	na	na	na	N	5	17	4927	13830
113	173	Georgia-Pacific	N. Am	25.3	13.2	86.8	86.8	na	na	D	5	28	4932	13858
114	193	Commerzbank	Europe	23.8	na	85.5	8.5	85.5	3	D	5	11	4937	13869
Averages and percentages for the above group				47.77	39.51	74.87	52.71	43.85	29.58		8.55	38.13	98%	95%
Total cumulative hit count for 2004 and 2009													5060	14569
Averages and percentages for all 200 firms				39.58	30.99	79.54	48.34	50.30	35.03		1.43	8.14	100%	100%

Notes: * In Column 4 'N. Am' is North America; 'Asia-P' is Asia-Pacific. Column 11 lists the classification ('C') of these firms from Rugman and Verbeke (2004) and Rugman and Brain (2003). Global firms ('G') are defined as deriving over 20% of their sales from each region of the broad triad (North America, Europe and Asia-Pacific), but less than 50% in any one region. Bi-regional firms ('B') derive over 20% of their sales from two regions of the triad, including their own, but less than 50% in the region in which they are headquartered. Host-region firms ('S') derive over 50% of their sales from a region other than their own. Home-region-oriented firms ('D') derive over 50% of their sales from the region in which they are headquartered. In Column's 14 and 15 'Cumltv article count' means 'cumulative article count' and is a running total of the article hit counts for the firms listed in Column's 12 and 13 for the rows above.

The overwhelming focus of management and business research on a relatively small number of firms is shown by the fact that the top 11 firms in the list, ranked by article hits, account for over half the total number of hits for all 200 in 2004 and 45% in 2009. The top 50 firms account for over 82% of the hits in 2004, 75% in 2009. Over time therefore, there has been a small move away from the concentrated focus on the firms at the top of the table.

Our results show the following selection biases, all of which are interconnected, towards:

• US firms

• large firms

• manufacturing firms

• firms that hold dominant positions in important industries

• firms that have been in existence for a long time

• firms with a strong, recognisable brand

• global and bi-regional firms.

The top ranked firm in Table 1, attracting the most attention, is IBM with 760 article mentions in 2004 (40% higher than Ford, the number two firm) and 2093 in 2009 (46% higher than Ford) and it fits all of these categories (although it has shed its manufacturing activities). This paper will focus on the last of these selection biases, but it is worth briefly summarising the other six as there are some strong interrelationships.

4.1   The bias towards US firms

If we rank the firms by number of article hits (Table 1) we can see that the top ten, accounting for almost half the total number of hits for the entire 200, are comprised of nine US firms and Shell, a British/Dutch oil company in 2004 and eight US firms plus two Europeans in 2009. When the data are ranked by region the average number of articles for the North American region (87 firms in the top 200) is 40.74, partly because of these top nine firms. For the 72 European firms the average is 14.39 with Shell alone yielding a strong influence. The 39 Asia-Pacific firms show an average of 12.23 hits each. Finally, the 'Other' category of firms outside the triad consists of just two firms, Petrobras (two hits) and PDVSA (one hit). By 2009 these averages had increased to 113.66 for North American firms, 43.18 for European firms, 38.46 for Asia-Pacific firms and four for the 'others'.

This data is shown in Tables 2 and 3 which is a summary of Table 1 re-ordered by the home region of each firm. The top five firms in terms of article hits are presented for each region, plus a total for all firms from each region featured in the database of 200 firms. In 2004, North American firms as a group account for just over 70% of the total 5060 hits, European firms for just over 20% and Asia-Pacific firms for 9%. By 2009 this breakdown has changed very little with North American firms accounting for 68% of the total, European firms for 21% and Asia-Pacific firms for 10%.

Table 2 Article 'hit' data by region

2004			2009		
Top five firms in region by article hits in 2004	*Article hits 2004*	*Cumulative article 'hits' 2004*	*Top five firms in region by article hits in 2009*	*Article hits 2009*	*Cumulative article 'hits' 2009*
IBM	760	760	IBM	2093	2093
Ford motor	307	1067	Ford motor	953	3046
Microsoft	279	1346	Microsoft	701	3747
General motors	212	1558	General motors	646	4393
Enron	185	1743	Enron	522	4915
All N. American firms		3544			9888
Royal Dutch/Shell	142	142	Royal Dutch/Shell	336	336
BP	92	234	Barclays	227	563
Philips	80	314	Siemens	202	765
Unilever	68	382	Philips	190	955
Siemens	57	439	Unilever	141	1096
All European firms		1036			3109
Toyota motor	91	91	Samsung	189	189
Sony	51	142	Sony	159	348
Canon	45	187	Toyota motor	118	466
Honda motor	40	227	Mitsubishi	111	577
Nissan motor	36	263	Samsung Electronics	97	674
All Asia-Pacific firms		477			1500
Petrobrás	2	2	Petrobrás	7	7
PDVSA	1	3	PDVSA	1	8
All other/non-triad firms		3			8

Table 3   Regional averages for article 'hit' data

Data for all firms in each host region	North American firms	European firms	Asia-Pacific firms	Other/non-triad firms
Total number of firms	87	72	39	2
Mean revenues 2004 (bn US$)	48.5	45.66	48.35	35.4
Mean number of articles 2004	40.74	14.39	12.23	1.5
Mean number of articles 2009	113.66	43.18	38.46	4.00
Cumulative article 'hits' 2004	3544	1036	477	3
Cumulative article 'hits' 2009	9888	3109	1500	8
Article 'hits' as % of total 2004	70%	20%	9%	1%
Article 'hits' as % of total 2009	68%	21%	10%	1%

There is a strong tendency for the top firms, in terms of article hits, to be global or bi-regional. This is particularly the case for the European and Asia-Pacific lists. In the latter, for example, Toyota, Sony, Canon, Honda and Nissan, which account for over 55% of the total hits for firms from the Asia-Pacific region in 2004, all have a significant presence in the US market compared to the other firms in this group. They are the focus of research because of their prominence as competitors and strong consumer brands in the US market.

British companies are also better represented than their counterparts in Europe. This is clearly partly to do with the English language bias as well as the larger proportional number of British academics and academic institutions in business and management compared to the continent and elsewhere in the world. Less than a fifth of the European firms in the overall list are from the UK, but there are five in the top 11 and eight in the top 20 when we rank the firms by article hits (and region) using the 2004 data. Shell (a Dutch/British oil combine) and BP are the largest and among the most international firms and are the most written about in 2004 (234 article hits for these two firms). Note they also fit most of the other categories above with long-standing reputations, good brands and dominant industry positions. It is interesting to note why Shell does particularly well, compared to BP, despite its smaller size and continues to attract attention through to 2009, while BP drops out of the top group (Table 2). One reason could be its reputation as a forerunner in a number of specific management areas, particularly as a benchmark for corporate governance, green issues, its international HRM structures and its pioneering role in scenario analysis. The articles identified by the search tend to confirm this.

4.2 The bias towards large firms

Although the top 200 firms examined here are already selected on the basis of size, there is also a strong correlation within the list between firm size in revenue terms and number of article hits. As Table 1 shows, the top ten firms with an average of 244.70 article hits have an average of \$95.24 billion in annual revenues in 2004. The second group averages 65.92 hits and \$85.88 billion and the remaining groups (from firm 24, DuPont, onwards) average 9.92 hits and \$41.78 billion in revenues. Although there is no precise linear correlation between article hits and revenues when we compare the group averages (average group revenues drop significantly then rise slightly as we descend through the list), the statistical significance levels for the respective correlations validate this dominant trend. This is clearly connected to most of the other categories of bias observed.

We also know that this group of large firms represents a very small proportion of the overall 'population'. According to UNCTAD's World Investment Report the top 100 firms ranked by foreign assets represent less than 0.2% of all transnational companies worldwide (UNCTAD 2004, p.9). Estimates of the total number of companies worldwide are unreliable, but we know this sample represents a negligible proportion of the world total when we include non-multinational firms. Some would argue that their significance lies in their size and influence as dominant traders, asset owners and employers, but there is evidence that this relative significance is declining. UNCTAD's (2009) World Investment Report shows that the top 100 firms in 2007 accounted for an estimated 9% of assets, 16% of sales and 11% of employment of all multinational firms worldwide. This compares to 12% of assets, 14% of the sales and 13% of their employment in 2002 (UNCTAD 2004) and 21%, 27% and 21%, respectively, in 1990.

4.3 The bias towards manufacturing firms

Service firms are noticeably under-represented in terms of article hits compared to manufacturing firms. This could be for a range of reasons but reflects a general bias in business and management studies towards manufacturing, noted elsewhere. In 2004 Wal-Mart was the largest firm in the world by revenue and the only service firm in the top 25 ranked by article hits, with 82 hits. Merrill Lynch came in at 28 with 37 hits followed by Bank of America, Tesco and Morgan Stanley. There are fewer than 35 service firms in our top 114 and they are noticeably scarce in the top 50.

4.4 The bias towards firms that hold dominant positions in important industries

Many of the 'smaller' firms at the top end of Table 1 (Microsoft, Hewlett Packard, Intel and Motorola) are dominant or key players in industry sectors that have grown rapidly in both size and significance over the past three decades. These and others in the list that have attracted more research attention than we would expect from their relative size are also in the information and communications industries, which supply 'enabling' technologies to other business sectors.

4.5   *The bias towards firms that have been in existence for a long time*

Longevity helps, in that firms that have been around a while accumulate more hits. But there is also a sample bias towards firms that exhibit signs of sustained competitive advantage, or at least good survival traits. New firms may attract attention but not as much as the old-timers. The search method discriminates against firms that have completely changed their names one or more times in the last few decades.

M&A activity also creates discontinuities. As an example, while 'DaimlerChrysler' gets 18 hits, 'Daimler' alone gets 17 and 'Chrysler' alone gets 69. This also illustrates the bias towards US firms.

4.6   *The bias towards firms with a strong, recognisable brand*

Coca-Cola (85 hits) and McDonalds (93 hits) are both outside the top 200 list but receive large hit-counts. These hit-counts would put them in the top 20 in Table 1, an indication that strong brands and well-known products in the public arena attract attention in the academic arena. Again, however, these are also relatively more global, US firms, confirming other biases listed above.

4.7   *The bias towards global and bi-regional firms*

As described above, we build our analysis on the basis of the revenue-based classification for firms' regional scope, developed by Rugman (2005) and Rugman and Verbeke (2004). Our results show that the six global firms out of the total 200, Nokia, Canon, Sony, Philips, Intel and IBM, account for 1081 of all the 5060 article hits (21%; 2872 out of 14,569 or 20% in 2009). In both 2004 and 2009 four of these six were in the top 20 when ranked by number of article hits. Four of the eight bi-regional firms are in the top 20 when this ranking is used, but in contrast to this the host-oriented firms are spread fairly evenly through the ranked list.

When grouped by region (Table 2) we see the same pattern. More significantly, all of the global, bi-regional and host-oriented of the Asia-Pacific firms, Toyota (B), Sony (G), Canon (G), Honda (S) and Nissan (B), top the list of Asia-Pacific firms ranked by article hits. These five firms account for over 55% of all article hits for the 39 Asia-Pacific firms in the database. This is a clear indication of the relative lack of research interest in large and dominant regional or national-level players in favour of more international, less-representative companies. This has significant implications for international business studies as discussed below.

A similar pattern exists for North American firms with the only two global companies, IBM and Intel, and the one bi-regional firm, Motorola, sitting in the top ten by hit count. The average hit-count for these three firms is 306, compared to just 26 for the home-region oriented (D) North American firms. The pattern for European firms is less clear-cut. Although the only two global firms, Nokia and Philips, are near the top of the list there are large bi-regional and host-oriented firms distributed down the ranking. Bayer, GlaxoSmithKline, and EADS for example are important in their respective industries but do not receive much attention in the research literature.

5 Implications for international business studies

Our findings identify the most 'important' firms in the world, according to management researchers publishing in the world's pre-eminent academic journals. Their attention is heavily focused on a small number of these firms, with the top ten accounting for 48% of the total 5060 article hits in our study in the 2004 data and not much less (44%) in 2009. Add to this the seven areas of bias observed among our top 200, and we begin to see how any lessons derived from this small sub-sample of firms may not be appropriate for the majority of managers. Moreover, given that we analysed peer-reviewed journals, it may be that academic theory in our field may be built from too narrow a range of empirical observations. Paraphrasing Weick (2001), 'industry lore may well be too lean'.

Returning to some of the excellent principles of case-study research outlined earlier in the paper we know that single-case studies can describe in rich detail the existence of a phenomenon (such as a 'talking pig'; Siggelkow, 2007) and multiple-case studies typically provide a stronger base for theory building (Yin, 1994; Eisenhardt and Graebner, 2007). Multiple cases provide a set of discrete experiments that serve as replications, contrasts, and extensions to the emerging theory. This justifies the case-based methodologies adopted in individual studies and reported in published articles. In this study we have stepped back to examine the collective, aggregate 'sample' adopted across the field of business and management. This encompasses papers which aim to both develop and test theory as well as those that employ single case and multiple case-study methodologies. We find that the sample is unrepresentative of the population of firms in general therefore replications, contrasts and extensions to existing and emerging theory are not being 'tested' using a representative range of large firms. Whether the aim is to develop or test theory, through single or multiple cases, the bias towards an unrepresentative sub-set of examples ('something that is representative by virtue of having typical features of the thing it represents') suggests that the collective theoretical insights of management research are flawed.

For the remainder of this paper we will focus on how the bias towards studying more global firms might have influenced the evolution of the field of international business. It would be possible to develop a critique of the general applicability of a range of standard international business studies theories and frameworks on the basis of this data. On the 'output' side, given that most firms sell products and services and leverage their brands over a limited geographic area how relevant to the majority of managers is the Levitt-inspired rhetoric about the need for global brands? On the 'input' side, given the limited globalisation of many industry production systems, how relevant is Vernon's international product life cycle?

Such a wide-ranging critique is not feasible here, so we will specifically examine two related propositions drawn from the above data.

1   Relatively few firms expand their activities beyond their own region, so perhaps international business studies tend to overestimate the benefits and underestimate the costs or difficulties of internationalisation.

2   Those firms that have developed more global or bi-regional structures are unusual and may well be inappropriate benchmarks for theory or practice.

In simple terms 'going global' or 'being global' may not be economically or strategically rational for most firms because the benefits do not outweigh the costs. The ability to sell products and services in foreign markets indicates that a firm possesses competitive advantages over firms situated in such markets. FSAs are proprietary and can be exploited profitably across national borders. A central paradox in international business is: why do multinational firms that:

1   are said to have strong FSAs

2   can benefit from internalisation advantages associated with FDI

3   can benefit from location advantages critical to successful market-seeking investment, still have a concentration of sales in their home region (Rugman and Verbeke, 2004)?

The data suggest that the standard prescription to internationalise may underestimate the complexities and costs of developing FSAs that are 'decoupled' from the home region. Collinson and Rugman (2008), Rugman and Verbeke (2004) and Rugman (2005) outline a number of connected complexities, including: the rigidities that stem from the administrative heritage of the firm; the difficulties of implementing the increased socialisation required to extend elements of the firm to penetrate foreign markets; and the difficulty of decomposing the firm and its knowledge base (hence aspects of its FSAs) into national units to suit individual country-market environments.

Alternative approaches, such as the 'varieties of capitalism' approach (Hall and Soskice, 2001; Morgan et al., 2001; Morgan and Whitley, 2003) also emphasise administrative heritage as a source of inertia or limited adaptability. The administrative heritage of the firm is a set of inherited characteristics that reflect its evolution in a specific home region. Its resources, people, capabilities, management systems and culture are all connected with the context in which it has developed and the competitive environment to which it has responded and adapted over a long period of time. These give rise to a particular set of competitive strengths and weaknesses. Such 'core rigidities' underpin not only organisational path dependency but also local embeddedness, limiting the ease with which firms can leverage FSAs outside this home environment.

More recent contributions to this approach, from the strategy and organisation domains, have examined 'resource rigidities' and 'routine rigidities' (Gilbert, 2005). The latter is associated with organisational embeddedness in the institutional, social and cultural environment of the home region (Lam, 1997; Collinson and Wilson, 2006) and has connections with the above varieties of capitalism approaches. The former concept stems from early research showing that the firm's external resource providers (including customers, suppliers, and capital markets) shape and constrain its internal strategic choices (Pfeffer and Salanick, 1978). There are surprisingly weak connections between this theory of resource dependency and international business theory (Collinson and Rugman, 2008, explicitly makes this connection). The closest link perhaps comes through economic geographer's concepts of agglomeration economies and local industry 'clusters' (a recent example among many is Canina et al., 2005).

Were we to accept the proposition that international business studies tend to overestimate the benefits and underestimate the costs or difficulties of internationalisation, we would be prompted to ask whether more global firms represent appropriate benchmarks for the majority of firms.

The relevance of these data for us is that more global firms are somewhat unique in terms of the nature of their FSAs and their resulting level of internationalisation. The advantages of geographic diversity, scale and scope give them access to resources, assets and capabilities that 'average' firms do not have. Most importantly this gives them a range of strategic options that are not open to most firms. They are also, arguably, vulnerable to a wider range of risks and costs than more normal firms. Additional risks come from exposure to a range of country markets from which they source inputs or in which they sell outputs. Additional costs also arise from the increased complexity of coordinating investments, operations, joint-ventures and alliances, and personnel based in a range of different market environments.

Previous research we have conducted also illustrates the irony of studying the most international firms as exemplars of the competitive strengths of a particular group of firms. Toyota, Sony, Canon, Honda and Nissan are highly unusual yet, as shown in our data, they are the overwhelming focus of research into the alleged differentiating characteristics and superior competitive advantages of Japanese firms in general (Rugman and Collinson, 2006). When assessed in terms of their sales these five firms are all classified as global, bi-regional, or host-oriented; yet 58 out of the 64 Japanese firms in our database of the top 500 firms are home-region oriented (in terms of outputs and inputs). The majority have failed to de-couple FSAs from their home environment and early fears of the corporate supremacy of Japanese firms in the 1970s and 1980s (Vogel, 1979; Drucker, 1981; Ouchi, 1981; Franko, 1983; Wolf, 1983) turn out to have been largely misplaced. Japanese management research has tended to over generalise on the basis of the export led growth of a relatively small number of industry sectors, the international success of a relatively small number of firms and superior capabilities in a limited range of business processes.

It is interesting to note that similar sample biases may be appearing in research on emerging Chinese firms. Attention seems to be focusing on firms like Lenovo, Huawei, Haier, Sinopec, Ningbo Bird and SAIC because they are seen to pose a competitive threat to Western multinationals. But these firms are not representative of Chinese firms in general, and we should not expect to develop an understanding of the strategies, structures, competences, and cultures of the majority of Chinese firms by studying them (Nolan, 2001; Nolan and Zhang, 2003).

By outlining key areas of bias in case-study sample selection in our field our study also indicates obvious important gaps in the coverage of business and management research. There are relatively fewer studies of: service industry firms (despite their economic importance); non-triad firms outside the USA, Europe and Japan (such as Petrobras, Li and Fung, or Flextronics); small- and medium-sized enterprises (SMEs).

6 Conclusions

Through a simple bibliometric analysis this study clearly shows that the attention of management researchers publishing in our top, peer-reviewed journals is focused on a small subset of firms. The top ten firms account for 48% of the total 5060 article hits in our study of 200 firms in 2004 and 44% of the 14,569 hits in 2009. Our seven areas of bias show that these firms are much larger and more international than the average and that US firms, manufacturing firms, firms with strong brands, firms that have been in existence for a long time or that dominate a key industry sector are all over-represented.

Some of these biases are easily explained by the drive in management and business studies generally to explain corporate survival and success (Kirby, 2005). Other types of bias arguably weaken the explanatory power of resulting theory because they focus attention on unusual, unrepresentative types of firms. The bias that diverts our attention away from more representative, home-region oriented firms should be viewed in this way.

Does this mean much of international business theory is redundant? This is not our conclusion. It simply suggests that more balanced empirical research should be used to drive more robust theoretical insights to both explain existing patterns of limited internationalisation and to provide predictive and proscriptive lessons for the majority of firms. In our international business context existing theories and frameworks should be deployed and developed to better understand the appropriate balance between costs and benefits of internationalising different business operations and the strategic trade-offs, including opportunity costs of doing so, for particular firms.

When we step back from the specific domain of international business and view these findings in terms of their implications for the field, overall we feel there is scope to connect with the on-going debate between mainstream (normative or positivist) versus more critical social science research within business and management studies. A more critical interpretation of our data might suggest that academic researchers are increasingly drawn into reinforcing general images of a small and specific group of firms simply as icons of success, rather than analysing their substance (Kieser, 1997; Clark, 2004), questioning the resulting lessons or studying a more representative population of examples. There is not the space to explore these implications of the research here, but this seems to be a promising avenue for further reflections on our 'collective rationality' in the mould of DiMaggio and Powell (1983).

Acknowledgements

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Note

1   Bibliometrics is the quantitative study of document-related processes. Many of the modern research evaluation techniques in the field date back to the work of Derek deSolla Price (1963). Bibliometrics and the related fields of informetrics and scientometrics are now used widely, for example by the National Science Board and in the *European Report on Science and Technology Indicators*, and underpin the increasingly popular research citations methodologies in use today (Narin, 1976; Egghe and Rousseau, 1990; Noyons, 1999). Bibliometrics is commonly used to map the rise or spread and subsequent decline of specific sub-fields of inquiry over time (mapping logistic or linear patterns of 'popularity'). It is also used for research evaluation purposes, to compare the relative productivity of particular groups, institutions or countries in terms of publication activity and quality (Irvine and Martin, 1989). Here we employ a simple key word metric similar to co-word analysis, based on frequency analyses of cooccurrence of keywords (Callon et al., 1983) (co-word clustering is a standard technique used at ISI). To our knowledge this approach has never been used in this way in the field of business and management studies.