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Sub-field normalization of the IEEE scientific journals based on their connection with Technical Societies

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ABSTRACT

A recent paper (Canavero et al., 2014. *Journal of the American Society for Information Science and Technology*, doi:10.1109/TPC.2013.2255935) performed a bibliometric analysis of an extensive set of scientific journals within the Engineering field, published by IEEE (Institute of Electrical and Electronics Engineers). The analysis was based on (i) the citation impact of journal articles and (ii) the reputation of journal authors in terms of total scientific production and relevant citation impact.

The goal of this paper is to complement the prior analysis, investigating on the different citation cultures of these journals, depending on the sub-field/specialty of interest. To perform this evaluation, it is suggested a novel technique, which takes into account the connections between journals and some highly specialized communities of scientists, known as IEEE Technical Societies and Councils.

After showing significant differences in terms of propensity to cite, probably attributable to the large variety of sub-fields and specialties covered by IEEE journals, it is presented a simplified technique for the sub-field normalization of the results of the prior study.

The main contribution of this work is (1) providing an empirical confirmation of the complexity of the problem of normalization, even for journals within the same field but different sub-fields/specialties, and (2) showing how the use of highly specialized information on a journal reference sub-field(s) may be helpful for improving the estimation of the journal propensity to cite. Description is supported by a large amount of empirical data.

1. Introduction and literature review

Field-normalization is currently a “hot” topic in bibliometrics, of fundamental importance when comparing scientific journals from different (sub-)disciplines or evaluating multidisciplinary groups of scientist. There is no doubt that the citation culture can vary significantly across different scientific disciplines, both in terms of frequency at which articles cite other documents and rapidity of maturity/decline of citation impact (Moed, 2010). Field-normalization should therefore be introduced when evaluating publications from different scientific fields, so as to avoid “comparing apples with oranges”. Many approaches, mostly related to scientific journals, have been proposed over the years. Not surprisingly, a common feature is that they are based on the comparison between (1) the amount of citations obtained by a group of publications examined and (2) a *comparison* or *normalization term* given by the expected number (or another indicator of central tendency) of the citations obtained or given by a sample of analogous publications, in the specific discipline(s) of interest.

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At the risk of oversimplifying, the most popular techniques proposed in the literature differ in three main features:

1. A first distinction is about how the comparison term is determined. In some cases, this term is given by the average number of citations obtained by a reference sample of publications within the discipline(s) of interest, while in others it is obtained using the average number of citations given (i.e., bibliographic references) (Moed, 2010).
2. A second distinction concerns the "moment" in which the normalization is performed. A first option is to build an indicator based on the citations obtained by a group of reference publications and subsequently normalize it (*a posteriori* or *ex post* or *cited-side* or *target* normalization), or to immediately normalize citations before joining them by an aggregated indicator (*a priori* or *ex ante* or *citing-side* or *source* or *fractional/fractionated* normalization) (Glänzel, Schubert, Thijs, & Debackere, 2011; Leydesdorff & Opthof, 2010; Zitt & Small, 2008).
3. Another distinctive feature is the selection of a reference sample of publications for determining the comparison term, based on the citations obtained or given by the selected publications. Some techniques are *classification-dependent*, since they are based on a superimposed delineation of fields of science, e.g., that one provided by the bibliometric databases ISI-Thomson Reuters and Scopus, or other institutions such as CWTS, KU-Leuven and ISSRU-Budapest (Glänzel & Schubert, 2003; Leydesdorff & Shin, 2011). Although these "ready-made" classifications can provide useful indications, they are often subject to criticism. Other techniques – especially those based on citing-side normalization – are more "adaptive", since the sample is determined considering the "neighbourhood" of the publication(s) of interest – typically consisting of the set of publications citing or being cited by them (Waltman, Yan, & Van Eck, 2011). The classification-free property can hardly be reached by the techniques based on cited-side normalization, since they generally need nomenclatures or bibliometric clusters, such as research fronts and thematic areas.

Most of the existing techniques can be criticized for "condensing" very skewed distributions, such as those of the citations obtained or given by a sample of papers, into a single indicator of central tendency. Recent techniques take the entire distribution of the variable of interest into account. These approaches are certainly more rigorous but have the disadvantage of complicating the analysis (Herranz & Ruiz-Castillo, 2012; Leydesdorff & Bornmann, 2011).

Another controversial aspect of field-normalization techniques is the questionable robustness: relatively small variations in the selection of the sample of publications may cause significant variations in the estimation of the propensity to cite within a specific field (Zitt, Ramanana-Rahary, & Bassecoulard, 2005). This is probably a consequence of the relatively large differences, in terms of propensity to cite, among possible sub-fields (or specialties) of the same discipline, as also confirmed by studies at the sub-field level (Glänzel, Thijs, Schubert, & Debackere, 2009).

It is worth remarking the practical relevance of the problem of the so-called "sub-field normalization", as in most cases competitions for promotions or career advancements involve scientists from the same discipline, but not necessarily the same research sub-field/specialty.

In a recent paper, Canavero, Franceschini, Maisano, and Mastrogiacomo (2014) presented a detailed analysis of 110 journals within the Engineering field, representing the "IEEE (Institute of Electrical and Electronics Engineers) publication galaxy", encompassing a number of scientific journals, constantly growing in number and in terms of subjects covered (e.g., electrical engineering, computing, biotechnology, telecommunications, power and energy, etc.). Table 1 reports the journal titles, including other data like journal category, start year, number of annual issues, coverage by Scopus (this database will be used in the analysis presented in the remaining of the paper) and the journal abbreviations used hereafter in the text. It can be noticed that IEEE journals are "historically" divided in several categories: (J) journals, (L) letters, (R) review journals, (O) online journals, (T) transactions, and (X) other journals.

In a nutshell, the analysis by Canavero et al. (2014) was carried out from two fundamental perspectives:

1. Diffusion/impact of the articles, which was estimated by the average citations (*CPP*) accumulated by the journal articles from the date of publication up to the moment of the analysis, i.e., January 2012.
2. Academic reputation of the journal (co-)authors, roughly quantified by their individual h-indices, used as synthetic indicators of productivity and diffusion/impact of their total scientific output (Hirsch, 2005). The h-spectrum, i.e., the distribution representing the h values associated to the journal's authors (and co-authors), was constructed for each journal and some indicators of central tendency – typically mean value ($\bar{h}$) or median ($\tilde{h}$) value – were used to summarize this distribution (Franceschini & Maisano, 2011).

The two types of result were aggregated by two-dimensional maps depicting a "bibliometric positioning" of the IEEE journals. For more detailed information, we refer the reader to the original article. This information should not be used to rank them, distinguishing between "good" and "bad" ones, since the IEEE journals are associated to several scientific communities with specific sub-fields of interest (IEEE, 2014). Even though these journals are all within the Engineering field, their average scientific production and diffusion/impact are inevitably influenced by non-homogeneous attitudes towards the practice of citation. Journals in relatively "parsimonious" sub-fields – in terms of propensity to cite – may be therefore disadvantaged compared to journals in more "generous" sub-fields.

The goal of this paper is to investigate the actual diversity as regards the citation culture among the IEEE journals, which is likely to be related to the scientific sub-fields covered by them. To perform this evaluation we will propose a novel technique that uses the information on the relation between the IEEE journals and some highly specialized communities of

Table 1
List of the one-hundred and ten IEEE journals selected for the analysis, reporting the journal category, title, abbreviation, start year, number of annual issues and Scopus coverage at the moment of the analysis (January 2012). Journals of the same category are sorted alphabetically with respect to their title.

Journal category	Journal title	Abbr.	Start year	Annual issues	Scopus coverage (from 2006 to 2011)
J	IEEE Computer Graphics and Applications	J1	1981	6	Full
J	IEEE Intelligent Systems (and their Applications)	J2	1998	6	Full
J	IEEE Journal of Oceanic Engineering	J3	1976	4	Full
J	IEEE Journal of Quantum Electronics	J4	1965	12	Full
J	IEEE Journal of Solid-State Circuits	J5	1966	12	Full
J	IEEE Micro	J6	1981	6	Full
J	IEEE Multimedia	J7	1994	4	Full
J	IEEE Pervasive Computing	J8	2002	4	Full
J	IEEE Sensors Journal	J9	2001	12	Full
J	IEEE Systems Journal	J10	2007	4	Since 2008
J	Journal of Display Technology	J11	2005	4	Full
J	Journal of Lightwave Technology	J12	1983	24	Full
J	Journal of Microelectromechanical Systems	J13	1992	6	Full
L	IEEE Antennas and Wireless Propagation Letters	L1	2002	1	Full
L	IEEE Communications Letters	L2	1997	12	Full
L	IEEE Computer Architecture Letters	L3	2002	24	Full
L	IEEE Electron Device Letters	L4	1980	12	Full
L	IEEE Geoscience and Remote Sensing Letters	L5	2004	4	Full
L	IEEE Microwave and Wireless Components Letters	L6	2001	12	Full
L	IEEE Photonics Technology Letters	L7	1989	24	Full
L	IEEE Signal Processing Letters	L8	1994	12	Full
L	IEEE Transactions on Circuits and Systems II: Express Briefs	L9	2004	12	Full
O	IEEE Communications Surveys & Tutorials	O1	1998	4	Since 2008
O	IEEE Internet Computing	O2	1997	6	Full
R	IEEE Engineering Management Review	R1	1973	4	Full
R	IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing	R2	2008	4	Since 2009
R	IEEE Journal of Selected Topics in Quantum Electronics	R3	1995	6	Full
R	IEEE Journal of Selected Topics in Signal Processing	R4	2007	6	Full
R	IEEE Journal on Selected Areas in Communications	R5	1983	12	Full
R	IEEE Reviews in Biomedical Engineering	R6	2008	1	From 2009 to 2010
R	Proceedings of the IEEE	R7	1963	12	Full
T	IEEE Transactions on Advanced Packaging	T1	1999	4	Not covered in 2011
T	IEEE Transactions on Aerospace and Electronic Systems	T2	1965	4	Full
T	IEEE Transactions on Antennas and Propagation	T3	1963	12	Full
T	IEEE Transactions on Applied Superconductivity	T4	1991	6	Full
T	IEEE Transactions on Audio, Speech, and Language Processing	T5	2006	8	Full
T	IEEE Transactions on Automatic Control	T6	1963	12	Full
T	IEEE Transactions on Automation Science and Engineering	T7	2004	4	Full
T	IEEE Transactions on Biomedical Circuits and Systems	T8	2007	6	Full
T	IEEE Transactions on Biomedical Engineering	T9	1964	12	Full
T	IEEE Transactions on Broadcasting	T10	1963	4	Full
T	IEEE Transactions on Circuits and Systems for Video Technology	T11	1991	12	Full
T	IEEE Transactions on Circuits and Systems I: Regular Papers	T12	2004	12	Full
T	IEEE Transactions on Communications	T13	1972	12	Full
T	IEEE Transactions on Components and Packaging Technologies	T14	1999	2	Full
T	IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems	T15	1982	12	Full
T	IEEE Transactions on Computers	T16	1968	12	Full
T	IEEE Transactions on Consumer Electronics	T17	1975	4	Full
T	IEEE Transactions on Control Systems Technology	T18	1993	6	Full
T	IEEE Transactions on Dependable and Secure Computing	T19	2004	4	Full
T	IEEE Transactions on Device and Materials Reliability	T20	2001	4	Full
T	IEEE Transactions on Dielectrics and Electrical Insulation	T21	1994	6	Full
T	IEEE Transactions on Education	T22	1963	4	Not covered in 2011
T	IEEE Transactions on Electromagnetic Compatibility	T23	1964	4	Full
T	IEEE Transactions on Electron Devices	T24	1954	12	Full
T	IEEE Transactions on Electronics Packaging Manufacturing	T25	1999	2	Full
T	IEEE Transactions on Energy Conversion	T26	1988	4	Full
T	IEEE Transactions on Engineering Management	T27	1988	2	Full
T	IEEE Transactions on Evolutionary Computation	T28	1997	6	Full
T	IEEE Transactions on Fuzzy Systems	T29	1993	6	Full
T	IEEE Transactions on Geoscience and Remote Sensing	T30	1980	12	Full
T	IEEE Transactions on Haptics	T31	2008	4	Full
T	IEEE Transactions on Image Processing	T32	1992	12	Full

Table 1 (*Continued*)

Journal category	Journal title	Abbr.	Start year	Annual issues	Scopus coverage (from 2006 to 2011)
T	IEEE Transactions on Industrial Electronics	T33	1982	12	Full
T	IEEE Transactions on Industrial Informatics	T34	2005	4	Full
T	IEEE Transactions on Industry Applications	T35	1972	6	Full
T	IEEE Transactions on Information Forensics and Security	T36	2006	4	Full
T	IEEE Transactions on Information Technology in Biomedicine	T37	1997	6	Full
T	IEEE Transactions on Information Theory	T38	1963	12	Full
T	IEEE Transactions on Instrumentation and Measurement	T39	1963	12	Not covered in 2009
T	IEEE Transactions on Intelligent Transportation Systems	T40	2000	6	Full
T	IEEE Transactions on Knowledge and Data Engineering	T41	1989	12	Full
T	IEEE Transactions on Learning Technologies	T42	2008	4	Full
T	IEEE Transactions on Magnetics	T43	1965	12	Full
T	IEEE Transactions on Medical Imaging	T44	1982	12	Full
T	IEEE Transactions on Microwave Theory and Techniques	T45	1963	12	Full
T	IEEE Transactions on Mobile Computing	T46	2002	6	Full
T	IEEE Transactions on Multimedia	T47	1999	8	Since 2007
T	IEEE Transactions on NanoBioscience	T48	2002	4	Full
T	IEEE Transactions on Nanotechnology	T49	2002	6	Full
T	IEEE Transactions on Network and Service Management	T50	2004	2	Full
T	IEEE Transactions on Neural Networks	T51	1990	12	Full
T	IEEE Transactions on Neural Systems and Rehabilitation Engineering	T52	2001	6	Full
T	IEEE Transactions on Nuclear Science	T53	1963	18	Full
T	IEEE Transactions on Parallel and Distributed Systems	T54	1990	12	Full
T	IEEE Transactions on Pattern Analysis and Machine Intelligence	T55	1988	12	Full
T	IEEE Transactions on Plasma Science	T56	1973	6	Full
T	IEEE Transactions on Power Delivery	T57	1986	4	Full
T	IEEE Transactions on Power Electronics	T58	1987	12	Full
T	IEEE Transactions on Power Systems	T59	1986	4	Full
T	IEEE Transactions on Professional Communication	T60	1988	4	Full
T	IEEE Transactions on Reliability	T61	1986	4	Full
T	IEEE Transactions on Robotics (and Automation – before 2004)	T62	2004	6	Full
T	IEEE Transactions on Semiconductor Manufacturing	T63	1988	4	Full
T	IEEE Transactions on Signal Processing	T64	1991	12	Full
T	IEEE Transactions on Software Engineering	T65	1976	12	Full
T	IEEE Transactions on Systems, Man and Cybernetics, Part A: Systems and Humans	T66	1996	6	Full
T	IEEE Transactions on Systems, Man, and Cybernetics, Part B: Cybernetics	T67	1996	6	Full
T	IEEE Transactions on Systems, Man, and Cybernetics, Part C: Applications and Reviews	T68	1998	6	Full
T	IEEE Transactions on Ultrasonics, Ferroelectrics and Frequency Control	T69	1986	12	Full
T	IEEE Transactions on Vehicular Technology	T70	1967	6	Full
T	IEEE Transactions on Very Large Scale Integration (VLSI) Systems	T71	1993	12	Full
T	IEEE Transactions on Visualization and Computer Graphics	T72	1995	6	Full
T	IEEE Transactions on Wireless Communications	T73	2002	6	Full
T	IEEE/ACM Transactions on Computational Biology and Bioinformatics	T74	2004	6	Not covered in 2011
T	IEEE/ACM Transactions on Networking	T75	1993	6	Full
T	IEEE/ASME Transactions on Mechatronics	T76	1996	6	Full
X	Canadian Journal of Electrical and Computer Engineering-Revue Canadienne de Genie Electrique et Informatique	X1	2003	4	Full
X	IEEE Annals of the History of Computing	X2	1979	2	Full
X	IEEE Latin America Transactions	X3	2003	4	Full

scientists within the “IEEE galaxy”, called IEEE Technical Societies and Councils (IEEE, 2014). Table 2 reports the list of these associations, including the abbreviations used hereafter in the text and identifying the IEEE journals linked to them. Each Society/Council generally has one or more main sponsored journals, represented by the ones with greater affinity to the scientific topics covered by the Society/Council, and other (secondary) sponsored journals. It is worth remarking that, while Societies are well-consolidated associations, Councils can be seen as “Societies in progress” concerning emerging research topics. For simplicity, in the remaining of this article they will be both referred to as “Societies”.

Table 2
List of the thirty-eight IEEE Societies and seven IEEE Councils, reporting their name, abbreviation and the sponsored journals.

Society/Council name	Abbr.	Main sponsored journal	Other sponsored journals
IEEE Aerospace and Electronic Systems Soc. (AESS)	S1	T2	J12
IEEE Antennas and Propagation Soc. (APS)	S2	L1, T3	–
IEEE Broadcast Technology Soc. (BTS)	S3	T10	J11
IEEE Circuits and Systems Soc. (CAS)	S4	L9, T8, T11, T12, T71	T47
IEEE Communications Soc. (COMSOC)	S5	L2, O1, R5, T13, T50, T73	J12, T4, T47, T75
IEEE Components, Packaging, and Manufacturing Technology Soc. (CPMT)	S6	T1, T14, T25	J11, T4, T63
IEEE Computational Intelligence Soc. (CIS)	S7	T28, T29, T51	T48, T74
IEEE Computer Soc. (CS)	S8	L3, T16, T19, T41, T46, T54, T55, T65, T72, T75	T31, T34, T37, T42, T47, T48, T71, T74
IEEE Consumer Electronics Soc. (CE)	S9	T17, T31	J11, R6
IEEE Control Systems Soc. (CSS)	S10	T6, T18	T74
IEEE Dielectrics and Electrical Insulation Soc. (DEIS)	S11	T21	T4
IEEE Education Soc. (EDU)	S12	T22, T42	–
IEEE Electron Devices Soc. (EDS)	S13	L4, T20, T24	J11, J12, J13, T4, T63
IEEE Electromagnetic Compatibility Soc. (EMCS)	S14	T23	–
IEEE Engineering in Medicine and Biology Soc. (EMB)	S15	R6, T9, T37, T44, T52	T8, T48, T74
IEEE Geoscience and Remote Sensing Soc. (GRSS)	S16	L5, R2, T30	–
IEEE Industrial Electronics Soc. (IES)	S17	T33, T34, T76	J13
IEEE Industry Applications Soc. (IAS)	S18	T35	J11, T34
IEEE Information Theory Soc. (IT)	S19	T38	–
IEEE Instrumentation and Measurement Soc. (I&M)	S20	T39	J11, J12, T4
IEEE Intelligent Transportation Systems Soc. (ITSS)	S21	T40	–
IEEE Magnetics Soc. (MAG)	S22	T43	T4
IEEE Microwave Theory and Techniques Soc. (MTT-S)	S23	L6, T45	J12, T4
IEEE Nuclear and Plasma Sciences Soc. (NPSS)	S24	T53, T56	T44
IEEE Oceanic Engineering Soc. (OES)	S25	J3	–
IEEE Photonics Soc. (IPS)	S26	J4, L7, R3	J11, J12, T1
IEEE Power Electronics Soc. (PELS)	S27	T58	–
IEEE Power and Energy Soc. (PES)	S28	T26, T57, T59	T4
IEEE Product Safety Engineering Soc. (PSES)	S29	–	–
IEEE Professional Communications Soc. (PCS)	S30	T60	–
IEEE Reliability Soc. (RS)	S31	T61	T20, T63
IEEE Robotics and Automation Soc. (RAS)	S32	J13, T7, T62	T31, T34, T48, T76
IEEE Signal Processing Soc. (SPS)	S33	L8, R4, T5, T32, T36, T47, T64	T44, T73
IEEE Soc. on Social Implications of Technology (SSIT)	S34	–	–
IEEE Solid-State Circuits Soc. (SSCS)	S35	J5, J11, T63	T71
IEEE Systems, Man, and Cybernetics Soc. (SMCS)	S36	T66, T67, T68	T34, T48
IEEE Ultrasonics, Ferroelectrics, and Frequency Control Soc. (UFFC)	S37	T69	J12, T4, T44
IEEE Vehicular Technology Soc. (VTS)	S38	T70	–
IEEE Biometrics Counc. (BIO)	C1	–	–
IEEE Counc. on Electronic Design Automation (CEDA)	C2	T15	–
IEEE Nanotechnology Counc. (NANO)	C3	T48, T49	–
IEEE Sensors Counc. (SEN)	C4	J9	–
IEEE Counc. on Superconductivity (CSC)	C5	T4	–
IEEE Systems Counc. (SysC)	C6	J10	–
IEEE Technology Management Counc. (TMC)	C7	R1, T27	–

Since these organizations aggregate scientific journals that are very akin to each other as regards their research topics, it is reasonable to assume that their propensity to cite is relatively homogeneous. The approach that we will propose can be therefore categorized as *classification-dependent*, but – differently from most of the general delineations of fields of science – is certainly more "factual", being based on a real subdivision of the scientific community in highly specialized sub-communities with very specific research interests. The procedure will take into account the "intersections" of Societies, i.e., the fact that journals can be classified in more than one Society.

After estimating the journal citing propensity, we will finally present a procedure for obtaining a rough normalization of the results of the study by Canavero et al. (2014).

The remaining of the paper is organized in three sections. Section 2 presents the methodology for constructing the indicators of propensity to cite. The first part is about the study at the level of individual journal and the second at the level of Society. Special attention is given to the description of the indicators introduced in the analysis, their meaning and construction. Next, it is illustrated a possible procedure to normalize the results of the original study (IEEE, 2014). Section 3 reports the results of the analysis; several interesting facts emerge: (i) the journal citing propensity is relatively stable over time, (ii) the results of the two types of studies are mutually consistent and (iii) the distributions of the references given by the journals related to the same Society(ies) are not very different from each other. In the final section the conclusions are given, highlighting the original contributions and limitations of the work and presenting some suggestions for future research.

This paper is the extended version of the paper (Franceschini & Maisano, 2012), presented at STI 2012 (17th International Conference on Science and Technology Indicators) in Montréal, Canada, September 2012.

2. Methodology

2.1. General concepts

For each journal, we collected the number of references given by the articles published during the period from 2006 to 2011, relying on data harvested from Scopus database in January 2012 (Scopus-Elsevier, 2014). This database was chosen since: (1) along with Web of Science, it is the one with the greatest coverage and accuracy as regards the scientific production in the Engineering field, (2) data collection was performed using a dedicated application able to automatically querying this specific database, and (3) it is relatively accurate in classifying the different types of article (i.e., research papers, reviews, conference proceedings papers, short notes or communications, letters to the editor, etc.).

Although the coverage of Scopus is generally high, in rare cases it may happen that some IEEE journals are not fully indexed in the period of interest (the last column of Table 1 reports the information on the Scopus coverage). However, these imperfections will not affect the analysis significantly.

The propensity to cite will be evaluated using the references given by the single IEEE journal articles. The use of references is supported by some fundamental reasons, better described in (Franceschini, Galetto, Maisano, & Mastrogiacomo, 2012) and summarized as follows:

- On average, in a model configuration of isolated (sub-)fields, the propensity to cite of the field depends on the average length of bibliographies. Thus, for a significant set of papers in a specific (sub-)discipline, the average number of citations obtained and references given are generally proportional (Egghe & Rousseau, 1990).
- Unlike citations obtained, references are immediately available at the moment of the publication of an article and do not require any accumulation time.
- It was empirically found that the average (or median) number of references of a journal's articles is more stable over time than that of the citations obtained (Garfield, 1979).

A critical aspect is the presence of different types of articles (e.g., research articles, short notes/communications and reviews) with citing propensities significantly different. Mixing them together may result in introducing unavoidable distortions in the analysis. The problem is even more evident considering the fact that some of the IEEE journals are specialized in reviews or letters (respectively, R1–R6 and L1–L7 in Table 1). The simplest way to avoid inappropriate aggregations is to exclude certain types of articles. Also, to avoid interference from editorial materials (prefaces, corrections), articles with zero references will be deliberately ignored.

2.2. Study at journal level

For each journal the following indicators are constructed on the basis of research papers only:

- $\bar{r}_J$ and $\tilde{r}_J$, i.e., the mean and median number of references given by the articles published in the same journal (J) in a specific time-window.
- $Q_J^{(1)}$ and $Q_J^{(3)}$, i.e., the first and third quartile concerning the number of references given by the articles published in the same journal (J) in a specific time-window.
- IQR_J, i.e., the inter-quartile range concerning the number of references given by the articles published in the same journal (J) in a specific time-window. Obviously, it is given by:

$$IQR_J = Q_J^{(3)} - Q_J^{(1)} \quad (1)$$

- s_J, i.e., the standard deviation concerning the number of references given by the articles published in the same journal (J) in a specific time-window.

For each journal, these indicators will be calculated in the period from 2006 to 2011, both (1) on yearly basis and (2) aggregating the total papers published in the entire period. Due to the larger sample of papers, the aggregated indicators are likely to give a more robust estimate of the propensity to cite, provided that there are not significant variations from year to year.

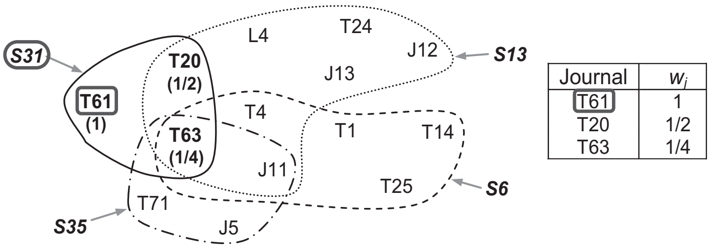

Fig. 1. Representation of the fractional approach for weighting the article contributions from two journals (i.e., T20 and T63) related to the same Society(ies) (S31) of the journal of interest (T61).

Between $\bar{r}_J$ and $\tilde{r}_J$, we believe that the most appropriate indicator of citing propensity is the latter: actually, the median is more robust than the mean value because it is less influenced by outliers.

2.3. Study at the level of IEEE Societies

In this case the indicators relating to the journal of interest (J) are constructed by expanding the sample of articles to other journals sponsored by the same Society(ies) of J. The article contributions from different journals are weighted introducing a fractional approach in which a paper from a journal classified in N Societies is counted as $1/N$ paper from a journal sponsored by a unique Society. Similar approaches are implemented in many of the *classification-dependent* field normalizations, aimed at aggregating journals from different subject categories (Braun & Glänzel, 1990; Lundberg, 2007; Rons, 2012; Waltman, Van Eck, Van Leeuwen, Visser, & Van Raan, 2011).

To clarify the concept, the approach is visualized in Fig. 1, considering T61 as a journal of interest (sponsored by S31). The contributions of the articles from other journals within the same Society of T61 (i.e., T20 and T63) are fractional (respectively, ½ and ¼), based on the number of sponsoring Societies. We remark that the weight of T61 would have been 1 in any case – i.e., even if it were sponsored by more than one Society – since it is the journals of interest. It can be noticed that journals that are not directly included in the Society(ies) of T61 (such as J11, J12, J13, and T24) are not taken into account because their research domain is likely to be different.

Table A.3 (in appendix) reports the resulting weights related to the article contributions issued by the journal of interest and other journals sponsored by the same sponsoring Society(ies).

The indicators used in this study at the level of Society are similar to those introduced in Section 2.1, except that they are not exclusively relating to articles in the journal of interest but they also include the (weighted) contributions from other journals sponsored by the same Society(ies). To distinguish these "weighted" indicators from the previous ones, their abbreviations are preceded by the superscript "w"; here follows a brief description:

- ${}^{w}\bar{r}_J$ is the weighted mean of the numbers of references concerning the papers published in the period from 2006 to 2011, by journals related to the same Society(ies) of J. This indicator is obtained according to the formula:

$$ {}^{w}\bar{r}_J = \frac{\sum_{j \in A_J} \left(\sum_{i=1}^{P_j} w_j \cdot (r_j)_i \right)}{\sum_{j \in A_J} \left(\sum_{i=1}^{P_j} w_j \right)} \tag{2} $$

  where J is the journal of interest, j is a generic journal of the set (A_J) embracing the journals in the sponsoring Society(ies) of J (e.g., in the example in Fig. 1, A_J = {T61, T20, T63}), w_j is the weight associated with the jth journal (see Table A.3), i is a generic paper of the (P_j) total papers published by the jth journal, and $(r_j)_i$ is the corresponding number of references.
- ${}^{w}\tilde{r}_J$, i.e., the weighted median number of references given by the articles from the journals sponsored by the same Society(ies) sponsoring J, in the period from 2006 to 2011. This indicator is obtained by ordering in ascending order the articles on the basis of their number of references – $(r_j)_i$ – and considering the "central" value, for which the cumulative of weights is equal to the 50% of their sum.
- ${}^{w}Q_J^{(1)}$ and ${}^{w}Q_J^{(3)}$, i.e., the weighted first and third quartile of the number of references given by the articles from the journals sponsored by the same Society(ies) sponsoring J, in the period from 2006 to 2011. The construction of these indicator is similar to the ${}^{w}\tilde{r}_J$'s, considering the article $(r_j)_i$ values for which the cumulative of weights corresponds, respectively, to the 25% and 75% of their sum.
- ${}^{w}IQR_J$, i.e., the weighted inter-quartile range, given by:

$$ {}^{w}IQR_J = {}^{w}Q_J^{(3)} - {}^{w}Q_J^{(1)} \tag{3} $$

- ${}^{w}s_J$, i.e., weighted standard deviation of the references given by the articles from the journals sponsored by the same Society(ies), in the period from 2006 to 2011. This indicator is obtained as:

$$ {}^{w}s_J = \sqrt{\frac{\sum_{j\in A_J}\left\{\sum_{i=1}^{P_j} w_j\cdot[(r_j)_i - {}^{w}\tilde{r}_J]^2\right\}}{\left[\left(\sum_{j\in A_J}P_j\right)-1\right]\cdot\sum_{j\in A_J}(P_j\cdot w_j)}} \quad (4)$$

In the presentation of the results we will also check the consistency between this new set of (weighted) indicators and those defined in Section 2.2.

2.4. Normalization of the results of the original study

A sub-field normalization of (part of) the results of the original study can be performed using the indicators of citing propensity defined in Section 2.2. A normalization term (NT_J) related to the generic journal J is defined as:

$$NT_J = \frac{\tilde{r}_{IEEE}}{{}^{w}\tilde{r}_J} \quad (5)$$

being:

- ${}^{w}\tilde{r}_J$ is the indicator of J's citing propensity, resulting from the previous study.
- $\tilde{r}_{IEEE}$ is the median number of references given by the totality of the papers analyzed from all the IEEE journals in Table 1, in the period from 2006 to 2011.

We specify that the term $\tilde{r}_{IEEE}$ represents a rough estimator of the propensity to cite of the whole set of the IEEE publication galaxy's articles and should be seen as a constant or "conventional unit". Obviously, $NT_J = 1$ in the case ${}^{w}\tilde{r}_J = \tilde{r}_{IEEE}$. Instead, in the case the citing propensity of J is higher/lower than that of the total population, NT_J will be lower/higher than 1.

NT_J terms can be used to normalize the citation statistics related to journal J, in the original study. For example, CPP values relating to a set of articles of J can be normalized according to:

$${}^{n}CPP_J = CPP_J \cdot NT_J \quad (6)$$

being ${}^{n}CPP_J$ the normalized CPP_J values.

The philosophy of this normalization is similar to that proposed by Nicolaisen and Frandsen (2008), where citation scores of journal articles are normalized by an inverse function of their propensity to cite. This normalization can be justified by the fact that – for large groups of publications with relatively modest citation transfers with respect to other disciplines – the average number of references given tends to be roughly proportional to the average number of citations obtained. This general linkage has been largely debated in the literature since four–five decades. For more information, we refer the reader to various contributions from the existing literature; specifically, we can distinguish between papers containing formal models, such as (Egghe & Rousseau, 1990; Franceschini et al., 2012; Franceschini, Maisano, & Mastrogiacomo, 2014; Pinski & Narin, 1976; Zitt & Cointet, 2013; Zitt, 2011), and papers with statistical arguments, such as (Alimohammadi & Sajjadi, 2009; Corbyn, 2010; Garfield, 1972; Ravichandra Rao, 2012; Walters, 2006; Webster, Joanason, & Schembe, 2009).

It is important to clarify that this normalization technique is based on the assumption that the propensity to cite of a journal J (which is quantified by the $\tilde{r}_J$ or ${}^{w}\tilde{r}_J$ terms) reflects that one of the citing articles, i.e., those articles citing the articles issued by J.

3. Results

3.1. Results of the study at journal level

The indicators defined in Section 2.2 were calculated for each journal on annual basis, including research papers only. See results in Table A.1. Despite the little coverage defect of Scopus database (see the last column of Table 1), data relating to most of the IEEE journals were available.

A first observation is that the annual $\tilde{r}_J$-values of a journal are relatively stable over the time: as a proof, their standard deviation is relatively low, generally not larger than the 10% of the annual $\tilde{r}_J$-values (s_{06-11}, in the last column of Table A.2).

Due to the relatively small variations in the annual $\tilde{r}_J$ journal values (which can be extended to $\tilde{r}_J$ values), it seems reasonable to construct an "overall" indicator by aggregating all the papers published by the journal of interest, during the whole period from 2006 to 2011 (see Table A.2). These "aggregated" indicators provide a more representative picture of a journal's citing propensity than the corresponding annual indicators, because they are based on a larger sample of articles.

To understand whether differences in terms of propensity to cite among journals are significant, we constructed the box-plot referring to the distribution of the number of references for individual IEEE journals, aggregating the articles in the period from 2006 to 2011 (see Fig. 2). As shown, there are significant differences between the journals in question (since

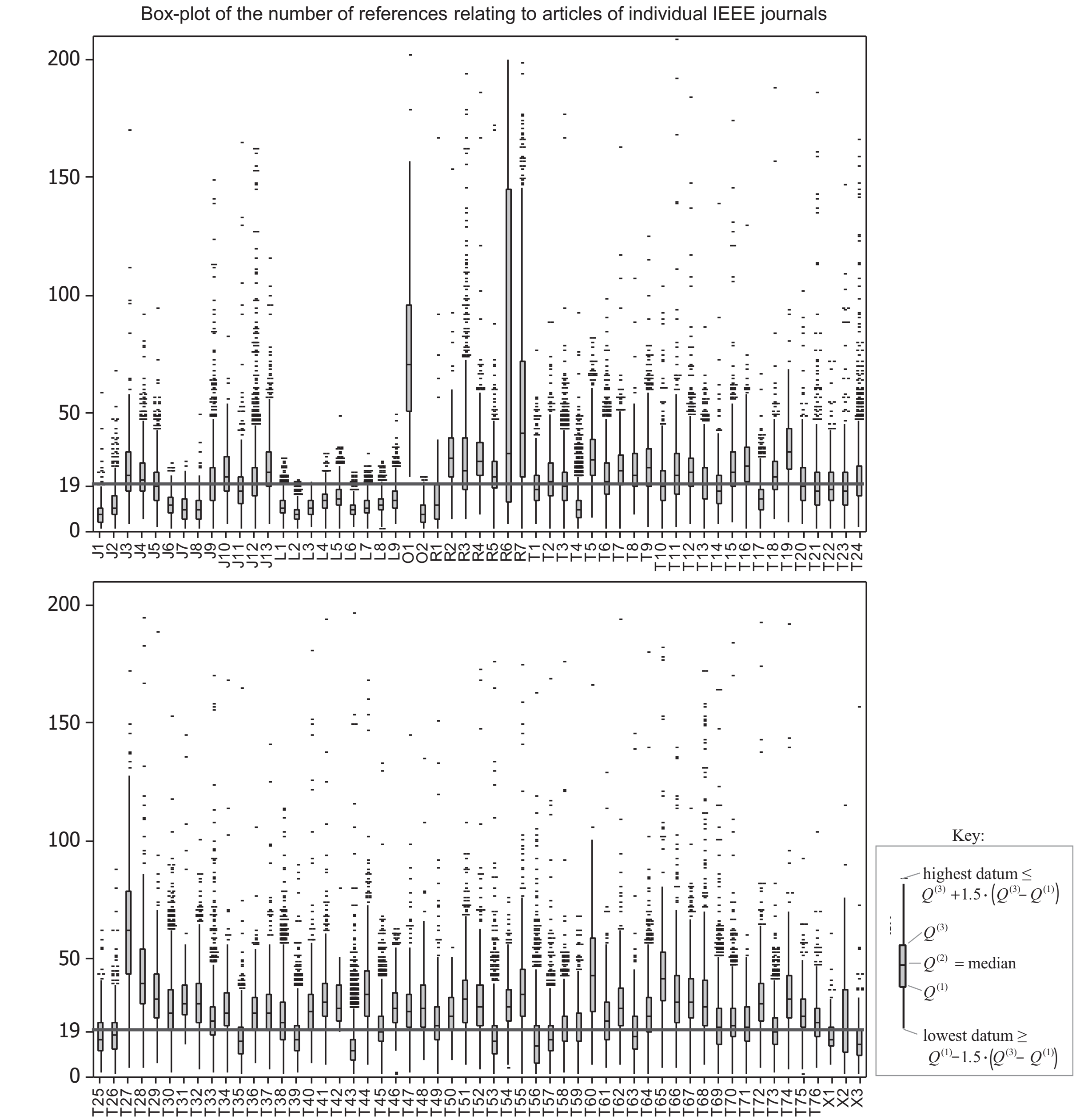

Fig. 2. Box-plot referring to the distribution of the number of references related to articles from individual IEEE journals, in the period from 2006 to 2011. For the purpose of readability, journals are divided in two groups. The horizontal solid line corresponds to the value of $\tilde{r}_{IEEE}$, i.e., the median number of references relating to the totality of the IEEE journal papers. Any data not included between the whiskers is plotted as an outlier with a "+".

many of the notches do not necessarily overlap). In addition, it can be seen that the $\tilde{r}_{IEEE}$ value (19) is often "external" to the notches related to several journals.

It can be also noticed that, since the distributions are right-skewed, their dispersion tends to increase with the median value, i.e., the notches relating to journals with large median values tend to be "oblong".

As expected, the most obvious differences in terms of propensity to cite are those between journals of different types, e.g., L, R or X with respect to J or T. For example, most of the type L journals have low $(r_J)_i$ values, because they generally consist of brief studies or communications with short reference lists. Nevertheless, it is surprising to notice that they generally obtain a number of citations comparable to those of traditional research articles, most of which come from standard research papers. On the contrary, the reference lists of the type R journals are generally larger than those of other journal types. Then again, many of the citations obtained are likely to come from standard research articles. Of course – the number of citations obtained being equal – it would be meaningless to say that the articles of type L journals are better than those of other journals (e.g., type R or T), just because of their lower propensity to cite. The reason is that the propensity to cite of type L, R or other "special" journal articles is likely to be different to that of their citing articles, most of which are standard research articles. For this reason, the normalization technique suggested in Section 2.3 will be applied to type J and T journals only, excluding the "special" journal types L, R, O and X. Actually, the great majority of the articles on J and T journals are research papers.

Having said that, it should be remarked that differences in terms of citing propensity are also evident among journals of the same type, for example journals of type T. For example, in Fig. 2 compare T27 and T65 (high propensity) with T4 or T43 (low propensity).

3.2. Results of the study at level of IEEE Societies

For a journal, the weights associated with the other journals related to the same Society(ies) are obtained according to the fractional approach illustrated in Section 2.2. The resulting weights are reported in Table A.3.

To avoid confusion and distortion, analysis includes standard research papers from the journal types J and T only. The results of this analysis are reported in Table A.4. Again, it is interesting to identify the journals in the most "sparing" or "generous" subfields, as regards their citation culture. Let us now give an interpretation of some specific cases. For example, journals T27 and T60 stand out for their high citing propensity, probably due to their inter-disciplinary vocation. A similar higher-than-average propensity is observed for journals of the bio-engineering subfield (e.g., T8, T9, T37, T48), probably an effect of the citation culture "inherited" from Biology. On the contrary, other journals in relatively "isolated" sub-fields – like T14, T21, T53 or T56 – are characterized by lower-than-average propensities.

There is a general correlation between the results relating to the study at the level of Societies and those at level of individual journal. For example, comparing the overall ${}^{w}\tilde{r}_J$-values with the overall $\tilde{r}_J$-values (in Tables A.2 and A.4, respectively), there is a high correlation ($R^2 \approx 90\%$); this can be seen as an empirical proof that journals related to the same Society are very similar in terms of propensity to cite and therefore their aggregation is a convenient way of enlarging the sample of articles for a better estimate.

This result could be confirmed by showing that the variability in propensity *within* Societies is significantly smaller than that *between* Societies. Unfortunately, the classical one-way analysis of variance (ANOVA) approach cannot be properly applied to this specific case, for at least three reasons (Box, Hunter, & Hunter, 1978):

1. The assumption of independence between samples (i.e., Societies) is violated since many of the journals analyzed are classified in multiple Societies.
2. Sample sizes are unbalanced as the number of articles issued by the journals sponsored by one Society is not constant.
3. The assumption of normality is violated because the variable of interest (i.e., the number of references given by the articles related to a Society) follows a non-normal right-skewed distribution.

These obstacles can be bypassed by adopting a statistically less rigorous qualitative approach. In analogy with the approach presented in Section 2.3, for each Society (S) it was constructed the weighted distribution of the $({}^{w}r_S)_i$ terms, i.e., the number of references given by articles issued by the journals classified in S. The weight associated with each $({}^{w}r_S)_i$ term is inversely proportional to the number (N) of the sponsoring Societies of the corresponding journal. For example, considering S15, the articles issued by T44 will have a weight ¼ since this journal is sponsored by $N = 4$ Societies; on the other hand, the articles issued by T37 will have a weight ½ since this journal is sponsored by $N = 2$ Societies (see Table A.3). This weighting system was chosen for two main reasons: (i) it relies on the reasonable assumption that journals sponsored by one or a few Societies are more "distinguishing" than other journals sponsored by a relatively high number of Societies and (ii) the fractional mechanism is in line with the one already introduced in Section 2.3.

In analogy with the indicators seen in Section 2.3, we can define some weighted position indicators relating to the $({}^{w}r_S)_i$ distributions: ${}^{w}Q_S^{(1)}$, ${}^{w}Q_S^{(2)} = {}^{w}\tilde{r}_S$ and ${}^{w}Q_S^{(3)}$, i.e., the first, second (or weighted median) and third weighted quartile of the number of references given by the articles from the journal sponsored by the Society of interest (in the period from 2006 to 2011). These indicators are obtained by ordering in ascending order the $({}^{w}r_S)_i$ values of the articles of interest and considering the values for which the cumulative of weights is equal to, respectively, the 25%, 50% and 75% of their sum. The resulting values are represented graphically through the special "weighted" box-plots in Fig. 3.

This diagram shows significant differences between the various Societies, since many of the notches do not overlap. Albeit in a purely qualitative manner, this representation shows that the variability *within* Societies is generally lower than that *between* Societies. Societies can therefore be seen as pools of relatively homogeneous journals, in terms of propensity to cite.

Another interesting point is analyzing the "shape" (or skewness) of the distribution of the weighted $(r_J)_i$ values related to a journal. There is no doubt that the use of an individual central tendency indicator – like the (weighted) median ${}^{w}\tilde{r}_J$ – when dealing with very skewed distributions, can sometimes be misleading. The interest of addressing citation distributions for bibliometric indicators practice has been largely expressed in the scientific literature since many years ago; for the purpose of example (see Glänzel & Schubert, 1993; Schubert, Glänzel, & Braun, 1987). Comparisons of skewed distributions through a single central tendency indicator can be tolerated in the case these distributions are not very dissimilar in shape. This similarity can be roughly checked by considering the relative position of some "reference points": i.e., the first, second and

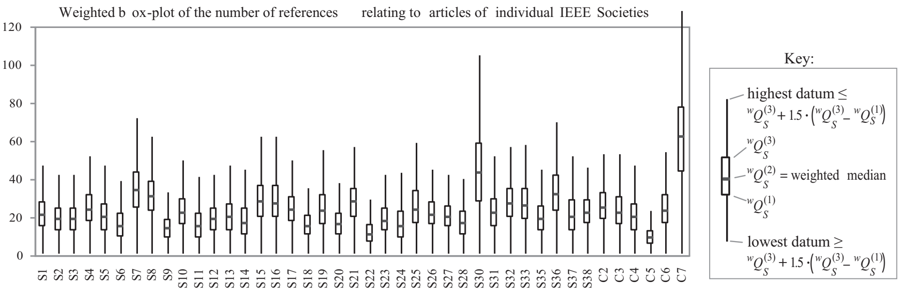

Fig. 3. "Weighted" box-plot referring to the distribution of the number of references given by the articles from the journal sponsored by the Society of interest, in the period from 2006 to 2011. $^wQ_S^{(1)}$, $^wQ_S^{(2)}$ and $^wQ_S^{(3)}$ are the first, second and the third weighted quartile. This diagram does not include the Societies that do not sponsor any IEEE journal.

third (weighted) quartile of the $(^wr_J)_i$ (weighted) distributions, respectively, $^wQ_J^{(1)}$, $^w\tilde{r}_J$ and $^wQ_J^{(3)}$ (defined in Section 2.3). A coarse indicator of "similarity" is given by the relative position (rp_J) of $^w\tilde{r}_J$ with respect to $^wQ_J^{(1)}$ and $^wQ_J^{(3)}$, which is obtained by applying the so-called *min-max normalization* (Nardo et al., 2005):

$$rp_J = \frac{^w\tilde{r}_J - {}^wQ_J^{(1)}}{^wQ_J^{(3)} - {}^wQ_J^{(1)}} \tag{7}$$

Of course, in the case two journal-related distributions are identical in terms of shape, the expected rp_J values will be equal. The rp_J values concerning the IEEE journals are reported in the last column of Table A.4. The fact that the median values are roughly in the middle of the first and third quartiles is confirmed by the rp_J values close to 50%. More precisely, the average of rp_J values is around 46% because of the typical right-skewness of these distributions. Furthermore, fluctuations of the rp_J values are relatively small (standard deviation around 4%) proving that the distributions of interest are not tremendously dissimilar in shape; therefore the use of the median (or other indicators of central tendency) is relatively safe.

3.3. Implementation of the normalization technique

Normalization terms (NT_J) relating to individual journals can be calculated by dividing $\tilde{r}_{IEEE}$ (=19) by the $^w\tilde{r}_J$ values (reported in Table A.4), according to Eq. (5). Next, these terms can be used for "correcting" the *CPP* values presented in the original study (Table A.5 reports the values of the indicators before and after the normalization). For the purpose of example, Fig. 4 shows the result of the IEEE journal analysis in 2009, using, respectively (1) original CPP_J values and (2) corrected ones (i.e., $^nCPP_J$), according to Eq. (6). Only journal types J and T were considered. It can be noticed that the correlation among the two indicators is relatively weak ($R^2 \approx 0.64$), confirming the great influence and importance of sub-field normalization. Similar considerations can be extended to the other years analyzed.

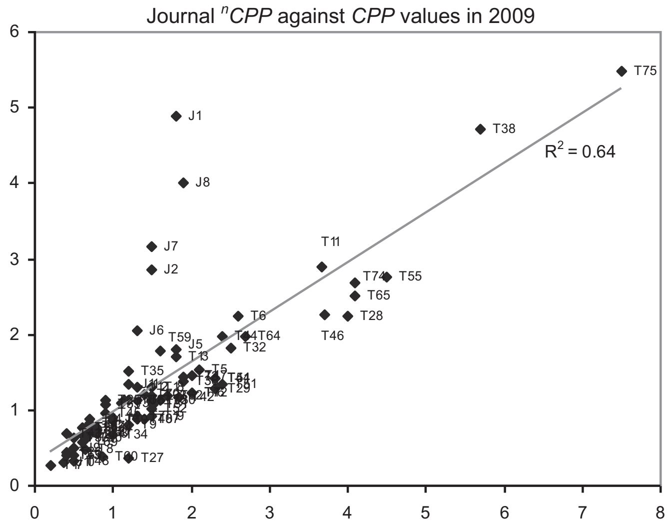

Fig. 4. Scatter plot representing the normalized *CPP* values, (or ^nCPP) against *CPP* values of the IEEE journals in 2009. Normalization is performed according to Eq. (6).

4. Conclusions, limitations and future works

4.1. Final discussion

The main outcome of this study is highlighting the significant difference among the IEEE journals in terms of propensity to cite. This result is only apparently obvious in view of the fact that the journals analyzed are all confined into a portion of the Engineering scientific field.

Two types of estimates of the propensity to cite were proposed, respectively, at the level of (1) individual journals and (2) journals of the same Society, introducing a proper weighting system. According to the authors, the second approach is more appropriate. To justify this assertion, we recall that a typical problem when estimating the propensity to cite of a set of papers is the proper choice of a sample of homologous publications within the same (sub-)field: while small samples tend to bring to a poor estimation (low statistical significance), the risk of using too large samples is to mix together publications from different (sub-)disciplines and to make an estimation that does not reflect the propensity to cite within the specific area of interest (confusion between the contributions from different sub-fields). According to the authors, extending the publication domain to the journals sponsored by the same Society(ies) makes it possible to increase the reference sample, limiting the risk of confusing papers of disparate sub-fields.

The good agreement between the two estimates of the propensity to cite can be seen as an empirical validation of the effectiveness of the procedure at the level of Society. This procedure for selecting the sample is relatively simple to implement, compared to other approaches like those ones based on the neighbourhood.

The major “ingredients” of the proposed estimation are:

(1) Use of references since they are immediately available at the moment of the publication and, on average, tend to be proportional to the expected number of citations, reflecting the so-called “citation potential”. It was found that the annual $\tilde{r}_J$ or ${}^{w}\tilde{r}_J$ values of a specific journal are relatively stable over the years. Therefore, to make the estimation more reliable, these terms were calculated aggregating the publications in the whole period from 2006 to 2011. Owing to their stability, these terms could be used for normalizing the citations statistics concerning earlier or subsequent years (for example 3–5 years before and after the aforementioned time-window), implementing a sort of “extrapolation”. Obviously, for a more accurate estimation, it is necessary to review these terms periodically (e.g., update them every 2 years).
(2) The information on the sponsoring Societies is used to delimit the publication sub-fields of the IEEE scientific journals. This information looks reliable due to the fact that Societies are associations of “homologous” scientists, specialized in a relatively limited subject area. Also, it was shown that the variability in citing propensity *within* Societies is generally larger than that *between* Societies.
(3) To further reduce the risk of confounding publications with different propensities to cite, “special” article types, such as letters, reviews, notes, etc., were excluded from the analysis.

The positioning of the IEEE journals before and after introducing this sub-field normalization is often significantly different. In particular, it is interesting to observe the “leap forward” of some journals concerning sub-disciplines with relatively low citing propensities.

4.2. Limitations

The proposed analysis has some limitations, most of which stemming from its simplifying assumptions:

- The study based on the Society sponsorship includes research articles only, excluding the other article types, in order to avoid mixing together contributions of different citing propensity. The technique should certainly be refined so as to extend the procedure to the “special” article types, most of which are included in the journal types R, L, X or O.
- A necessary condition for extending the proposed technique to generic sets of journals, external to the “IEEE galaxy”, is the presence of a highly specialized journal classification, similar to that obtained by using the information on the sponsoring IEEE Societies. In this sense, the technique lacks universality.
- The proposed technique is classification-dependent, which is certainly a limitation with respect to other more versatile (but also more complex) techniques that allow to define a normalization neighbourhood based solely on citation relations.
- The implicit assumption behind the proposed normalization technique is that the citing propensity of one IEEE journal reflects that of the corresponding citing articles. This hypothesis can be relaxed by introducing a more sophisticated normalization technique, which takes into account the propensity of the citing articles.

4.3. Future research

Regarding the future, the present research should be improved in order to get through the limitations above. In detail, possible developments are:

(1) Refining the technique for estimating the propensity to cite of groups of journals related to the same Society(ies), in order to include even "special" IEEE journal types, such as L, R, O and X.
(2) Revising the normalization technique, constructing a normalization term based on the propensity to cite of the articles citing the journal, not that of the journal itself. This strategy would appear as more appropriate, since the indicators to be normalized are based on the citations obtained. Without "reinventing the wheel", some existing (sub-)field normalization indicators – such as SNIP or Audience Factor – could be modified and adapted (Zitt, 2010; Moed, 2011).
(3) If possible, applying the same technique to other scientific fields (and sub-fields) where there exist other associations comparable to the IEEE Societies.

Acknowledgements

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Appendix.

See Tables A.1–A.5.

Table A.1
Results of the study of the journal citing propensity at level of individual journals on annual basis. For each journal, the annual indicators relating to the period from 2006 to 2011 are reported. Referring to the distribution of the number of references, it is reported the relevant median ($\tilde{r}_J$), mean value ($\bar{r}_J$), inter-quartile range (*IQR*) and standard deviation (*s*).

Journ.	Year	$\tilde{r}_J$	$\bar{r}_J$	IQR	s	Journ.	Year	$\tilde{r}_J$	$\bar{r}_J$	IQR	s	Journ.	Year	$\tilde{r}_J$	$\bar{r}_J$	IQR	s
J1	2006	7.0	7.5	6.0	5.1	J11	2010	19.0	22.4	13.0	12.3	L9	2006	12.0	13.0	5.8	5.5
J1	2007	7.5	8.3	5.3	5.6	J11	2011	17.0	19.1	7.0	13.1	L9	2007	13.0	14.2	7.0	5.8
J1	2008	6.0	8.9	6.3	10.5	J12	2006	20.0	22.8	11.0	15.0	L9	2008	13.0	13.6	6.0	5.4
J1	2009	6.0	7.3	7.5	5.0	J12	2007	19.0	21.6	11.0	12.1	L9	2009	13.0	14.1	7.0	6.0
J1	2010	6.0	7.6	7.0	5.0	J12	2008	20.0	23.2	14.0	15.9	L9	2010	14.0	14.5	7.0	6.1
J1	2011	7.0	7.2	6.0	3.6	J12	2009	20.0	21.3	12.0	11.4	L9	2011	13.0	14.6	8.3	6.1
J2	2006	13.0	14.4	10.0	7.4	J12	2010	20.0	23.0	11.0	11.0	O1	2008	58.0	58.0	19.0	26.9
J2	2007	8.0	9.8	4.0	6.2	J12	2011	22.0	23.8	10.3	11.6	O1	2009	66.0	73.4	29.0	34.6
J2	2008	8.0	12.3	7.0	11.1	J13	2006	23.0	25.3	12.3	11.2	O1	2010	69.0	77.3	44.0	40.5
J2	2009	10.0	11.2	9.0	7.9	J13	2007	24.0	26.5	15.5	14.2	O1	2011	81.5	88.6	65.0	45.2
J2	2010	9.0	10.0	6.5	5.5	J13	2008	27.0	28.8	15.0	12.6	O2	2006	8.0	8.6	6.3	4.4
J2	2011	10.0	11.9	8.0	5.8	J13	2009	28.0	28.9	13.0	13.1	O2	2007	7.0	7.3	8.0	4.9
J3	2006	20.0	23.9	15.0	12.9	J13	2010	27.0	29.3	16.0	13.9	O2	2008	6.0	6.9	6.0	4.7
J3	2007	24.0	24.9	14.5	13.3	J13	2011	25.0	28.2	15.8	13.6	O2	2009	7.0	8.1	5.0	3.9
J3	2008	24.0	25.9	14.0	11.7	L1	2006	9.0	9.6	4.0	4.1	O2	2010	7.5	8.2	8.3	5.2
J3	2009	20.5	26.4	9.5	26.0	L1	2007	9.0	9.8	5.0	4.4	O2	2011	9.0	8.8	7.5	5.4
J3	2010	27.5	29.2	19.0	11.8	L1	2008	9.0	10.0	5.0	4.1	R1	2006	11.0	23.5	12.0	35.4
J3	2011	32.0	30.1	18.0	12.8	L1	2009	11.0	11.2	6.0	4.4	R1	2007	14.5	17.6	13.8	17.4
J4	2006	24.0	24.7	14.0	11.1	L1	2010	11.0	11.3	6.0	3.9	R1	2008	–	–	–	–
J4	2007	21.0	23.1	12.0	10.2	L1	2011	11.5	12.0	6.0	4.5	R1	2009	9.0	9.0	–	–
J4	2008	21.0	22.5	12.0	9.2	L2	2006	6.0	6.7	3.3	3.1	R1	2010	–	–	–	–
J4	2009	22.0	24.4	12.0	11.2	L2	2007	6.0	6.8	5.0	3.3	R1	2011	–	–	–	–
J4	2010	23.0	24.7	12.8	10.2	L2	2008	7.0	7.3	4.0	3.0	R2	2009	28.0	28.4	15.5	13.1
J4	2011	24.0	26.1	13.0	11.2	L2	2009	7.0	7.6	3.0	3.1	R2	2010	32.0	35.6	16.0	21.0
J5	2006	16.0	17.5	9.8	8.0	L2	2010	8.0	7.9	4.0	3.1	R2	2011	30.0	31.2	18.3	13.8
J5	2007	17.0	18.5	11.0	8.3	L2	2011	8.0	8.3	4.0	3.2	R3	2006	24.0	31.0	19.0	26.7
J5	2008	17.0	19.4	11.0	9.9	L3	2006	10.0	9.9	2.0	3.8	R3	2007	22.0	26.2	15.5	15.9
J5	2009	19.0	20.3	10.0	9.4	L3	2007	10.0	10.9	4.0	3.7	R3	2008	28.0	32.5	19.0	21.0
J5	2010	21.0	21.7	12.0	9.3	L3	2008	12.0	10.8	4.0	3.1	R3	2009	23.0	28.8	16.0	19.9
J5	2011	22.0	23.1	11.0	9.3	L3	2009	9.0	10.4	7.0	4.3	R3	2010	31.0	39.2	29.0	25.7
J5	2006	12.0	12.1	5.3	4.3	L3	2010	9.0	9.5	4.0	4.4	R3	2011	28.0	37.1	26.0	26.5
J6	2007	12.0	11.4	7.5	6.0	L3	2011	11.5	10.2	2.5	4.2	R4	2007	30.0	30.7	12.0	11.5
J6	2008	13.0	12.5	7.5	5.3	L4	2006	12.0	12.7	5.0	4.6	R4	2008	31.0	33.4	16.0	13.4
J6	2009	10.5	10.8	5.5	4.6	L4	2007	13.0	12.6	7.0	4.5	R4	2009	28.5	29.1	13.5	9.8
J6	2010	11.5	12.0	7.0	5.7	L4	2008	12.0	12.8	8.0	5.1	R4	2010	32.0	35.1	15.5	17.2
J6	2011	11.0	11.2	7.3	5.1	L4	2009	12.0	12.6	5.0	4.3	R4	2011	30.5	34.5	16.3	23.1

Table A.1 (*Continued*)

Journ.	Year	$\tilde{r}_J$	$\bar{r}_J$	IQR	s	Journ.	Year	$\tilde{r}_J$	$\bar{r}_J$	IQR	s	Journ.	Year	$\tilde{r}_J$	$\bar{r}_J$	IQR	s
J7	2006	7.5	9.4	7.8	5.9	L4	2010	13.0	13.1	5.0	4.2	R5	2006	22.0	24.0	11.0	9.3
J7	2007	10.0	11.1	9.0	6.3	L4	2011	13.0	13.6	5.0	3.7	R5	2007	23.0	24.7	13.0	9.3
J7	2008	7.0	8.5	7.0	5.9	L5	2006	14.0	14.4	8.0	6.0	R5	2008	23.0	25.6	11.0	14.7
J7	2009	10.0	12.3	11.3	7.7	L5	2007	13.0	13.7	7.0	5.5	R5	2009	24.0	24.3	11.5	10.0
J7	2010	10.0	10.3	8.5	6.1	L5	2008	13.0	13.6	6.0	5.5	R5	2010	23.0	29.6	10.0	24.2
J7	2011	8.0	8.6	8.3	5.0	L5	2009	14.0	14.3	6.5	5.6	R5	2011	26.0	28.1	11.0	11.5
J8	2006	9.0	9.8	3.8	5.7	L5	2010	15.0	15.8	8.0	6.6	R6	2009	13.0	15.0	13.0	10.4
J8	2007	9.0	9.6	6.0	6.8	L5	2011	16.0	16.0	7.0	5.4	R6	2010	149.0	146.6	48.0	41.5
J8	2008	9.0	9.9	9.5	5.9	L6	2006	9.0	9.4	4.0	3.4	R7	2006	33.0	44.2	46.3	38.1
J8	2009	9.5	9.2	6.0	5.1	L6	2007	9.0	9.0	4.0	3.2	R7	2007	42.0	52.2	45.3	40.7
J8	2010	10.0	11.4	8.0	6.5	L6	2008	9.0	9.0	4.0	3.0	R7	2008	50.0	57.8	51.0	37.6
J8	2011	8.0	10.1	8.8	9.3	L6	2009	9.0	9.6	4.8	3.4	R7	2009	41.5	51.2	54.3	42.0
J9	2006	18.0	20.2	12.0	13.3	L6	2010	9.0	9.4	4.0	3.1	R7	2010	47.5	55.6	48.3	35.9
J9	2007	17.0	18.5	12.0	9.6	L6	2011	9.0	9.7	3.0	3.2	R7	2011	41.5	52.8	47.8	39.9
J9	2008	19.0	23.6	14.0	18.5	L7	2006	10.0	10.2	4.0	3.6	T1	2006	15.0	16.8	10.0	7.8
J9	2009	19.0	20.2	12.0	10.5	L7	2007	10.0	10.1	4.0	3.4	T1	2007	17.0	19.4	10.5	9.9
J9	2010	20.0	20.2	14.0	10.4	L7	2008	10.0	10.0	4.0	3.5	T1	2008	17.0	19.3	12.0	10.5
J9	2011	21.0	24.4	14.0	16.2	L7	2009	10.0	10.6	5.0	3.8	T1	2009	18.0	18.8	11.5	8.8
J10	2008	19.0	20.1	16.3	10.6	L7	2010	11.0	11.1	5.0	3.8	T1	2010	20.0	21.6	10.8	9.8
J10	2009	26.5	27.8	19.8	13.2	L7	2011	11.0	11.7	5.0	3.9	T2	2006	18.0	21.0	14.5	10.9
J10	2010	21.0	22.7	10.5	9.6	L8	2006	11.0	11.6	6.0	4.3	T2	2007	18.0	20.0	11.0	10.0
J10	2011	31.5	32.9	17.5	10.7	L8	2007	10.0	10.8	5.0	3.9	T2	2008	21.0	21.2	11.0	10.3
J11	2006	15.5	18.9	12.8	10.1	L8	2008	11.0	11.4	6.0	4.1	T2	2009	19.0	21.7	15.0	11.6
J11	2007	16.0	19.7	14.0	15.6	L8	2009	11.0	11.8	5.0	4.1	T2	2010	23.0	24.9	13.0	12.4
J11	2008	14.5	17.1	13.0	16.2	L8	2010	12.0	12.9	6.0	4.5	T2	2011	24.0	25.3	12.0	12.6
J11	2009	17.0	19.3	11.0	12.5	L8	2011	12.0	12.3	6.0	4.4	T3	2006	18.0	20.0	12.0	9.8

Journ.	Year	$\tilde{r}_J$	$\bar{r}_J$	IQR	s	Journ.	Year	$\tilde{r}_J$	$\bar{r}_J$	IQR	s	Journ.	Year	$\tilde{r}_J$	$\bar{r}_J$	IQR	s
T3	2007	17.0	18.7	13.0	9.7	T15	2007	23.0	25.3	13.0	10.4	T27	2007	57.5	65.6	39.5	28.8
T3	2008	18.0	19.5	12.0	11.9	T15	2008	24.0	26.7	15.0	15.2	T27	2008	57.0	59.7	40.0	30.8
T3	2009	19.0	20.1	12.0	9.5	T15	2009	26.0	28.8	15.0	18.2	T27	2009	59.0	58.5	29.0	24.7
T3	2010	19.5	21.0	12.0	10.1	T15	2010	25.0	26.4	15.8	12.3	T27	2010	62.5	62.6	32.0	23.4
T3	2011	21.0	22.4	13.0	9.8	T15	2011	28.0	29.3	15.0	12.7	T27	2011	65.0	65.3	34.0	24.9
T4	2006	7.0	8.3	6.0	6.4	T16	2006	25.0	25.7	14.0	11.2	T28	2006	42.0	41.3	17.0	17.5
T4	2007	9.0	10.3	7.0	5.9	T16	2007	26.0	27.3	14.0	11.7	T28	2007	39.0	48.2	24.5	31.0
T4	2008	7.0	8.5	6.0	6.3	T16	2008	28.0	28.5	15.0	10.2	T28	2008	35.0	40.5	19.3	25.4
T4	2009	10.0	11.9	8.0	7.8	T16	2009	28.0	29.2	15.0	10.4	T28	2009	41.0	43.3	22.5	17.4
T4	2010	8.0	9.4	5.0	6.1	T16	2010	30.0	30.6	13.0	10.7	T28	2010	42.0	45.6	20.0	21.3
T4	2011	11.0	12.1	8.0	6.8	T16	2011	31.0	31.6	16.0	11.9	T28	2011	48.0	54.8	26.5	29.5
T5	2006	28.5	29.9	13.8	12.1	T17	2006	12.0	13.7	8.3	7.0	T29	2006	26.0	29.9	16.5	22.4
T5	2007	28.0	28.7	13.0	11.4	T17	2007	11.5	11.9	8.8	6.7	T29	2007	32.0	33.0	19.8	13.7
T5	2008	31.0	33.2	14.3	11.2	T17	2008	11.0	12.0	7.0	6.4	T29	2008	31.0	32.6	19.0	12.7
T5	2009	33.5	34.2	14.3	12.5	T17	2009	14.0	14.1	7.0	6.2	T29	2009	35.0	36.0	18.0	12.3
T5	2010	33.5	34.3	14.0	11.8	T17	2010	15.0	16.3	8.0	7.0	T29	2010	35.0	38.0	16.5	15.5
T5	2011	34.0	36.1	17.0	13.9	T17	2011	17.0	17.6	8.0	7.5	T29	2011	37.0	40.2	16.0	15.4
T6	2006	19.0	21.1	11.0	10.7	T18	2006	21.0	21.3	10.8	8.0	T30	2006	25.0	27.5	14.8	14.8
T6	2007	19.0	22.1	13.0	10.2	T18	2007	24.0	26.6	10.5	18.6	T30	2007	24.0	27.1	17.0	13.4
T6	2008	22.0	24.1	16.0	10.9	T18	2008	23.0	24.2	12.3	9.3	T30	2008	27.0	28.1	16.0	13.0
T6	2009	21.0	23.2	11.0	10.6	T18	2009	23.0	24.1	12.3	8.9	T30	2009	28.0	29.9	15.8	14.6
T6	2010	22.0	23.5	13.0	12.2	T18	2010	23.0	25.9	12.5	15.5	T30	2010	28.0	30.8	18.3	14.0
T6	2011	24.0	26.2	15.0	11.7	T18	2011	26.0	27.4	11.0	10.2	T30	2011	32.0	34.3	20.5	16.7
T7	2006	26.0	31.4	13.5	22.8	T19	2006	32.5	34.8	12.8	15.1	T31	2008	39.0	48.5	27.5	28.1
T7	2007	23.0	25.6	11.3	14.0	T19	2007	33.0	36.6	19.0	18.6	T31	2009	29.0	31.4	13.0	17.0
T7	2008	25.0	25.6	9.5	8.5	T19	2008	34.5	36.4	17.5	13.2	T31	2010	29.5	35.7	11.5	24.4
T7	2009	25.0	26.5	15.5	11.0	T19	2009	31.0	32.7	13.3	10.3	T31	2011	31.5	37.9	9.5	24.4
T7	2010	27.0	28.1	12.0	10.5	T19	2010	36.0	36.2	18.0	12.7	T32	2006	28.0	30.0	17.0	12.6
T7	2011	27.0	30.6	14.8	19.4	T19	2011	36.0	37.2	14.0	13.3	T32	2007	29.0	31.5	16.0	12.7
T8	2007	22.5	24.0	11.8	10.7	T20	2006	18.0	21.0	14.0	12.2	T32	2008	31.0	32.2	16.3	12.9
T8	2008	27.5	27.2	12.8	11.2	T20	2007	17.0	19.0	14.0	11.9	T32	2009	31.0	32.3	18.0	13.4
T8	2009	23.0	27.5	14.5	16.6	T20	2008	18.0	23.8	18.0	16.0	T32	2010	32.0	34.0	19.0	13.0
T8	2010	25.0	26.6	12.0	10.3	T20	2009	21.5	23.7	11.3	14.2	T32	2011	33.0	34.4	18.0	14.1
T8	2011	26.0	30.5	14.8	13.0	T20	2010	22.0	24.4	17.0	15.1	T33	2006	15.0	16.5	10.0	7.8
T9	2006	27.0	28.1	17.0	12.7	T20	2011	18.0	20.3	10.5	7.9	T33	2007	19.0	20.0	10.0	7.7
T9	2007	23.0	25.6	16.0	12.4	T21	2006	18.5	22.9	17.0	23.5	T33	2008	23.0	25.3	10.0	14.4
T9	2008	24.0	26.2	17.0	12.1	T21	2007	14.0	16.8	12.0	11.4	T33	2009	25.0	26.5	11.0	10.8
T9	2009	28.0	28.6	16.5	12.4	T21	2008	17.0	18.9	11.0	11.3	T33	2010	26.0	29.4	10.0	17.8
T9	2010	29.0	30.7	16.0	12.5	T21	2009	16.0	19.0	12.0	13.2	T33	2011	28.0	28.9	12.0	9.9
T9	2011	27.0	29.2	14.0	13.7	T21	2010	19.0	21.8	12.3	15.6	T34	2006	26.0	26.8	11.5	9.3
T10	2006	17.0	18.6	10.0	10.5	T21	2011	19.0	21.6	13.5	14.9	T34	2007	26.0	27.9	10.0	10.5
T10	2007	16.0	17.2	9.0	7.9	T22	2006	18.0	19.2	11.0	10.7	T34	2008	27.0	33.1	8.5	28.6

Table A.1 (*Continued*)

Journ.	Year	$\tilde{r}_J$	$\bar{r}_J$	IQR	s	Journ.	Year	$\tilde{r}_J$	$\bar{r}_J$	IQR	s	Journ.	Year	$\tilde{r}_J$	$\bar{r}_J$	IQR	s
T10	2008	16.0	18.8	12.5	12.4	T22	2007	18.0	20.0	13.0	10.7	T34	2009	31.5	31.4	13.0	10.3
T10	2009	20.0	22.5	14.0	12.4	T22	2008	17.0	18.7	8.3	8.6	T34	2010	27.0	28.9	13.0	11.5
T10	2010	20.0	21.7	10.0	9.4	T22	2009	16.5	18.1	9.0	9.6	T34	2011	29.0	35.6	16.3	20.5
T10	2011	25.0	31.5	15.0	20.2	T22	2010	21.0	21.9	14.0	10.5	T35	2006	12.0	14.4	9.0	7.5
T11	2006	21.0	23.1	13.0	10.7	T22	2011	19.0	22.6	11.0	13.0	T35	2007	12.0	14.4	7.0	8.4
T11	2007	25.0	29.8	17.5	27.3	T23	2006	14.0	16.8	12.0	9.2	T35	2008	14.0	15.3	10.8	8.1
T11	2008	20.0	23.7	14.0	14.2	T23	2007	15.0	17.7	11.0	12.7	T35	2009	15.0	16.0	8.0	7.8
T11	2009	24.0	24.8	17.0	13.0	T23	2008	13.0	16.0	12.0	9.9	T35	2010	16.5	17.0	11.5	7.8
T11	2010	25.0	26.6	16.0	12.0	T23	2009	18.0	21.9	14.0	17.1	T35	2011	18.0	19.1	12.0	13.2
T11	2011	30.0	30.3	18.0	11.1	T23	2010	20.0	23.6	14.0	13.9	T36	2006	25.5	27.4	16.8	13.9
T12	2006	21.0	22.6	12.0	9.7	T23	2011	18.0	19.4	12.8	9.5	T36	2007	27.0	26.9	12.3	9.6
T12	2007	22.0	23.9	12.0	11.5	T24	2006	19.0	21.3	11.3	13.3	T36	2008	26.5	26.3	15.3	9.8
T12	2008	23.0	25.2	13.0	13.2	T24	2007	19.0	21.7	13.0	14.9	T36	2009	25.0	27.3	15.0	11.1
T12	2009	26.0	27.4	12.0	11.7	T24	2008	19.0	22.2	12.0	14.4	T36	2010	27.0	30.1	17.5	14.3
T12	2010	28.0	29.1	12.3	10.7	T24	2009	19.0	22.0	14.0	11.3	T36	2011	28.5	29.6	13.8	11.2
T12	2011	30.0	30.5	14.0	11.2	T24	2010	22.0	25.2	16.0	16.0	T37	2006	26.0	26.6	13.8	10.3
T13	2006	18.0	19.4	12.0	9.0	T24	2011	23.0	24.7	13.0	10.7	T37	2007	27.0	27.6	19.0	13.7
T13	2007	19.0	19.9	13.0	9.3	T25	2006	17.0	18.1	14.3	11.2	T37	2008	27.0	28.6	12.3	12.4
T13	2008	19.0	19.8	12.3	9.7	T25	2007	14.5	15.7	11.5	8.9	T37	2009	28.0	30.3	14.0	18.9
T13	2009	19.0	20.6	14.0	9.7	T25	2008	18.5	19.8	12.8	9.0	T37	2010	28.0	28.5	14.0	12.5
T13	2010	21.0	22.4	12.3	10.2	T25	2009	14.0	17.4	8.5	10.3	T37	2011	28.0	29.7	14.3	10.4
T13	2011	22.0	23.2	11.0	10.2	T25	2010	15.5	19.8	11.3	11.8	T38	2006	22.0	24.3	17.0	14.8
T14	2006	18.0	19.6	11.0	10.7	T26	2006	14.0	15.8	9.0	6.2	T38	2007	21.5	23.3	16.0	12.4
T14	2007	16.5	17.8	11.0	7.6	T26	2007	14.0	15.6	9.0	10.7	T38	2008	23.0	23.7	16.5	12.1
T14	2008	17.0	20.7	14.5	15.3	T26	2008	17.0	17.4	10.0	8.3	T38	2009	23.0	24.6	15.0	11.6
T14	2009	15.0	18.2	10.0	11.4	T26	2009	19.0	19.3	9.0	8.9	T38	2010	24.0	27.5	18.0	14.3
T14	2010	20.0	20.0	10.8	9.2	T26	2010	21.0	21.2	10.8	10.1	T38	2011	26.0	28.1	17.0	14.7
T14	2011	–	–	–	–	T26	2011	22.0	24.1	11.0	11.3	T39	2006	14.0	15.6	10.0	8.0
T15	2006	25.0	26.3	14.0	10.5	T27	2006	67.0	63.6	35.3	26.0	T39	2007	13.0	13.7	9.0	8.0

Journ.	Year	$\tilde{r}_J$	$\bar{r}_J$	IQR	s	Journ.	Year	$\tilde{r}_J$	$\bar{r}_J$	IQR	s	Journ.	Year	$\tilde{r}_J$	$\bar{r}_J$	IQR	s
T39	2008	15.0	16.4	9.3	8.0	T51	2011	39.0	38.4	14.0	13.0	T63	2011	25.0	23.6	16.5	11.3
T39	2009	16.0	17.2	9.0	8.2	T52	2006	22.0	26.4	15.5	20.6	T64	2006	25.0	26.2	14.0	11.4
T39	2010	20.0	21.4	12.0	9.4	T52	2007	28.0	32.7	14.0	15.8	T64	2007	25.0	26.1	14.0	11.3
T39	2011	19.0	20.9	12.0	10.3	T52	2008	30.0	31.8	16.3	15.1	T64	2008	26.0	26.8	14.0	11.6
T40	2006	28.5	31.9	17.3	18.3	T52	2009	30.5	31.4	13.0	10.9	T64	2009	27.0	28.8	16.0	12.2
T40	2007	25.0	26.1	13.0	13.9	T52	2010	32.5	33.5	15.3	12.3	T64	2010	27.0	27.6	14.0	10.7
T40	2008	27.0	30.3	12.8	19.1	T52	2011	35.5	36.0	17.0	15.1	T64	2011	28.5	30.4	15.0	13.7
T40	2009	24.0	27.9	16.8	19.4	T53	2006	13.0	15.3	11.0	9.4	T65	2006	38.0	41.2	20.0	16.7
T40	2010	29.5	31.0	15.5	20.4	T53	2007	15.0	17.3	12.0	10.5	T65	2007	36.5	38.3	19.0	12.5
T40	2011	31.0	32.6	14.0	14.1	T53	2008	14.0	17.5	12.0	13.6	T65	2008	45.5	47.8	17.8	21.7
T41	2006	29.0	31.7	13.0	19.6	T53	2009	16.0	18.2	12.0	10.4	T65	2009	42.0	50.1	24.0	31.1
T41	2007	32.0	35.0	12.5	15.8	T53	2010	16.0	18.5	12.0	14.5	T65	2010	47.5	47.5	19.8	17.3
T41	2008	31.0	32.1	13.0	11.1	T53	2011	19.0	21.5	14.0	11.1	T65	2011	48.0	53.2	24.5	27.9
T41	2009	34.0	36.8	13.8	17.0	T54	2006	29.0	28.5	12.3	8.8	T66	2006	29.0	32.6	21.0	17.1
T41	2010	36.0	35.5	14.0	12.2	T54	2007	30.0	31.1	11.0	9.3	T66	2007	29.0	32.2	22.0	15.7
T41	2011	34.0	35.3	14.5	11.8	T54	2008	30.0	30.9	13.0	9.1	T66	2008	32.0	33.3	19.0	16.6
T42	2008	–	–	–	–	T54	2009	31.0	32.3	12.0	10.2	T66	2009	32.0	34.4	14.3	13.5
T42	2010	31.0	35.6	13.3	16.6	T54	2010	33.0	33.4	12.0	8.9	T66	2010	36.5	39.3	18.0	19.5
T42	2011	24.0	28.0	7.5	9.2	T54	2011	28.0	29.6	14.0	11.0	T66	2011	36.0	38.9	23.5	18.1
T43	2006	9.0	11.5	7.0	8.2	T55	2006	31.0	31.6	19.0	13.9	T67	2006	32.0	33.7	14.0	15.0
T43	2007	9.0	11.0	7.0	6.6	T55	2007	32.0	34.3	20.0	13.4	T67	2007	29.0	31.9	18.0	12.3
T43	2008	10.0	12.4	8.0	8.6	T55	2008	33.0	35.0	18.0	13.3	T67	2008	29.0	32.7	19.0	15.8
T43	2009	10.0	12.5	8.8	9.7	T55	2009	36.0	39.3	21.0	19.7	T67	2009	34.0	36.3	15.0	13.8
T43	2010	11.5	14.0	9.0	10.3	T55	2010	40.0	42.2	18.0	20.0	T67	2010	36.5	37.7	16.5	12.9
T43	2011	12.5	14.4	9.0	8.9	T55	2011	39.0	41.7	19.0	17.1	T67	2011	36.0	37.0	15.0	12.4
T44	2006	33.0	38.0	18.0	22.4	T56	2006	18.0	21.3	14.0	14.0	T68	2006	26.0	31.3	16.5	15.9
T44	2007	34.0	36.9	17.0	16.9	T56	2007	17.0	20.9	14.0	13.5	T68	2007	26.0	32.3	18.0	24.2
T44	2008	33.0	36.0	18.0	17.9	T56	2008	7.5	12.7	13.0	13.9	T68	2008	28.0	34.8	15.3	26.7
T44	2009	33.0	35.2	19.3	13.4	T56	2009	18.0	20.4	13.0	11.7	T68	2009	29.0	34.2	16.3	26.6
T44	2010	38.0	39.9	18.8	16.8	T56	2010	17.0	19.8	14.0	11.4	T68	2010	32.0	38.9	14.0	29.2
T44	2011	39.0	40.5	21.0	14.3	T56	2011	6.0	10.3	10.0	9.8	T68	2011	36.0	41.2	16.0	26.7
T45	2006	18.0	19.9	11.0	9.4	T57	2006	13.0	14.3	9.0	7.5	T69	2006	20.0	23.1	13.3	15.1
T45	2007	17.5	19.7	10.0	8.8	T57	2007	14.0	14.9	9.0	8.3	T69	2007	19.0	21.3	12.0	13.6
T45	2008	19.0	20.4	11.8	9.1	T57	2008	14.0	15.3	10.0	8.9	T69	2008	21.0	25.7	19.5	19.4
T45	2009	19.0	20.5	10.0	9.1	T57	2009	16.0	18.1	11.0	13.5	T69	2009	21.0	22.9	15.3	12.9
T45	2010	22.0	23.8	13.0	11.9	T57	2010	19.0	20.7	11.0	11.8	T69	2010	22.0	23.8	15.0	14.0
T45	2011	23.0	23.6	12.0	9.4	T57	2011	19.0	20.0	10.8	10.7	T69	2011	23.0	25.4	15.0	12.6
T46	2006	29.0	30.1	13.0	9.9	T58	2006	14.0	15.3	8.0	8.2	T70	2006	21.0	22.4	11.0	9.5
T46	2007	29.0	29.3	11.0	8.2	T58	2007	17.0	17.6	8.0	6.8	T70	2007	21.0	23.3	13.0	10.9

Table A.1 (*Continued*)

Journ.	Year	$\tilde{r}_J$	$\bar{r}_J$	IQR	s	Journ.	Year	$\tilde{r}_J$	$\bar{r}_J$	IQR	s	Journ.	Year	$\tilde{r}_J$	$\bar{r}_J$	IQR	s
T46	2008	27.0	27.9	12.0	9.3	T58	2008	20.0	21.7	11.0	12.3	T70	2008	21.0	22.5	12.0	9.5
T46	2009	29.0	31.3	14.0	10.5	T58	2009	20.0	21.5	11.0	9.4	T70	2009	23.0	24.3	13.0	12.0
T46	2010	29.0	30.9	15.0	11.1	T58	2010	23.0	23.9	12.0	10.6	T70	2010	24.0	25.9	12.0	11.6
T46	2011	33.0	33.2	11.0	9.7	T58	2011	24.0	25.8	14.0	10.3	T70	2011	25.5	28.6	13.3	20.0
T47	2006	24.0	26.6	15.0	13.3	T59	2006	18.0	18.8	11.0	8.5	T71	2006	22.0	22.9	15.0	9.6
T47	2007	27.0	28.5	12.0	12.9	T59	2007	18.0	19.4	12.0	9.4	T71	2007	21.0	22.8	15.5	9.6
T47	2008	27.0	27.9	12.0	10.7	T59	2008	18.0	19.7	12.0	9.5	T71	2008	21.0	22.8	14.0	10.0
T47	2009	27.5	28.2	15.0	11.2	T59	2009	21.0	21.5	13.0	10.1	T71	2009	21.0	21.9	14.0	10.0
T47	2010	34.0	34.7	16.5	10.7	T59	2010	23.0	23.6	11.0	9.7	T71	2010	21.0	22.9	14.0	10.2
T47	2011	30.5	32.4	14.3	16.1	T59	2011	23.0	22.7	11.8	9.1	T71	2011	21.0	23.0	15.0	10.4
T48	2006	26.0	30.1	19.3	13.4	T60	2006	30.0	37.7	25.0	18.9	T72	2006	28.0	29.9	12.8	13.9
T48	2007	26.0	26.7	14.5	10.7	T60	2007	42.5	51.5	34.5	34.0	T72	2007	30.0	31.4	15.8	13.9
T48	2008	26.0	27.5	11.5	10.5	T60	2008	44.0	47.6	17.0	19.4	T72	2008	31.0	32.3	17.0	12.5
T48	2009	29.0	32.2	16.5	12.3	T60	2009	44.0	50.2	37.0	26.9	T72	2009	29.0	32.3	14.0	16.2
T48	2010	36.0	34.8	16.5	12.2	T60	2010	41.0	42.2	27.0	18.8	T72	2010	35.0	34.4	14.0	12.1
T48	2011	25.5	29.1	20.0	13.1	T60	2011	48.0	45.6	20.0	16.6	T72	2011	35.0	36.8	14.0	16.1
T49	2006	21.0	22.5	11.0	14.1	T61	2006	23.0	23.2	14.0	12.0	T73	2006	18.0	19.4	11.0	9.2
T49	2007	21.0	22.5	15.5	11.3	T61	2007	24.0	24.4	13.0	9.5	T73	2007	17.0	18.2	10.0	8.9
T49	2008	19.0	22.2	12.5	16.5	T61	2008	19.0	20.0	10.0	9.1	T73	2008	18.0	19.3	10.0	8.2
T49	2009	24.0	26.1	13.5	12.5	T61	2009	24.5	26.3	15.3	15.6	T73	2009	19.0	19.8	10.8	8.3
T49	2010	23.0	26.9	13.0	16.4	T61	2010	28.0	29.6	15.5	17.1	T73	2010	21.0	22.6	12.5	8.6
T49	2011	25.0	25.7	16.0	10.9	T61	2011	26.0	29.0	18.0	12.4	T73	2011	22.0	23.7	13.0	9.7
T50	2007	21.5	23.2	12.5	10.3	T62	2006	25.0	29.7	18.0	13.8	T74	2006	27.0	28.7	13.5	9.9
T50	2008	20.0	23.7	14.3	10.4	T62	2007	28.0	29.7	14.0	12.2	T74	2007	29.0	34.3	16.5	19.3
T50	2009	33.0	33.3	14.8	8.9	T62	2008	28.0	29.4	16.0	12.5	T74	2008	32.5	37.0	16.0	26.8
T50	2010	23.0	26.6	11.5	7.0	T62	2009	30.0	30.9	17.0	12.2	T74	2009	30.0	31.5	18.0	13.8
T50	2011	28.0	28.2	10.0	9.8	T62	2010	31.0	35.1	19.0	21.9	T74	2010	35.0	35.0	19.0	13.5
T51	2006	27.0	29.3	19.8	13.6	T62	2011	30.0	32.8	16.5	11.8	T74	2011	36.0	38.1	16.8	14.5
T51	2007	29.0	30.7	20.0	15.5	T63	2006	18.5	19.9	12.3	11.4	T75	2006	25.0	25.8	10.0	10.1
T51	2008	33.0	34.9	17.8	15.5	T63	2007	16.0	18.2	12.3	17.9	T75	2007	25.0	25.2	12.0	9.0
T51	2009	35.0	35.7	17.5	15.3	T63	2008	15.0	16.7	11.0	10.9	T75	2008	26.0	26.8	11.5	9.1
T51	2010	32.0	34.8	18.3	15.1	T63	2009	16.0	17.7	12.8	9.1	T75	2009	27.5	28.6	11.3	9.8
						T63	2010	24.0	25.9	14.0	19.3	T75	2010	28.0	29.7	14.0	11.0

Journ.	Year	$\tilde{r}_J$	$\bar{r}_J$	IQR	s
T75	2011	28.0	28.4	10.0	8.1
T76	2006	18.0	18.7	11.0	8.7
T76	2007	19.0	20.2	10.5	8.2
T76	2008	21.0	22.1	10.0	8.6
T76	2009	25.5	26.7	11.0	13.5
T76	2010	25.0	26.4	11.5	10.7
T76	2011	27.0	26.9	13.5	9.7
X1	2006	14.0	16.4	7.0	8.7
X1	2007	16.0	17.2	6.5	9.3
X1	2008	18.0	18.6	6.0	6.0
X1	2009	17.0	19.6	7.0	6.9
X1	2010	22.5	27.2	20.3	20.1
X2	2006	21.0	29.2	24.0	26.2
X2	2007	13.0	16.5	18.0	15.4
X2	2008	21.0	27.4	22.5	20.9
X2	2009	18.0	19.5	22.3	16.8
X2	2010	34.0	33.1	34.0	22.3
X2	2011	28.0	33.9	27.0	23.2
X3	2006	12.0	11.7	8.0	5.8
X3	2007	12.0	13.3	8.0	8.2
X3	2008	15.0	15.9	9.0	6.6
X3	2009	14.0	15.6	11.3	8.0
X3	2010	15.0	17.1	13.0	18.2
X3	2011	16.0	18.0	10.0	10.0

Table A.2
Results of the study of the journal citing propensity at the level of individual journals. For each journal, the distribution of the reference numbers of the articles published in the period from 2006 to 2011 were constructed. The corresponding median ($\tilde{r}_J$), mean value ($\bar{r}_J$), inter-quartile range (*IQR*) and standard deviation (s) are reported in the first columns. In addition, a_{06-11} is the coefficient (slope) of the first order regression line relating to the annual $\tilde{r}_J$-values of individual journals (not reported here), and s_{06-11} is the standard deviation relating to these values.

Journ.	$\tilde{r}_J$	$\bar{r}_J$	*IQR*	*s*	a_{06-11}	s_{06-11}
J1	7.0	7.8	6.0	6.1	−0.13	0.66
J2	10.0	12.1	8.0	8.3	−0.07	1.56
J3	24.0	26.9	17.0	15.9	1.77	4.32
J4	22.0	24.4	12.0	10.8	0.20	1.38
J5	19.0	20.0	12.0	9.3	1.26	2.42
J6	11.5	11.7	6.3	5.3	−0.19	0.86
J7	9.0	10.2	9.0	6.3	−0.07	1.41
J8	9.0	9.8	8.0	6.8	−0.04	1.08
J9	20.0	22.0	14.0	14.7	0.71	1.44
J10	23.0	25.5	15.0	12.7	3.20	5.69
J11	17.0	20.1	11.0	16.3	0.51	1.66
J12	20.0	23.0	12.0	14.5	0.23	1.03
J13	25.0	27.9	15.0	13.4	0.57	1.97
L1	10.0	10.9	5.0	4.3	0.59	1.20
L2	7.0	7.5	4.0	3.2	0.46	0.89
L3	10.0	10.2	5.0	3.8	0.00	1.37
L4	13.0	12.9	6.0	4.4	0.14	0.55
L5	14.0	14.8	7.0	5.8	0.49	1.17
L6	9.0	9.3	4.0	3.2	0.00	0.00
L7	10.0	10.6	5.0	3.7	0.23	0.52
L8	11.0	11.7	5.0	4.3	0.31	0.75
L9	13.0	13.9	7.0	5.8	0.23	0.63
O1	71.0	77.1	44.5	37.0	2.40	4.87
O2	7.0	8.0	7.0	4.9	0.10	1.11
R1	11.5	21.7	12.8	31.3	–	–
R2	31.0	32.8	17.0	17.7	–	–
R3	26.0	33.0	22.0	24.1	1.20	3.56
R4	30.0	33.0	14.0	17.0	0.30	3.28
R5	23.0	25.5	11.3	12.5	0.46	1.21
R6	33.0	67.9	132.0	67.9	–	–
R7	42.0	51.7	49.0	39.3	1.33	4.45
T1	18.0	19.4	11.0	9.9	1.10	1.82
T2	21.0	22.8	14.0	11.7	1.23	2.59
T3	19.0	20.5	12.0	10.9	0.67	1.41
T4	9.0	10.5	7.0	6.8	0.57	1.63
T5	30.5	32.4	15.0	12.4	1.26	2.57
T6	21.0	23.4	13.0	11.2	0.94	1.94
T7	26.0	27.9	12.3	14.6	0.47	1.50
T8	24.0	27.5	14.0	12.9	0.45	2.08
T9	27.0	28.2	16.0	13.1	0.63	2.34
T10	19.0	21.5	13.0	13.7	1.61	3.50
T11	24.0	26.3	17.0	16.2	1.40	3.54
T12	25.0	26.5	12.0	12.8	1.89	3.58
T13	20.0	21.0	13.0	9.8	0.74	1.51
T14	17.0	19.3	12.0	11.2	0.35	1.79
T15	25.0	27.2	14.3	13.9	0.66	1.72
T16	28.0	28.8	15.0	11.8	1.20	2.28
T17	14.0	14.3	9.0	7.1	1.03	2.28
T18	23.0	25.1	12.0	12.3	0.63	1.63
T19	34.0	35.7	17.3	13.9	0.66	1.99
T20	19.0	22.0	14.0	13.2	0.51	2.07
T21	17.0	20.4	14.0	15.9	0.40	2.07
T22	18.0	20.3	12.0	10.9	0.36	1.33
T23	17.0	19.9	14.0	14.3	1.19	3.06
T24	20.0	23.2	13.0	14.1	0.83	1.83
T25	16.0	18.4	12.0	10.7	−0.40	2.04
T26	18.0	19.0	11.0	9.9	1.80	3.43
T27	62.0	63.1	34.3	27.2	−0.23	5.13
T28	40.0	45.2	23.0	23.7	1.29	4.26
T29	33.0	34.9	18.8	15.3	1.94	3.93
T30	27.0	29.6	17.0	14.6	1.37	2.80
T31	31.0	36.8	12.3	23.2	−2.20	4.63
T32	31.0	32.3	17.0	13.2	0.97	1.86
T33	24.0	25.6	12.0	13.0	2.51	4.84
T34	27.0	30.6	13.3	16.2	0.57	1.99
T35	15.0	16.3	11.0	9.4	1.31	2.50
T36	27.0	28.1	14.0	11.7	0.39	1.24

Table A.2 (*Continued*)

Journ.	$\tilde{r}_J$	$\bar{r}_J$	*IQR*	*s*	a_{06-11}	s_{06-11}
T37	27.0	28.9	15.0	14.1	0.40	0.82
T38	23.0	25.4	16.0	13.5	0.74	1.51
T39	16.0	17.6	11.0	9.3	1.34	2.79
T40	28.0	30.7	15.0	19.3	0.63	2.80
T41	32.0	34.5	14.0	14.9	1.14	2.50
T42	29.0	33.1	12.5	14.7	–	–
T43	11.0	12.8	9.0	9.1	0.83	1.64
T44	35.0	37.8	19.0	17.1	1.20	2.76
T45	19.0	21.2	11.0	9.8	1.10	2.23
T46	29.0	30.5	13.0	10.1	0.70	1.99
T47	28.0	29.1	14.0	12.8	1.47	3.40
T48	29.0	31.7	18.0	16.2	0.81	3.97
T49	22.0	24.4	14.0	13.6	0.89	2.23
T50	26.0	26.8	13.3	10.0	1.40	5.61
T51	33.0	34.0	18.0	15.0	1.96	4.15
T52	30.0	32.6	17.0	17.9	2.23	4.48
T53	15.0	17.7	12.0	11.9	1.00	2.07
T54	30.0	30.9	13.0	9.8	0.14	1.72
T55	35.0	37.4	20.0	17.1	1.81	3.50
T56	13.0	16.0	16.0	13.4	−1.43	5.48
T57	16.0	17.5	11.0	11.0	1.20	2.45
T58	20.0	21.4	11.0	10.9	1.94	3.72
T59	20.0	20.9	12.0	9.5	1.21	2.40
T60	43.0	45.5	30.8	23.6	2.43	6.10
T61	24.0	25.6	16.0	13.6	0.84	3.06
T62	29.0	31.0	16.0	14.3	1.03	2.16
T63	17.0	20.0	14.0	14.0	1.64	4.36
T64	26.0	27.6	15.0	12.0	0.70	1.36
T65	41.5	46.5	20.0	24.5	2.37	5.02
T66	32.0	35.6	20.0	18.2	1.46	2.96
T67	32.0	34.7	17.0	14.0	1.27	3.09
T68	30.0	38.9	19.0	29.4	2.17	4.54
T69	21.0	23.7	15.0	14.9	0.69	1.41
T70	22.0	24.1	12.0	11.6	0.89	1.76
T71	21.0	22.7	14.0	10.0	−0.14	0.41
T72	31.0	33.2	15.5	14.6	1.37	3.01
T73	19.0	20.2	11.0	8.9	0.94	1.94
T74	33.0	35.5	18.0	17.5	1.87	3.81
t75	26.0	27.5	12.0	9.7	0.73	1.43
t76	23.0	24.2	12.0	10.9	1.94	3.83
x1	16.0	18.3	8.0	9.2	1.80	3.16
x2	20.5	26.6	26.0	21.8	2.71	6.77
x3	14.0	15.5	11.0	10.4	0.76	1.63

Table A.3
Data used for studying the journal citing propensity at level of Society/Council. For each Journal (column "Journ.") are reported the sponsoring Society(ies) (column "Soc.") and the other journals sponsored by the same Society(ies) with the corresponding weights (in brackets).

Journ.	Soc.	Other journals of the Society/Council
J1	–	–
J2	–	–
J3	S25	–
J4	S26	J11 (1/8), J12 (1/7), L7 (1), R3 (1), T1 (1/2)
J5	S35	J11 (1/8), T63 (1/4), T71 (1/3)
J6	–	–
J7	–	–
J8	–	–
J9	C4	–
J10	C6	–
J11	S35	J5 (1), T63 (1/4), T71 (1/3)
	S3	T10 (1)
	S6	T1 (1/2), T4 (1/10), T14 (1), T25 (1), T63 (1/4)
	S9	R6 (1/2), T17 (1), T31 (1/3)
	S13	J12 (1/7), J13 (1/3), L4 (1), T4 (1/10), T20 (1/2), T24 (1), T63 (1/4)
	S18	T34 (1/5), T35 (1)
	S20	J12 (1/7), T4 (1/10), T39 (1)
	S26	J4 (1), J12 (1/7), L7 (1), R3 (1), T1 (1/2)
J12	S1	T2 (1)
	S5	L2 (1), O1 (1), R5 (1), T4 (1/10), T13 (1), T47 (1/4), T50 (1), T73 (1/2), T75 (1/2)
	S13	J11 (1/8), J13 (1/3), L4 (1), T4 (1/10), T20 (1/2), T24 (1), T63 (1/4)

Table A.3 (*Continued*)

Journ.	Soc.	Other journals of the Society/Council
	S20	J11 (1/8), T4 (1/10), T39 (1)
	S23	L6 (1), T4 (1/10), T45 (1)
	S26	J4 (1), J11 (1/8), L7 (1), R3 (1), T1 (1/2)
	S37	T4 (1/10), T44 (1/4), T69 (1)
J13	S32	T7 (1), T31 (1/3), T34 (1/5), T48 (1/6), T62 (1), T76 (1/2)
	S13	J11 (1/8), J12 (1/7), L4 (1), T4 (1/10), T20 (1/2), T24 (1), T63 (1/4)
	S17	T33 (1), T34 (1/5), T76 (1/2)
L1	S2	T3 (1)
L2	S5	J12 (1/7), O1 (1), R5 (1), T4 (1/10), T13 (1), T47 (1/4), T50 (1), T73 (1/2), T75 (1/2)
L3	S8	T16 (1), T19 (1), T31 (1/3), T34 (1/5), T37 (1/2), T41 (1), T42 (1/2), T46 (1), T47 (1/4), T48 (1/6), T54 (1), T55 (1), T65 (1), T71 (1/3), T72 (1), T74 (1/4), T75 (1/2)
L4	S13	J11 (1/8), J12 (1/7), J13 (1/3), T4 (1/10), T20 (1/2), T24 (1), T63 (1/4)
L5	S16	R2 (1), T30 (1)
L6	S23	J12 (1/7), T4 (1/10), T45 (1)
L7	S26	J4 (1), J11 (1/8), J12 (1/7), R3 (1), T1 (1/2)
L8	S33	R4 (1), T5 (1), T32 (1), T36 (1), T44 (1/4), T47 (1/4), T64 (1), T73 (1/2)
L9	S4	T8 (1/2), T11 (1), T12 (1), T47 (1/4), T71 (1/3)
O1	S5	J12 (1/7), L2 (1), R5 (1), T4 (1/10), T13 (1), T47 (1/4), T50 (1), T73 (1/2), T75 (1/2)
O2	–	–
R1	C7	T27 (1)
R2	S16	L5 (1), T30 (1)
R3	S26	J4 (1), J11 (1/8), J12 (1/7), L7 (1), T1 (1/2)
R4	S33	L8 (1), T5 (1), T32 (1), T36 (1), T44 (1/4), T47 (1/4), T64 (1), T73 (1/2)
R5	S5	J12 (1/7), L2 (1), O1 (1), T4 (1/10), T13 (1), T47 (1/4), T50 (1), T73 (1/2), T75 (1/2)
R6	S15	T8 (1/2), T9 (1), T37 (1/2), T44 (1/4), T48 (1/6), T52 (1), T74 (1/4)
	S9	J11 (1/8), T17 (1), T31 (1/3)
R7	–	–
T1	S6	J11 (1/8), T4 (1/10), T14 (1), T25 (1), T63 (1/4)
	S26	J4 (1), J11 (1/8), J12 (1/7), L7 (1), R3 (1)
T2	S1	J12 (1/7)
T3	S2	L1 (1)
T4	C5	–
	S5	J12 (1/7), L2 (1), O1 (1), R5 (1), T13 (1), T47 (1/4), T50 (1), T73 (1/2), T75 (1/2)
	S6	J11 (1/8), T1 (1/2), T14 (1), T25 (1), T63 (1/4)
	S11	T21 (1)
	S13	J11 (1/8), J12 (1/7), J13 (1/3), L4 (1), T20 (1/2), T24 (1), T63 (1/4)
	S20	J11 (1/8), J12 (1/7), T39 (1)
	S22	T43 (1)
	S23	J12 (1/7), L6 (1), T45 (1)
	S28	T26 (1), T57 (1), T59 (1)
	S37	J12 (1/7), T44 (1/4), T69 (1)
T5	S33	L8 (1), R4 (1), T32 (1), T36 (1), T44 (1/4), T47 (1/4), T64 (1), T73 (1/2)
T6	S10	T18 (1), T74 (1/4)
T7	S32	J13 (1/3), T31 (1/3), T34 (1/5), T48 (1/6), T62 (1), T76 (1/2)
T8	S4	L9 (1), T11 (1), T12 (1), T47 (1/4), T71 (1/3)
	S15	R6 (1/2), T9 (1), T37 (1/2), T44 (1/4), T48 (1/6), T52 (1), T74 (1/4)
T9	S15	R6 (1/2), T8 (1/2), T37 (1/2), T44 (1/4), T48 (1/6), T52 (1), T74 (1/4)
T10	S3	J11 (1/8)
T11	S4	L9 (1), T8 (1/2), T12 (1), T47 (1/4), T71 (1/3)
T12	S4	L9 (1), T8 (1/2), T11 (1), T47 (1/4), T71 (1/3)
T13	S5	J12 (1/7), L2 (1), O1 (1), R5 (1), T4 (1/10), T47 (1/4), T50 (1), T73 (1/2), T75 (1/2)
T14	S6	J11 (1/8), T1 (1/2), T4 (1/10), T25 (1), T63 (1/4)
T15	C2	–
X1	–	–
X2	–	–
X3	–	–
T16	S8	L3 (1), T19 (1), T31 (1/3), T34 (1/5), T37 (1/2), T41 (1), T42 (1/2), T46 (1), T47 (1/4), T48 (1/6), T54 (1), T55 (1), T65 (1), T71 (1/3), T72 (1), T74 (1/4), T75 (1/2)
T17	S9	J11 (1/8), R6 (1/2), T31 (1/3)
T18	S10	T6 (1), T74 (1/4)
T19	S8	L3 (1), T16 (1), T31 (1/3), T34 (1/5), T37 (1/2), T41 (1), T42 (1/2), T46 (1), T47 (1/4), T48 (1/6), T54 (1), T55 (1), T65 (1), T71 (1/3), T72 (1), T74 (1/4), T75 (1/2)
T20	S13	J11 (1/8), J12 (1/7), J13 (1/3), L4 (1), T4 (1/10), T24 (1), T63 (1/4)
	S31	T61 (1), T63 (1/4)
T21	S11	T4 (1/10)
T22	S12	T42 (1/2)
T23	S14	–
T24	S13	J11 (1/8), J12 (1/7), J13 (1/3), L4 (1), T4 (1/10), T20 (1/2), T63 (1/4)
T25	S6	J11 (1/8), T1 (1/2), T4 (1/10), T14 (1), T63 (1/4)
T26	S28	T4 (1/10), T57 (1), T59 (1)
T27	C7	R1 (1)

Table A.3 (*Continued*)

Journ.	Soc.	Other journals of the Society/Council
T28	S7	T29 (1), T48 (1/6), T51 (1), T74 (1/4)
T29	S7	T28 (1), T48 (1/6), T51 (1), T74 (1/4)
T30	S16	L5 (1), R2 (1)
T31	S9	J11 (1/8), R6 (1/2), T17 (1)
	S8	L3 (1), T16 (1), T19 (1), T34 (1/5), T37 (1/2), T41 (1), T42 (1/2), T46 (1), T47 (1/4), T48 (1/6), T54 (1), T55 (1), T65 (1), T71 (1/3), T72 (1), T74 (1/4), T75 (1/2)
	S32	J13 (1/3), T7 (1), T34 (1/5), T48 (1/6), T62 (1), T76 (1/2)
T32	S33	L8 (1), R4 (1), T5 (1), T36 (1), T44 (1/4), T47 (1/4), T64 (1), T73 (1/2)
T33	S17	J13 (1/3), T34 (1/5), T76 (1/2)
T34	S17	J13 (1/3), T33 (1), T76 (1/2)
	S8	L3 (1), T16 (1), T19 (1), T31 (1/3), T37 (1/2), T41 (1), T42 (1/2), T46 (1), T47 (1/4), T48 (1/6), T54 (1), T55 (1), T65 (1), T71 (1/3), T72 (1), T74 (1/4), T75 (1/2)
	S18	J11 (1/8), T35 (1)
	S32	J13 (1/3), T7 (1), T31 (1/3), T48 (1/6), T62 (1), T76 (1/2)
	S36	T48 (1/6), T66 (1), T67 (1), T68 (1)
T35	S18	J11 (1/8), T34 (1/5)
T36	S33	L8 (1), R4 (1), T5 (1), T32 (1), T44 (1/4), T47 (1/4), T64 (1), T73 (1/2)
T37	S15	R6 (1/2), T8 (1/2), T9 (1), T44 (1/4), T48 (1/6), T52 (1), T74 (1/4)
	S8	L3 (1), T16 (1), T19 (1), T31 (1/3), T34 (1/5), T41 (1), T42 (1/2), T46 (1), T47 (1/4), T48 (1/6), T54 (1), T55 (1), T65 (1), T71 (1/3), T72 (1), T74 (1/4), T75 (1/2)
T38	S19	–
T39	S20	J11 (1/8), J12 (1/7), T4 (1/10)
T40	S21	–
T41	S8	L3 (1), T16 (1), T19 (1), T31 (1/3), T34 (1/5), T37 (1/2), T42 (1/2), T46 (1), T47 (1/4), T48 (1/6), T54 (1), T55 (1), T65 (1), T71 (1/3), T72 (1), T74 (1/4), T75 (1/2)
T42	S12	T22 (1)
	S8	L3 (1), T16 (1), T19 (1), T31 (1/3), T34 (1/5), T37 (1/2), T41 (1), T46 (1), T47 (1/4), T48 (1/6), T54 (1), T55 (1), T65 (1), T71 (1/3), T72 (1), T74 (1/4), T75 (1/2)
T43	S22	T4 (1/10)
T44	S15	R6 (1/2), T8 (1/2), T9 (1), T37 (1/2), T48 (1/6), T52 (1), T74 (1/4)
	S24	T53 (1), T56 (1)
	S33	L8 (1), R4 (1), T5 (1), T32 (1), T36 (1), T47 (1/4), T64 (1), T73 (1/2)
	S37	J12 (1/7), T4 (1/10), T69 (1)
T45	S23	J12 (1/7), L6 (1), T4 (1/10)
T46	S8	L3 (1), T16 (1), T19 (1), T31 (1/3), T34 (1/5), T37 (1/2), T41 (1), T42 (1/2), T47 (1/4), T48 (1/6), T54 (1), T55 (1), T65 (1), T71 (1/3), T72 (1), T74 (1/4), T75 (1/2)
T47	S33	L8 (1), R4 (1), T5 (1), T32 (1), T36 (1), T44 (1/4), T64 (1), T73 (1/2)
	S4	L9 (1), T8 (1/2), T11 (1), T12 (1), T71 (1/3)
	S5	J12 (1/7), L2 (1), O1 (1), R5 (1), T4 (1/10), T13 (1), T50 (1), T73 (1/2), T75 (1/2)
	S8	L3 (1), T16 (1), T19 (1), T31 (1/3), T34 (1/5), T37 (1/2), T41 (1), T42 (1/2), T46 (1), T48 (1/6), T54 (1), T55 (1), T65 (1), T71 (1/3), T72 (1), T74 (1/4), T75 (1/2)
T48	C3	T49 (1)
	S7	T28 (1), T29 (1), T51 (1), T74 (1/4)
	S8	L3 (1), T16 (1), T19 (1), T31 (1/3), T34 (1/5), T37 (1/2), T41 (1), T42 (1/2), T46 (1), T47 (1/4), T54 (1), T55 (1), T65 (1), T71 (1/3), T72 (1), T74 (1/4), T75 (1/2)
	S15	R6 (1/2), T8 (1/2), T9 (1), T37 (1/2), T44 (1/4), T52 (1), T74 (1/4)
	S32	J13 (1/3), T7 (1), T31 (1/3), T34 (1/5), T62 (1), T76 (1/2)
	S36	T34 (1/5), T66 (1), T67 (1), T68 (1)
T49	C3	T48 (1/6)
T50	S5	J12 (1/7), L2 (1), O1 (1), R5 (1), T4 (1/10), T13 (1), T47 (1/4), T73 (1/2), T75 (1/2)
T51	S7	T28 (1), T29 (1), T48 (1/6), T74 (1/4)
T52	S15	R6 (1/2), T8 (1/2), T9 (1), T37 (1/2), T44 (1/4), T48 (1/6), T74 (1/4)
T53	S24	T44 (1/4), T56 (1)
T54	S8	L3 (1), T16 (1), T19 (1), T31 (1/3), T34 (1/5), T37 (1/2), T41 (1), T42 (1/2), T46 (1), T47 (1/4), T48 (1/6), T55 (1), T65 (1), T71 (1/3), T72 (1), T74 (1/4), T75 (1/2)
T55	S8	L3 (1), T16 (1), T19 (1), T31 (1/3), T34 (1/5), T37 (1/2), T41 (1), T42 (1/2), T46 (1), T47 (1/4), T48 (1/6), T54 (1), T65 (1), T71 (1/3), T72 (1), T74 (1/4), T75 (1/2)
T56	S24	T44 (1/4), T53 (1)
T57	S28	T4 (1/10), T26 (1), T59 (1)
T58	S27	–
T59	S28	T4 (1/10), T26 (1), T57 (1)
T60	S30	–
T61	S31	T20 (1/2), T63 (1/4)
T62	S32	J13 (1/3), T7 (1), T31 (1/3), T34 (1/5), T48 (1/6), T76 (1/2)
T63	S35	J5 (1), J11 (1/8), T71 (1/3)
	S6	J11 (1/8), T1 (1/2), T4 (1/10), T14 (1), T25 (1)
	S13	J11 (1/8), J12 (1/7), J13 (1/3), L4 (1), T4 (1/10), T20 (1/2), T24 (1)
	S31	T20 (1/2), T61 (1)
T64	S33	L8 (1), R4 (1), T5 (1), T32 (1), T36 (1), T44 (1/4), T47 (1/4), T73 (1/2)
T65	S8	L3 (1), T16 (1), T19 (1), T31 (1/3), T34 (1/5), T37 (1/2), T41 (1), T42 (1/2), T46 (1), T47 (1/4), T48 (1/6), T54 (1), T55 (1), T71 (1/3), T72 (1), T74 (1/4), T75 (1/2)

Table A.3 (*Continued*)

Journ.	Soc.	Other journals of the Society/Council
T66	S36	T34 (1/5), T48 (1/6), T67 (1), T68 (1)
T67	S36	T34 (1/5), T48 (1/6), T66 (1), T68 (1)
T68	S36	T34 (1/5), T48 (1/6), T66 (1), T67 (1)
T69	S37	J12 (1/7), T4 (1/10), T44 (1/4)
T70	S38	–
T71	S4	L9 (1), T8 (1/2), T11 (1), T12 (1), T47 (1/4)
	S8	L3 (1), T16 (1), T19 (1), T31 (1/3), T34 (1/5), T37 (1/2), T41 (1), T42 (1/2), T46 (1), T47 (1/4), T48 (1/6), T54 (1), T55 (1), T65 (1), T72 (1), T74 (1/4), T75 (1/2)
	S35	J5 (1), J11 (1/8), T63 (1/4)
T72	S8	L3 (1), T16 (1), T19 (1), T31 (1/3), T34 (1/5), T37 (1/2), T41 (1), T42 (1/2), T46 (1), T47 (1/4), T48 (1/6), T54 (1), T55 (1), T65 (1), T71 (1/3), T74 (1/4), T75 (1/2)
T73	S5	J12 (1/7), L2 (1), O1 (1), R5 (1), T4 (1/10), T13 (1), T47 (1/4), T50 (1), T75 (1/2)
	S33	L8 (1), R4 (1), T5 (1), T32 (1), T36 (1), T44 (1/4), T47 (1/4), T64 (1)
T74	S7	T28 (1), T29 (1), T48 (1/6), T51 (1)
	S8	L3 (1), T16 (1), T19 (1), T31 (1/3), T34 (1/5), T37 (1/2), T41 (1), T42 (1/2), T46 (1), T47 (1/4), T48 (1/6), T54 (1), T55 (1), T65 (1), T71 (1/3), T72 (1), T75 (1/2)
	S10	T6 (1), T18 (1)
	S15	R6 (1/2), T8 (1/2), T9 (1), T37 (1/2), T44 (1/4), T48 (1/6), T52 (1)
T75	S8	L3 (1), T16 (1), T19 (1), T31 (1/3), T34 (1/5), T37 (1/2), T41 (1), T42 (1/2), T46 (1), T47 (1/4), T48 (1/6), T54 (1), T55 (1), T65 (1), T71 (1/3), T72 (1), T74 (1/4)
	S5	J12 (1/7), L2 (1), O1 (1), R5 (1), T4 (1/10), T13 (1), T47 (1/4), T50 (1), T73 (1/2)
T76	S17	J13 (1/3), T33 (1), T34 (1/5)
	S32	J13 (1/3), T7 (1), T31 (1/3), T34 (1/5), T48 (1/6), T62 (1)

Table A.4
Results of the study of the journal citing propensity at level of Society/Council. For each journal, the (weighted) distribution of the reference numbers of the articles published in the period from 2006 to 2011 was constructed. The corresponding weighted median (${}^w\tilde{r}_J$), weighted mean (${}^w\bar{r}_J$), weighted inter-quartile range (${}^wIQR$) and weighted standard deviation (${}^ws$) are reported. The last column ("rp_J") contains an indicator depicting the relative position of the weighted median with respect to the weighted quartiles (see Eq. (7)).

Journ.	${}^w\tilde{r}_J$	${}^w\bar{r}_J$	${}^wIQR$	${}^ws$	rp_J
J1	7.0	7.8	6.0	5.3	50.0%
J2	10.0	12.2	8.0	6.7	37.5%
J3	24.0	26.7	17.0	12.8	41.2%
J4	21.0	23.0	12.0	10.5	41.7%
J5	19.0	20.4	13.0	9.0	46.2%
J6	12.0	11.6	6.0	4.0	57.1%
J7	9.0	10.2	9.0	5.0	44.4%
J8	9.0	10.0	8.0	5.7	50.0%
J9	19.0	21.8	14.0	12.4	50.0%
J10	23.0	24.9	15.0	9.2	40.0%
J11	17.0	19.3	12.0	9.6	41.7%
J12	19.0	20.9	13.0	8.8	46.2%
J13	22.0	24.5	14.0	10.5	50.0%
L1	15.0	17.1	12.0	8.2	41.7%
L2	15.0	17.0	15.0	9.6	46.7%
L3	30.0	32.2	16.0	11.5	43.8%
L4	16.0	18.7	12.0	10.2	41.7%
L5	21.0	24.5	17.0	11.6	41.2%
L6	14.0	16.7	13.0	9.1	38.5%
L7	12.0	14.5	8.0	10.7	37.5%
L8	24.0	25.8	17.0	10.9	47.1%
L9	20.0	22.6	15.0	10.9	40.0%
O1	20.0	21.7	13.0	9.7	46.2%
O2	7.0	7.9	7.0	3.7	42.9%
R1	58.0	57.7	37.0	22.6	52.6%
R2	27.0	29.8	17.0	12.1	41.2%
R3	22.0	26.6	15.0	13.2	43.8%
R4	27.0	28.3	16.0	10.6	50.0%
R5	20.0	21.5	13.0	8.7	46.2%
R6	22.0	24.5	18.0	14.1	44.4%
R7	42.0	52.1	49.0	32.4	38.8%
T1	18.0	20.2	12.0	9.2	41.7%
T2	21.0	22.7	13.0	11.1	46.2%
T3	19.0	20.3	12.0	8.4	50.0%
T4	16.0	18.4	14.0	11.4	42.9%
T5	26.0	28.1	16.0	10.4	43.8%
T6	22.0	24.3	14.0	11.4	42.9%
T7	27.0	28.8	15.0	11.7	46.7%
T8	26.0	27.9	16.0	12.1	43.8%

Table A.4 (*Continued*)

Journ.	${}^{w}\tilde{r}_J$	${}^{w}\bar{r}_J$	${}^{w}IQR$	${}^{w}s$	rp_J
T9	28.0	29.7	17.0	12.8	47.1%
T10	19.0	21.3	12.0	11.7	50.0%
T11	24.0	26.1	14.0	10.7	42.9%
T12	24.0	26.1	14.0	10.7	42.9%
T13	20.0	20.9	14.0	8.6	50.0%
T14	15.0	16.8	12.0	7.5	41.7%
T15	25.0	27.2	14.0	11.9	42.9%
T16	31.0	32.4	16.0	11.4	50.0%
T17	14.0	14.8	10.0	9.8	50.0%
T18	22.0	24.3	14.0	11.4	42.9%
T19	31.0	32.4	16.0	11.4	50.0%
T20	20.0	22.2	14.0	10.2	42.9%
T21	15.0	17.8	13.0	8.2	46.2%
T22	19.0	20.5	12.0	9.5	50.0%
T23	17.0	19.3	13.0	11.1	42.9%
T24	20.0	21.9	14.0	10.1	50.0%
T25	15.0	16.8	12.0	7.5	41.7%
T26	17.0	18.1	12.0	6.9	50.0%
T27	62.0	62.7	34.0	20.3	52.9%
T28	34.0	35.9	19.0	13.7	47.4%
T29	34.0	35.9	19.0	13.8	47.4%
T30	27.0	29.5	18.0	11.8	41.2%
T31	27.0	28.9	17.0	11.8	47.1%
T32	26.0	28.1	16.0	10.4	43.8%
T33	24.0	25.5	12.0	10.8	46.2%
T34	28.0	29.6	16.0	12.0	50.0%
T35	15.0	16.9	10.0	11.4	40.0%
T36	26.0	28.1	16.0	10.4	43.8%
T37	30.0	31.6	17.0	11.9	47.1%
T38	23.0	25.3	16.0	11.0	43.8%
T39	16.0	17.3	11.0	9.1	45.5%
T40	28.0	30.1	15.0	15.8	53.3%
T41	31.0	32.4	16.0	11.4	50.0%
T42	30.0	31.8	17.0	11.5	47.1%
T43	11.0	12.6	9.0	6.9	44.4%
T44	23.0	24.5	18.0	10.9	50.0%
T45	18.0	20.0	12.0	8.6	41.7%
T46	31.0	32.4	16.0	11.4	50.0%
T47	26.0	27.6	16.0	10.3	50.0%
T48	30.0	31.8	17.0	12.6	47.1%
T49	22.0	24.5	15.0	11.1	40.0%
T50	20.0	20.9	14.0	8.6	50.0%
T51	34.0	35.9	19.0	13.8	47.4%
T52	28.0	29.7	17.0	12.8	47.1%
T53	15.0	17.6	14.0	13.8	42.9%
T54	31.0	32.4	16.0	11.4	50.0%
T55	31.0	32.4	16.0	11.4	50.0%
T56	15.0	17.6	14.0	13.8	42.9%
T57	17.0	18.1	12.0	6.9	50.0%
T58	20.0	21.2	11.0	8.8	45.5%
T59	17.0	18.1	12.0	6.9	50.0%
T60	43.0	44.3	32.0	16.2	48.4%
T61	22.0	23.7	15.0	11.3	46.7%
T62	27.0	28.8	15.0	11.7	46.7%
T63	19.0	20.8	13.0	9.3	46.2%
T64	26.0	28.1	16.0	10.4	43.8%
T65	31.0	32.4	16.0	11.4	50.0%
T66	32.0	34.7	19.0	14.7	47.4%
T67	32.0	34.7	19.0	14.7	47.4%
T68	32.0	34.7	19.0	14.7	47.4%
T69	20.0	22.7	16.0	11.3	43.8%
T70	22.0	24.0	12.0	8.6	41.7%
T71	27.0	28.8	17.0	11.8	47.1%
T72	31.0	32.4	16.0	11.4	50.0%
T73	25.0	25.3	17.0	10.1	46.7%
T74	29.0	30.8	17.0	12.1	47.1%
T75	26.0	27.7	17.0	10.3	47.1%
T76	25.0	26.8	13.0	11.7	46.2%
X1	16.0	18.3	8.0	7.8	37.5%
X2	20.0	26.4	26.0	17.9	34.6%
X3	14.0	15.5	11.0	9.2	45.5%

Table A.5
CPP values concerning the IEEE journals in the 2006-to-2010 period, calculated taking into account the citations accumulated up to the moment of the original analysis (August 2010) (Canavero et al., 2014). The first ten columns of (a) report the annual *CPP* values and the corresponding annual ranks. The last two columns of (a) reports the overall rank of the journals ("ovrll"), constructed according to their average annual ranks ("avg rnk") and (b) reports the same indicators after applying the normalization. Journals of type L, R, O and X were excluded from the normalization, because of the very different citation culture.

Journ.	(a) Before normalization												(b) After normalization											
	CPP values (and ranks) for individual years										06–10		*CPP* values (and ranks) for individual years										06–10	
	2006		2007		2008		2009		2010		Avg rnk	Ovrll	2006		2007		2008		2009		2010		Avg rnk	Ovrll
J1	9.5	38	6.0	54	3.1	56	1.8	30	0.2	43	44.2	46	25.8	3	16.3	3	8.4	4	4.9	2	0.5	14	5.2	2
J2	11.4	28	8.1	33	4.4	39	1.5	38	0.3	29	33.4	35	21.7	5	15.4	6	8.4	5	2.9	7	0.6	12	7.0	5
J3	4.3	81	3.8	71	2.5	70	0.5	92	0.3	29	68.6	79	3.4	75	3.0	68	2.0	67	0.4	78	0.2	33	64.2	72
J4	5.2	71	3.1	80	3.0	60	1.0	63	0.2	43	63.4	68	4.7	58	2.8	73	2.7	52	0.9	52	0.2	47	56.4	60
J5	11.1	30	7.9	37	5.4	24	1.8	30	0.6	12	26.6	26	11.1	19	7.9	22	5.4	14	1.8	18	0.6	10	16.6	13
J6	14.5	18	9.4	21	8.2	11	1.3	48	0.4	22	24.0	19	23.0	4	14.9	7	13.0	2	2.1	14	0.6	9	7.2	7
J7	8.5	46	7.4	41	2.9	62	1.5	38	0.1	64	50.2	54	17.9	9	15.6	5	6.1	10	3.2	5	0.2	39	13.6	12
J8	14.4	19	8.5	28	6.0	19	1.9	25	0.2	43	26.8	27	30.4	1	17.9	2	12.7	3	4.0	4	0.4	15	5.0	1
J9	4.3	81	3.8	71	2.3	74	0.5	92	0.1	64	76.4	85	4.3	65	3.8	57	2.3	60	0.5	74	0.1	64	64.0	70
J10	–	–	6.9	47	1.5	90	0.4	99	–	–	78.7	88	–	–	5.7	37	1.3	80	0.3	82	–	–	66.3	74
J11	5.0	72	2.7	84	2.0	79	1.2	54	0.5	16	61.0	65	5.6	52	3.0	67	2.2	61	1.3	28	0.6	13	44.2	47
J12	4.5	76	2.0	89	2.9	62	1.3	48	0.3	29	60.8	64	4.5	63	2.0	75	2.9	48	1.3	30	0.3	21	47.4	49
J13	5.3	69	1.0	97	2.1	77	0.8	74	0.3	29	69.2	80	4.6	62	0.9	80	1.8	72	0.7	67	0.3	29	62.0	69
L1	8.1	52	4.8	65	2.5	70	0.6	87	0.1	64	67.6	78	–	–	–	–	–	–	–	–	–	–	–	–
L2	6.4	60	4.4	68	2.6	65	0.7	78	0.1	64	67.0	76	–	–	–	–	–	–	–	–	–	–	–	–
L3	14.7	17	6.0	54	6.7	17	1.2	59	0.1	63	42.0	44	–	–	–	–	–	–	–	–	–	–	–	–
L4	5.3	69	3.2	77	3.1	56	1.0	63	0.1	64	65.8	74	–	–	–	–	–	–	–	–	–	–	–	–
L5	8.4	49	6.2	53	2.6	65	0.9	68	0.2	43	55.6	59	–	–	–	–	–	–	–	–	–	–	–	–
L6	8.6	45	6.3	51	3.2	54	0.9	68	0.1	64	56.4	61	–	–	–	–	–	–	–	–	–	–	–	–
L7	5.5	68	4.7	66	2.6	65	1.1	61	0.1	64	64.8	71	–	–	–	–	–	–	–	–	–	–	–	–
L8	8.0	53	5.7	57	2.6	65	1.0	63	0.2	43	56.2	60	–	–	–	–	–	–	–	–	–	–	–	–
L9	2.0	92	–	–	0.3	101	–	–	0.1	89	94.0	103	–	–	–	–	–	–	–	–	–	–	–	–
O1	38.5	1	22.9	4	13.9	3	5.2	3	0.6	15	5.2	2	–	–	–	–	–	–	–	–	–	–	–	–
O2	9.4	39	8.4	32	4.8	32	2.0	21	0.1	64	37.6	39	–	–	–	–	–	–	–	–	–	–	–	–
R1	9.1	40	3.5	76	12.7	4	1.9	28	3.3	1	29.8	30	–	–	–	–	–	–	–	–	–	–	–	–
R2		–		–		–		–		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
R3	8.2	51	5.1	61	2.7	64	1.3	48	0.3	29	50.6	55	–	–	–	–	–	–	–	–	–	–	–	–
R4	–	–	11.2	18	6.8	16	1.6	34	0.8	9	19.3	13	–	–	–	–	–	–	–	–	–	–	–	–
R5	23.9	8	16.2	7	11.1	6	2.9	10	0.3	29	12.0	8	–	–	–	–	–	–	–	–	–	–	–	–
R6	–	–	–	–	1.5	92	0.7	84	–	–	88.0	98	–	–	–	–	–	–	–	–	–	–	–	–
R7	5.7	65	8.1	33	4.0	46	2.8	11	1.4	6	32.2	33	–	–	–	–	–	–	–	–	–	–	–	–
T1	4.4	79	2.8	83	1.8	85	0.7	78	0.1	64	77.8	87	4.6	60	3.0	69	1.9	68	0.7	63	0.1	63	64.6	73
T2	6.1	61	5.0	62	1.9	84	0.8	74	0.3	29	62.0	66	5.5	54	4.5	51	1.7	74	0.7	64	0.3	27	54.0	56
T3	7.2	58	5.7	57	3.2	54	1.1	61	0.2	43	54.6	58	7.2	40	5.7	36	3.2	36	1.1	45	0.2	43	40.0	38
T4	2.8	89	1.3	96	2.0	79	0.7	78	0.0	92	86.8	96	3.3	77	1.5	78	2.4	57	0.8	57	0.0	75	68.8	78
T5	10.9	32	8.7	26	8.1	12	2.1	20	0.5	16	21.2	16	8.0	30	6.4	31	5.9	13	1.5	21	0.4	18	22.6	17
T6	10.4	35	9.3	23	4.1	44	2.6	13	0.8	10	25.0	23	9.0	23	8.0	21	3.5	28	2.2	12	0.7	7	18.2	14
T7	7.2	58	7.0	42	3.9	49	1.3	48	0.3	29	45.2	49	5.1	56	4.9	46	2.7	50	0.9	51	0.2	41	48.8	53
T8	–	–	8.5	31	3.5	51	0.6	86	0.0	91	64.8	70	–	–	6.2	34	2.6	54	0.5	75	0.0	74	59.3	64
T9	8.9	41	7.6	38	4.5	36	1.2	54	0.2	43	42.4	45	6.0	49	5.2	41	3.1	44	0.8	58	0.1	51	48.6	52
T10	7.7	54	9.4	22	3.3	53	1.1	60	–	–	47.3	50	7.7	35	9.4	15	3.3	33	1.1	42	–	–	31.3	29
T11	–	–	8.0	35	–	–	3.7	9	0.1	90	44.7	47	–	–	6.3	32	–	–	2.9	6	0.0	72	36.7	35
T12	1.0	96	–	–	0.5	99	–	–	0.1	62	85.7	95	0.8	79	–	–	0.4	83	–	–	0.1	62	–	–
T13	8.9	41	6.9	44	3.3	52	1.8	30	0.3	29	39.2	42	8.5	25	6.6	29	3.1	38	1.7	20	0.3	24	27.2	22

Table A.5 (*Continued*)

Journ.	(a) Before normalization												(b) After normalization											
	CPP values (and ranks) for individual years										06–10		*CPP* values (and ranks) for individual years										06–10	
	2006		2007		2008		2009		2010		Avg rnk	Ovrll	2006		2007		2008		2009		2010		Avg rnk	Ovrll
T14	4.9	73	2.6	86	1.7	86	0.7	78	0.1	64	77.4	86	6.2	48	3.3	63	2.2	63	0.9	54	0.1	54	56.4	60
T15	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–.0	–
T16	11.6	26	6.8	48	5.3	26	2.0	21	0.3	29	30.0	31	7.1	41	4.2	53	3.2	35	1.2	33	0.2	46	41.6	42
T17	4.6	75	2.6	86	1.4	95	0.2	100	0.0	92	89.6	100	6.2	47	3.5	60	1.9	69	0.3	83	0.0	75	66.8	75
T18	8.5	46	6.5	50	4.4	39	1.5	38	1.0	8	36.2	36	7.3	39	5.6	38	3.8	25	1.3	31	0.9	5	27.6	24
T19	18.4	11	13.8	9	9.7	8	1.5	38	0.2	43	21.8	17	11.3	18	8.5	18	5.9	12	0.9	50	0.1	58	31.2	28
T20	4.5	78	3.2	79	1.5	93	0.7	85	–	–	83.8	93	4.2	66	3.0	66	1.4	78	0.6	71	–	–	70.3	79
T21	3.0	88	2.7	84	2.0	79	0.6	87	0.1	64	80.4	90	3.8	71	3.4	62	2.5	55	0.8	61	0.1	54	60.6	67
T22	7.6	55	5	62	3.1	56	0.7	78	0.1	64	63.0	67	7.6	36	5.0	45	3.1	42	0.7	66	0.1	64	50.6	54
T23	3.5	86	2.6	86	1.6	87	0.6	87	0.1	64	82.0	92	3.9	69	2.9	72	1.8	73	0.7	70	0.1	59	68.6	77
T24	5.8	64	4.0	70	2.6	65	0.8	74	0.1	64	67.4	77	5.5	55	3.8	57	2.5	56	0.8	60	0.1	66	58.8	63
T25	3.7	84	1.4	94	2.5	70	0.9	68	0.0	92	81.6	91	4.7	59	1.8	76	3.2	37	1.1	40	0.0	75	57.4	62
T26	10.1	36	6.6	49	4.5	36	0.4	96	0.2	43	52.0	57	11.3	17	7.4	26	5.0	18	0.4	76	0.2	35	34.4	34
T27	11.1	30	5.5	59	3.6	50	1.2	54	0.1	64	51.4	56	3.4	76	1.7	77	1.1	81	0.4	80	0.0	73	77.4	82
T28	24.6	7	17.5	6	14.9	2	4.0	7	1.0	7	5.8	5	13.8	13	9.8	12	8.3	6	2.2	13	0.6	11	11.0	10
T29	14.0	20	12.5	13	4.9	31	2.3	17	0.5	16	19.4	14	7.8	34	7.0	27	2.7	51	1.3	32	0.3	25	33.8	33
T30	11.3	29	6.9	44	4.0	46	1.6	35	0.3	29	36.6	37	8.0	31	4.9	47	2.8	49	1.1	43	0.2	41	42.2	43
T31	–	–	–	–	5.9	20	1.5	37	0.4	28	28.3	28	–	–	–	–	4.2	22	1.1	46	0.3	28	32.0	30
T32	18.5	10	12.9	11	7.1	14	2.5	14	0.3	29	15.6	11	13.5	14	9.4	14	5.2	16	1.8	17	0.2	37	19.6	15
T33	13.5	21	11.4	16	5.3	26	1.5	38	0.1	64	33.0	34	10.7	20	9.0	16	4.2	21	1.2	37	0.1	69	32.6	32
T34	12.4	23	8.5	28	4.6	34	1.0	63	0.2	43	38.2	41	8.4	26	5.8	35	3.1	40	0.7	69	0.1	51	44.2	47
T35	4.5	76	3.7	73	1.6	87	1.2	54	0.2	43	66.6	75	5.7	51	4.7	48	2.0	64	1.5	22	0.3	30	43.0	44
T36	25.1	6	13.5	10	7.0	15	1.9	25	0.1	64	24.0	19	18.3	8	9.9	11	5.1	17	1.4	27	0.1	71	26.8	20
T37	10.9	33	6.0	56	5.5	23	1.4	46	0.4	27	37.0	38	6.9	43	3.8	59	3.5	30	0.9	53	0.2	31	43.2	45
T38	26.2	4	12.6	12	8.7	9	5.7	2	0.8	10	7.4	7	21.6	6	10.4	10	7.2	8	4.7	3	0.7	8	7.0	5
T39	3.4	87	2.9	82	2.0	79	0.9	68	0.6	12	65.6	73	4.0	67	3.4	61	2.4	57	1.1	47	0.7	6	47.6	50
T40	12.3	24	7.5	39	4.5	36	1.3	48	0.2	43	38.0	40	8.3	27	5.1	42	3.1	44	0.9	55	0.1	51	43.8	46
T41	14.8	16	14.4	8	5.1	29	2.3	17	0.4	22	18.4	12	9.1	22	8.8	17	3.1	39	1.4	25	0.2	32	27.0	21
T42	–	–	–	–	3.0	61	1.8	29	–	–	45.0	48	–	–	–	–	1.9	71	1.2	38	–	–	54.5	57
T43	2.3	91	1.7	91	1.5	94	0.4	96	0.1	64	87.2	97	4.0	68	2.9	71	2.6	53	0.7	67	0.2	48	61.4	68
T44	17.3	12	11.5	15	7.3	13	2.4	15	0.5	16	14.2	9	14.3	11	9.5	13	6.0	11	2.0	15	0.4	17	13.4	11
T45	7.6	55	4.1	69	3.1	56	0.9	68	0.2	43	58.2	62	8.0	29	4.3	52	3.3	34	1.0	49	0.2	39	40.6	41
T46	25.8	5	20.1	5	8.7	9	3.7	8	2.7	2	5.8	5	15.8	10	12.3	9	5.3	15	2.3	11	1.7	1	9.2	9
T47	15.9	13	11.3	17	4.2	42	2.0	21	0.3	29	24.4	21	11.6	15	8.3	19	3.1	43	1.5	23	0.2	37	27.4	23
T48	6.0	63	4.9	64	2.3	76	0.5	92	–	–	73.8	83	3.8	70	3.1	64	1.4	77	0.3	81	–	–	73.0	80
T49	7.4	57	4.7	66	2.5	70	1.0	63	0.2	43	59.8	63	6.4	45	4.1	54	2.2	62	0.9	56	0.2	48	53.0	55
T50	3.6	85	8.6	27	1.5	91	0.8	77	0.2	43	64.6	69	3.4	74	8.2	20	1.5	76	0.7	65	0.2	44	55.8	58
T51	15.4	14	9.0	24	5.3	26	2.4	15	0.2	43	24.4	21	8.6	24	5.0	44	3.0	46	1.3	28	0.1	59	40.2	39
T52	11.6	26	7.5	39	4.6	34	1.5	38	0.4	22	31.8	32	7.9	33	5.1	42	3.1	40	1.0	48	0.3	26	37.8	37
T53	4.4	79	3.2	77	1.6	87	0.5	92	0.1	64	79.8	89	5.6	53	4.1	55	2.0	64	0.6	71	0.1	54	59.4	65
T54	12.3	24	12.5	13	4.8	32	2.3	17	0.5	16	20.4	15	7.5	37	7.7	24	2.9	47	1.4	25	0.3	19	30.4	26
T55	30.4	3	26.0	2	12.3	5	4.5	4	1.8	5	3.8	1	18.6	7	15.9	4	7.5	7	2.8	8	1.1	4	6.0	4
T56	2.8	89	1.9	90	1.3	97	0.6	87	0.1	64	85.4	94	3.5	73	2.4	74	1.6	75	0.8	61	0.1	54	67.4	76
T57	5.6	67	3.6	74	2.1	77	0.7	78	0.1	64	72.0	81	6.3	46	4.0	56	2.3	59	0.8	59	0.1	59	55.8	58
T58	8.3	50	8.0	35	4.1	44	1.2	54	0.1	64	49.4	53	7.9	32	7.6	25	3.9	24	1.1	40	0.1	66	37.4	36
T59	8.9	41	6.9	44	4.2	42	1.6	35	0.2	43	41.0	43	9.9	21	7.7	23	4.7	19	1.8	19	0.2	35	23.4	18
T60	1.8	94	1.6	93	1.2	98	0.9	73	–	–	89.5	99	0.8	78	0.7	81	0.6	82	0.4	79	–	–	80.0	83

Table A.5 (*Continued*)

Journ.	(a) Before normalization												(b) After normalization											
	CPP values (and ranks) for individual years										06–10		*CPP* values (and ranks) for individual years										06–10	
	2006		2007		2008		2009		2010		Avg rnk	Ovrll	2006		2007		2008		2009		2010		Avg rnk	Ovrll
T61	5.7	65	3.6	74	2.3	74	1.3	48	0.1	64	65.0	72	4.9	57	3.1	65	2.0	66	1.1	44	0.1	68	60.0	66
T62	8.5	46	9.8	19	5.6	22	1.7	33	0.6	12	26.4	25	6.0	50	6.9	28	3.9	23	1.2	36	0.4	16	30.6	27
T63	3.8	83	1.4	94	1.4	95	0.4	96	0.0	92	92.0	102	3.8	71	1.4	79	1.4	79	0.4	77	0.0	75	76.2	81
T64	9.7	37	6.3	51	5.8	21	2.7	12	0.4	22	28.6	29	7.1	42	4.6	49	4.2	20	2.0	16	0.3	22	29.8	25
T65	22.7	9	23.4	3	10.7	7	4.1	5	2.1	4	5.6	4	13.9	12	14.3	8	6.6	9	2.5	10	1.3	3	8.4	8
T66	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
T67	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
T68	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
T69	4.7	74	3.1	80	2.0	79	0.6	87	0.2	43	72.6	82	4.5	64	2.9	70	1.9	69	0.6	73	0.2	44	64.0	70
T70	8.7	44	5.3	60	4.0	46	1.4	47	0.2	43	48.0	51	7.5	38	4.6	50	3.5	31	1.2	35	0.2	48	40.4	40
T72	10.6	34	8.8	25	6.1	18	2.0	21	0.5	16	22.8	18	6.5	44	5.4	39	3.7	27	1.2	33	0.3	19	32.4	31
T73	15.2	15	8.5	28	5.0	30	1.9	25	0.3	29	25.4	24	11.6	16	6.5	30	3.8	26	1.4	24	0.2	34	26.0	19
T74	12.6	22	9.6	20	5.4	24	4.1	5	2.5	3	14.8	10	8.3	28	6.3	33	3.5	29	2.7	9	1.6	2	20.2	16
T75	36.7	2	27.7	1	26.0	1	7.5	1	0.4	22	5.4	3	26.8	2	20.2	1	19.0	1	5.5	1	0.3	22	5.4	3
T76	6.1	61	7.0	42	4.4	39	1.5	38	0.1	64	48.8	52	4.6	61	5.3	40	3.3	32	1.1	39	0.1	70	48.4	51
X1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
X2	1.6	95	0.9	98	0.5	100	0.2	100	0.1	64	91.4	101	–	–	–	–	–	–	–	–	–	–	–	–
X3	2.0	92	1.7	92	–	–	1.5	38	–	–	74.0	84	–	–	–	–	–	–	–	–	–	–	–	–

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