

Performance and Structures of the German Science System 2011

Germany in an international comparison,
China's profile, behaviour of German authors,
comparison of the Web of Science and Scopus

Ulrich Schmoch, Carolin Michels, Nicole Schulze, Peter Neuhäusler

Studien zum deutschen Innovationssystem
Nr. 9-2012

Fraunhofer Institute for Systems and Innovation Research

Karlsruhe, February 2012

This study was conducted on behalf of the Expertenkommission Forschung und Innovation (EFI). The results and interpretations are the sole responsibility of the institute conducting the study. The EFI exercised no influence on the writing of this report.

Studien zum deutschen Innovationssystem

Nr. 9-2012

ISSN 1613-4338

Publisher:

Expertenkommission Forschung und Innovation (EFI)

Geschäftsstelle

c/o Stifterverband für die Deutsche Wissenschaft

Pariser Platz 6

10117 Berlin

<http://www.e-fi.de/>

All rights, in particular the right to copy and distribute as well as to translate this study, are reserved. No part of the work may be reproduced in any form (by means of photocopy, microfilm or any other process), or using electronic systems be saved, processed, duplicated or distributed, without the written permission of the EFI or of the Institute.

Contact address and further information:

Ulrich Schmoch

Fraunhofer Institute for Systems and Innovation Research

Competence Center Policy and Regions

Breslauer Strasse 48

76139 Karlsruhe

Phone: +49-721-6809-197

Fax: +49-721-6809-176

Email: ulrich.schmoch@isi.fraunhofer.de

Contents

SUMMARY 1

1. INTRODUCTION TO THIS ISSUE 3

2. METHODOLOGICAL BASIS 4

3. PUBLICATIONS IN AN INTERNATIONAL COMPARISON 10

4. CHINA'S PROFILE..... 23

5. BEHAVIOUR OF GERMAN AUTHORS 27

6. COMPARISON OF THE WEB OF SCIENCE AND SCOPUS 33

7. REFERENCES 45

Figures

Figure 1:	<i>Completeness of publications of the year 2009 and of the citations to publications in the year 2007 in the citation window 2007 to 2009, with monthly updates in the period January 2010 until June 2011 in the databases SSCI and SCIE</i>	5
Figure 2:	<i>Share of publications in the Web of Science by country of journal editors, 2009.....</i>	8
Figure 3:	<i>Development of the share of four selected countries within all publications in the SCIE and the SSCI.....</i>	12
Figure 4:	<i>Observed average citation rates for four selected countries in the SCIE and the SSCI without self-citations</i>	14
Figure 5:	<i>Index of the journal-specific Scientific Regard for four selected countries in the SCIE and SSCI without self-citations.....</i>	16
Figure 6:	<i>Index of the International Alignment for four selected countries in the SCIE and SSCI without self-citations.....</i>	18
Figure 7:	<i>Result of an MDS analysis in SCIE and SSCI for selected countries and two regions according to their specialization of their publications in 27 fields, 2010</i>	19
Figure 8:	<i>Specialization of the publications of Germany and China in 27 scientific fields in SCIE and SSCI, 2010</i>	20
Figure 9:	<i>Specialization of the publications of South Korea and China in 27 scientific fields in SCIE and SSCI, 2010</i>	21
Figure 10:	<i>Specialization of the publications of Canada and the USA in 27 scientific fields in SCIE and SSCI; 2010.....</i>	22
Figure 11:	<i>RLA, SR and IA indices of China in 27 scientific fields (RLA index) in the WoS, 2008.....</i>	25
Figure 12:	<i>SR and IA indices of China and Germany in the SSCI and SCIE without self-citations</i>	26
Figure 13:	<i>Co-publications of Chinese authors with foreign authors in the SCIE and SSCI.....</i>	26
Figure 14:	<i>IA index of selected countries in the SSCI and SCIE without self-citations</i>	27
Figure 15:	<i>Average annual number of pages of journals in the SCIE where German authors published their articles.....</i>	28
Figure 16:	<i>Share of editor countries within publications of German authors in the SCIE</i>	29

<i>Figure 17: Average citation rates of German authors by editor country of the publishing journal in the SCIE, 2008</i>	<i>30</i>
<i>Figure 18: Share of articles by German authors published in journals with the USA as editor country.....</i>	<i>30</i>
<i>Figure 19: Share of articles by German authors published in one of the 10% most highly cited journals per field.....</i>	<i>31</i>
<i>Figure 20: Share of articles by German authors co-published with at least one American co-author</i>	<i>31</i>
<i>Figure 21: Number of journals in the Web of Science and in Scopus</i>	<i>33</i>
<i>Figure 22: Alteration of the journal set in Scopus and WoS</i>	<i>34</i>
<i>Figure 23: Number of journal publications and publications in proceedings in the Web of Science and in Scopus</i>	<i>35</i>
<i>Figure 24: Publications in the Web of Science and Scopus for selected fields, 2010</i>	<i>36</i>
<i>Figure 25: Publications in the Web of Science and Scopus for disciplinary areas, 2010</i>	<i>37</i>
<i>Figure 26: Articles of selected countries in the Web of Science and Scopus, 2010</i>	<i>38</i>
<i>Figure 27: Observed average citation rates for selected countries in Scopus without self-citations.....</i>	<i>42</i>
<i>Figure 28: Index of the journal-specific Scientific Regard for four selected countries without self-citations in Scopus without self-citations.....</i>	<i>42</i>
<i>Figure 29: Index of the International Alignment for selected countries and regions without self-citations in Scopus</i>	<i>44</i>