



SCHOLARLY COMMUNICATION IN WEB AGE

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Lesson 2

- Bibliometric indicators
- Interinstitutional Style Guide
- Research evaluation identifiers
- Journal & Country Rank
- Italian Research Quality Assessment
- Scholars evaluation

Bibliometric indicators

A decorative graphic consisting of a solid green horizontal bar that spans the width of the slide. Below this bar, on the right side, there are several thin, parallel white lines that create a stepped or layered effect, extending further to the right.

Bibliometric Indicators: Quality Measurements of Scientific Publication

Bibliometrics is a set of mathematical and statistical methods used to analyze and measure the quantity and quality of books, articles, and other forms of publications. There are three types of bibliometric indicators: quantity indicators, which measure the productivity of a particular researcher; quality indicators, which measure the quality (or "performance") of a researcher's output; and structural indicators, which measure connections between publications, authors, and areas of research. Bibliometric indicators are especially important for researchers and organizations, as these measurements are often used in funding decisions, appointments, and promotions of researchers. As more and more scientific discoveries occur and published research results are read and then quoted by other researchers, bibliometric indicators are becoming increasingly important. This lesson provides an overview of the currently used bibliometric indicators and summarizes the critical elements and characteristics one should be aware of when evaluating the quantity and quality of scientific output.

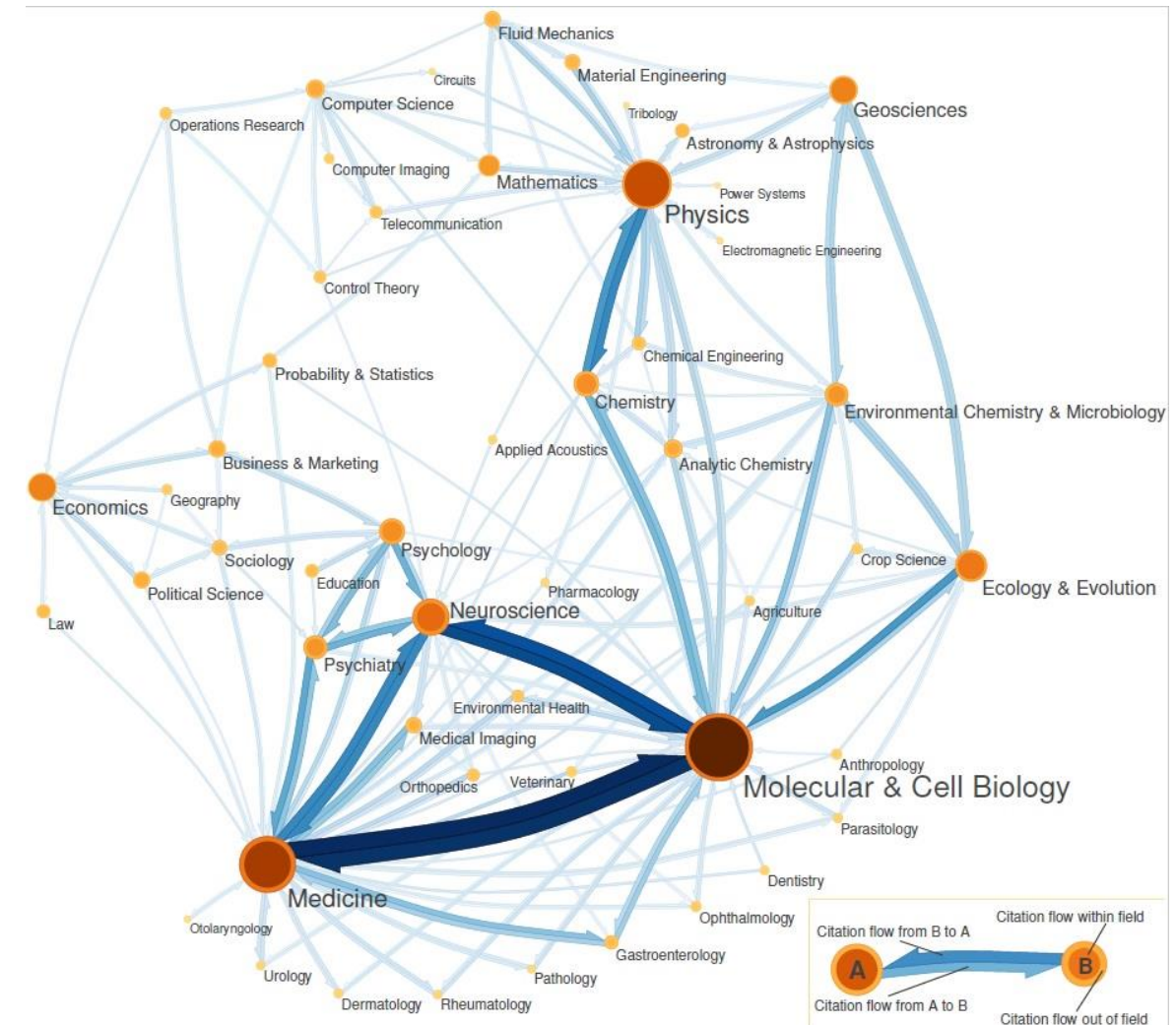
Bibliometrics can be used e.g. for:

- Evaluating performance of individual researchers
- Positioning and benchmarking of countries, cities, research groups
- Citation analysis, scientific impact and excellence assessment
- Network and collaboration mapping

Bibliometrics: indicators and networks

- **Bibliometrics** is a field of **information and library science** devoted to the quantitative study of the process of scholarly publication of research achievements.
- The complex system of scholarly publication reveals different types of networks, mainly **citation networks** (where links represent bibliographic references) and **collaboration networks** (in which links correspond to co-authorships in publications).
- These networks are analysed in order to capture meaningful properties of the underlying research system, and in particular to determine the influence of bibliometric units like **scholars** and **journals**.

Science and social science citation map (generated with Mapequation.org)



Bibliometric indicators for journals

The traditional bibliometric indicator for journals is the **Impact Factor**:

The Impact Factor of a journal for a specific year is the mean number of citations that occurred in that year to the articles published in the journal during the two previous years.

The Impact Factor has its own merits:

- comprehensibility;
- robustness;
- wide and fast availability.

Frequently mentioned flaws of the Impact Factor are:

- that the target window of two years is too short;
- it does not represent a typical value since it is a mean of the citation distribution which is highly skewed; it does not consider the status of the citing journals;
- it widely differs from one discipline to another.

Citation distributions are severely right skewed, meaning that most papers are poorly cited and a few hubs collect the majority of citations. It is hence misleading to predict the importance of an individual publication, or of an individual researcher, based on the Impact Factor of the publication's journal. Indeed, most papers published in a journal will ultimately be cited much less than the journal Impact Factor.

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The Impact Factor equally weights all citations: citations from highly reputed journals are treated as citations from obscure publication sources. The Eigenfactor is a PageRank-inspired metric that weights journal citations by the influence of the citing journals. The Eigenfactor thesis reads:

«A journal is influent if it is cited by other influent journals».



Birth and development of bibliometry

- Late 1800s: "statistical bibliography" (statistics and probability theory were used to guide library purchases and measure the progress of scientific disciplines)
- **1st Bibliometry law** - Lotka's law, 1926: in a scientific community a very small number of scientists are responsible for most of the work produced
- 1927: two American chemists (the Gross spouses), trying to identify the most important journals to be owned by a prestigious university library, were the first to connect the quality of scientific journals with the number of citations they received
- 1934: the term bibliometry appears for the first time in the work of the well-known Belgian bibliographer Paul Otlet
- **2nd Bibliometry Law** - Bradford Law, 1934: in a specific disciplinary sector a limited number of magazines contain 90% of the fundamental literature
- **3rd law of bibliometry** - Zipf's law, 1936: in every
- written text there are few very frequent words and many infrequent words (parallelism with the other two laws)

The three laws, formulated by scholars from different fields, indicate the need to measure the progress of knowledge

- Eugene Garfield and the Science Citation Index, 1961: creation of a citation index thanks to the indexing of the most relevant scientific journals (no more than 1,000, based on Bradford's law), of all the articles contained in them and of all the citations featured in the articles. Garfield wrote: "Citations are the formal, explicit linkages between papers that have particular points in common. A citation index is built around these linkages. It lists publications that have been cited and identifies the sources of the citations. Anyone conducting a literature search can find from one to dozens of additional papers on a subject just by knowing one that has been cited. And every paper that is found provides a list of new citations with which to continue the search. The simplicity of citation indexing is one of its main strengths".
- Start of the publication of the SCI, 1964, by the Institute for Scientific Information (ISI), today Clarivate Analytics (in 1973 the Social Sciences Citation Index, in 1978 the Arts & Humanities Citation Index, in 1990 the Conference Proceedings Citation Index and the Book Citation Index)
- Definition of bibliometry as a discipline in an article by Alan Pritchard published in 1969 in the Journal of Documentation ("the application of mathematics and statistical methods to books and other media")
- Establishment of bibliometric indicators since the late 1960s, first in the United States and then in Europe

Birth of scientometry

- The birth of scientometry, thanks to De Solla Price, 1963: the subject of the discipline is the analysis of scientific and technological progress through the measurement of the contribution of scientists and institutions to the advancement of science.
- Exponential growth of science; general probabilistic theory of cumulative advantages (a document cited several times is more likely to be cited again than a poorly cited document would have, a magazine often consulted is more likely to be consulted again than one that has been little used)

The establishment of bibliometrics

- Disciplinary autonomy of bibliometrics, from the 1990s: birth of the first university courses in the USA, publication of reference manuals, organization of conferences, birth of various journals and specialized research centers.
- Birth of the two large citation databases: Thomson Reuters' Web of Science (WoS) in 1997 and Elsevier's Scopus in 2004
- Google Scholar is born, 2004

BIBLIOMETRY, SCIENTOMETRY & ...

- BIBLIOMETRY: application of mathematics and statistical methods to communication products (texts, books, articles, bibliographies).
- SCIENTOMETRY: application of mathematics and statistical methods to the products of scientific and technological communication aimed at ascertaining the relative contribution of scientists, institutions, nations to the advancement of knowledge.
- INFORMATION TECHNOLOGY: study of the quantitative aspects of information in any form (not only information recorded in books, articles, etc.) and with any social group (not only scientists).
- WEBMETRICA (CYBERMETRICA, NETMETRICA): extension of biblio-scienti-informetric methods to information flows that materialize on the Internet (not only the Web, but also e-mail, ftp, p2p networks).

REFERENCE & CITATION

- The attention given to bibliographic citations at the expense of other quantifiable aspects presupposes that the difference between bibliographic reference (reference) and bibliographic citation (citation) is clearly understood.

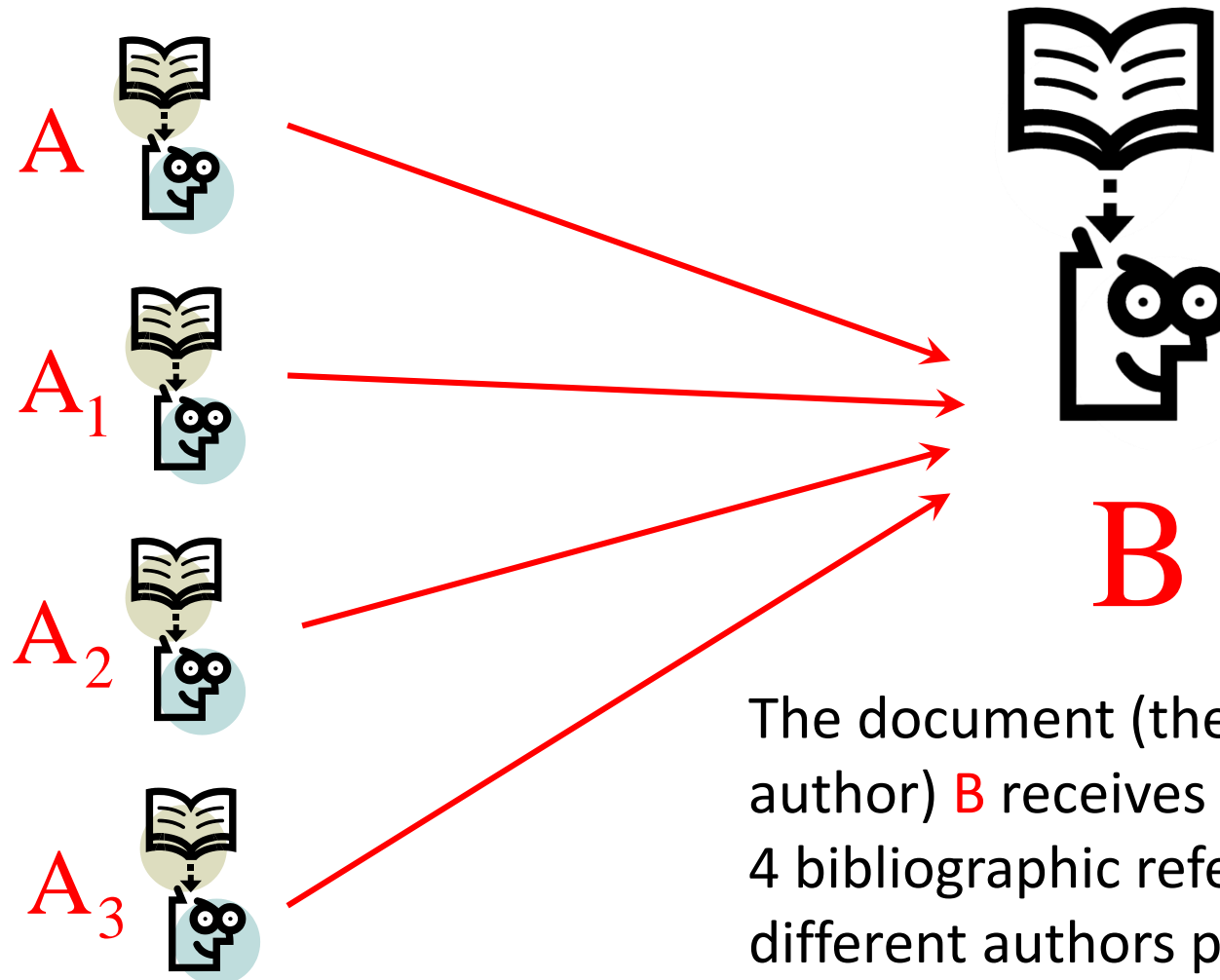
Example 1



From **A**'s point of view, entity **R** is a bibliographic reference

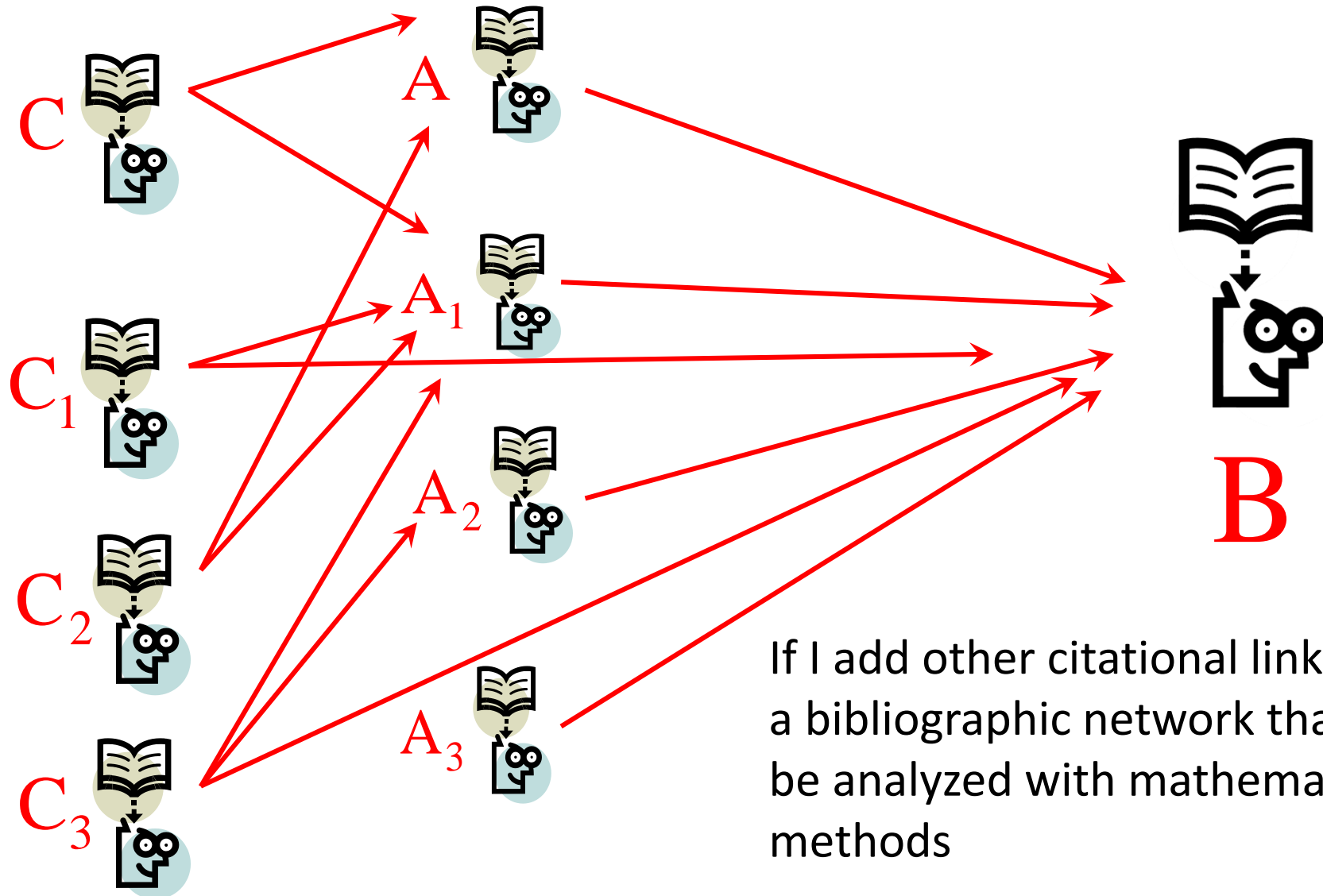
From **B**'s point of view, entity **R** is a bibliographic citation

Example 2



The document (therefore the author) **B** receives 4 citations, or 4 bibliographic references from different authors point to **B**

Example3



If I add other citational links I get a bibliographic network that can be analyzed with mathematical methods

The basis of bibliometry: the citation

- Different citational styles and purposes exist according to the disciplinary sectors. The gradual development of the habit of citing one's own or other scholars' writings inevitably led to the use of citation data and, consequently, to evaluate a work in relation to the number of citations obtained.
- With the increase in the amount of scientific production, the quote becomes "the current currency in the trade of official scientific communication. Small denomination coin (it costs little to quote), but with a not indifferent symbolic purchasing power "(N. De Bellis, The bibliographic citation in the age of its technical reproducibility)

Citations are not all the same and do not have (or should not have) an identical "weight".

- The amount of citations accumulated by a scientific work depends on various factors (disciplinary area, type of work, language of publication, even the position of the article in the magazine)
- San Matteo effect: To those who have, it will be given, and it will be in abundance: but to those who have not, even what they have will be taken away.

 tendency to the progressive accumulation of resources, funding, citations in a small number of subjects, projects, scientific works

San Matteo effect

"Success seems to generate success. A document that has been cited multiple times is more likely to be cited again than a poorly cited document would have. An author of numerous publications is more likely to publish than one that has been less prolific. A newspaper that has often been consulted for some purpose is more likely to be consulted again than one that has been little used "

Derek J. De Solla Price (1976), A general theory of bibliometric and other cumulative advantage processes, "Journal of the American Society for Information Science", 27, n. 5, p. 292-306

Interinstitutional Style Guide



- Since 2001 the Publications Office has acted as the official agency assigning the following identifiers to publications issued by European Union institutions, bodies and organizations: international standard book number (ISBN); international standard serial number (ISSN) for serial publications and other continuing resources; and digital object identifier (DOI). These international identifiers are used to classify publications all over the world in an unequivocal and exclusive way. An internal identifier (catalogue number) is also assigned for every product (book, leaflet, poster, etc.) in any format (paper, electronic, CD/DVD, etc.).
- In order for an identifier to be assigned to a work, the originating services must provide the Publications Office with two physical copies of the work, in addition to sending the electronic version (PDF).
- The Publications Office automatically assigns an identifier whenever it receives a publication request.

Publications Office of the European Union
'Style guide' Coordination
A.1, MER 199/199 A
2, rue Mercier
L-2985 Luxembourg
LUXEMBOURG
Tel. +352 2929-44034/42888/44826

see: <http://publications.europa.eu/code/en/en-240400.htm>

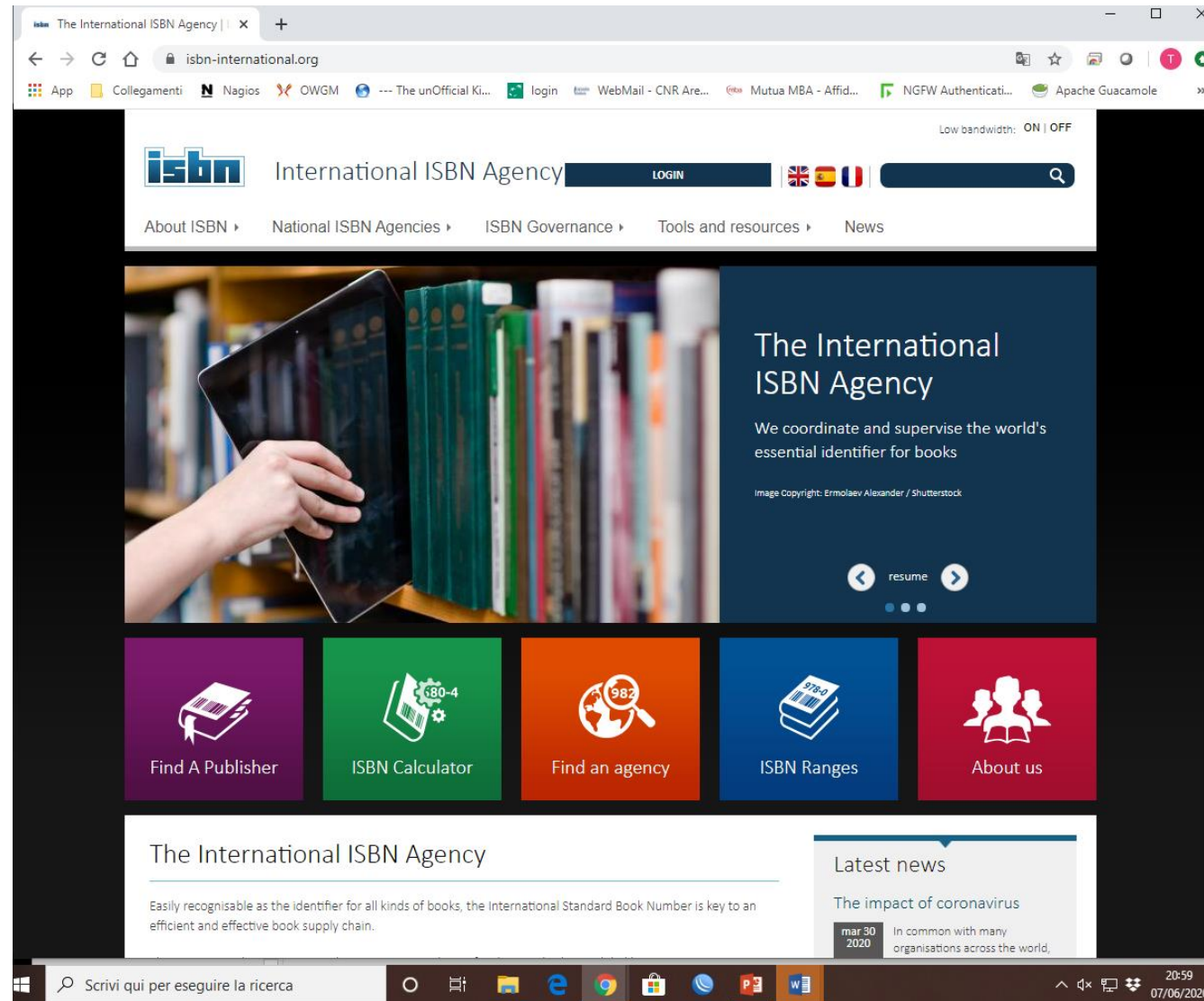
Identifiers assigned by the Publications Office

- ***International standard book number (ISBN)***
- ***International standard serial number (ISSN)***
- ***Digital object identifier (DOI)***

ISBN

- The ISBN is a 13-digit numerical sequence used internationally for the classification of books (the coding prior to 2007 is still used, consisting of a number of digits equal to 10 in which the last character may possibly contain the capital letter X). It is defined by an ISO standard, derived from the English SBN coding of 1967. Although not mandatory, its use has now become essential for the placing of the book product on the channels of large retailers.
- Each ISBN code uniquely identifies each specific edition of a book (but not the simple reprints, which maintain the same code as the edition to which they refer) and, once assigned, can no longer be reused.
- To get an ISBN you need to pay a «fee».

<https://www.isbn-international.org/>



The screenshot shows the homepage of the International ISBN Agency website. The browser address bar displays 'isbn-international.org'. The website features a navigation menu with links for 'About ISBN', 'National ISBN Agencies', 'ISBN Governance', 'Tools and resources', and 'News'. A large banner image shows a hand holding a tablet in front of a bookshelf. The main heading reads 'The International ISBN Agency' with the tagline 'We coordinate and supervise the world's essential identifier for books'. Below this is a row of five colored buttons: 'Find A Publisher' (purple), 'ISBN Calculator' (green), 'Find an agency' (orange), 'ISBN Ranges' (blue), and 'About us' (red). A 'Latest news' section is visible on the right, with a headline 'The impact of coronavirus' dated 'mar 30 2020'. The Windows taskbar at the bottom shows the search bar with the text 'Scrivi qui per eseguire la ricerca' and the system clock displaying '20:59 07/06/2020'.

ISBN location and display

The ISBN, which must always appear on the product itself, has since 1 January 2007 comprised 13 digits organized into five groups, preceded by the prefix ISBN followed by a space:

- **Group 1:** prefix or EAN (European Article Numbering); these are the first three digits of the ISBN, introduced from 2007; indicate that you are in the presence of a book (the prefixes currently available are 978 and 979);
- **Group 2:** group identifier (92 = international organizations); language group - is the identifier of the country or linguistic area of the publisher; can use 1 to 5 digits
- **Group 3:** publisher identifier (author code); identification of the publisher or editorial brand; can use 2 to 7 digits.
- **Group 4:** title identifier (within the publisher's production); the book ID can use from 1 to 6 digits.
- **Group 5:** check digit.
Control character - it is the last digit of the ISBN (in the "old" ISBN-10 codes, in addition to the numbers from 0 to 9, the Roman 10 was also used, ie the "X") and is used to verify that the code it has not been read or transcribed incorrectly (which can always happen, especially when using automatic tools such as barcode readers).

i.e. **ISBN 978-92-79-00077-5**

The screenshot shows a web browser displaying the International ISBN Agency website. The page title is "What is an ISBN?". The URL in the address bar is "isbn-international.org/content/what-isbn". The page features a navigation menu with links for "About ISBN", "National ISBN Agencies", "ISBN Governance", "Tools and resources", and "News". A search bar is visible in the top right corner. The main content area includes a diagram of the ISBN 978-92-95055-02-5, with labels for "EAN Prefix", "Registration group", "Registrant", "Publication", and "Check digit". Below the diagram, there is a note: "N.B. Human readable ISBN can be shown with hyphens or spaces". The page also contains a section titled "What is an ISBN?" with a detailed explanation of the ISBN system, including its history and the mathematical formula used for calculation. A list of elements is provided: Prefix element, Registration group element, Registrant element, Publication element, and Check digit. The page footer includes the text "Scrive qui per eseguire la ricerca" and the date "19:07 13/06/2020".

Electronic publications or other types of non-printed products

For online publications, the ISBN must be included on the title screen or its equivalent, and/or on the screen displaying the copyright notice.

For any other product (CD-ROM, DVD, etc.), the ISBN must appear on a label permanently affixed to the product or, if that is not possible, on the lower portion of all the product's permanent packaging (box, sleeve, holder, etc.). The ISBN must also be included in all metadata contained within the publication or product. In the case of a publication in different formats, only one ISBN is required if they are packaged together; if they are distributed separately, each version must be assigned an ISBN. Furthermore, all ISBNs must be listed together in each version, with a brief indication of the format, as in the following example:

Print	ISBN 978-951-45-9693-3
PDF	ISBN 978-951-45-9694-0
EPUB	ISBN 978-951-45-9695-7
HTML	ISBN 978-951-45-9696-4

The ISBN must also be indicated on any material accompanying the publication.

Useful ISBN links

International ISBN agency:

<https://www.isbn-international.org>

ISBN Users' Manual:

<https://www.isbn-international.org/content/isbn-users-manual>

ISBN FAQs:

https://www.isbn.org/faqs_general_questions

EAN.UCC system:

<https://www.gs1.org/>

ISO 2108:2017: international standard book number (ISBN):

<https://www.iso.org/standard/65483.html>

ISO list of members

<https://www.iso.org/members.html>

ISSN

- The **ISSN** is the international number that identifies publications in series (periodicals, such as newspapers or magazines, book collections, yearbooks, etc.), printed or electronic, and allows univocal identification even in the event that there are multiple publications with the same title.
- The ISSN identifies the title of the entire serial publication, but not that of the individual issue of a magazine or the individual volume of a series. Each National Center is responsible for the editorial production of its own country, all grouped in an international network coordinated by the International Center. The syntax of the code and the mechanism for assigning to publications differ from that of the ISBN.
- For Italy, the body responsible for assigning the ISSN is the National Research Council.

The screenshot displays the homepage of the ISSN International Centre website. The browser address bar shows 'www.issn.org'. The page features a header with the ISSN logo and the text 'INTERNATIONAL IDENTIFIER FOR SERIALS AND OTHER CONTINUING RESOURCES, IN THE ELECTRONIC AND PRINT WORLD'. A navigation menu includes 'The Centre and the Network', 'Understanding the ISSN', and 'Services'. The main content area highlights '2 million ISSN assigned, more than 70,000 new ISSN per year and 130,000 ISSN modified per year.' with a 'READ MORE' button. A sidebar on the right offers options: 'REQUESTING AN ISSN', 'FIND A NATIONAL CENTRE', and 'SUBSCRIBE TO THE REGISTER'. A 'NEWS +' section mentions the '2018/04/04 - UKSG 41st Annual Conference and Exhibition in Glasgow'. The footer contains links for 'Who are we?', 'ISSN Portal', 'Restricted access' (with login fields), and 'Newsletter Subscribe / Unsubscribe'.

- The ISSN is made up of the characters 'ISSN' followed by two groups of four digits, separated by a dash. The last digit, located in eighth position, serves as a control code and can have a value from 1 to 10; the value 10 is represented by an "X".
di quattro cifre, separati da un trattino.
- Contrary to the ISBN, the ISSN number is not a "speaking code"; the single digits do not correspond to a specific coding, but are attributed sequentially, regardless of the country of origin, the language, etc. Each ISSN has a key title as well as a start date for the publication. The end date is normally set at "9999".
- The key title consists of the name of the publication and, possibly, a qualifier (often the place of publication) used in cases where it is necessary to distinguish the title of the publication from others that are the same. For example, [ISSN 2282-2259](#) is associated with the key title "[Smart eLab \(Ed. CNR Istituto di Cristallografia\)](#)"

The screenshot shows a web browser window displaying the ISSN website. The address bar shows the URL www.issn.org/understanding-the-issn/what-is-an-issn/. The page features the ISSN logo and the text "INTERNATIONAL STANDARD SERIAL NUMBER INTERNATIONAL CENTRE". The main content area is titled "What is an ISSN?" and includes the following text:

An ISSN is an 8-digit code used to identify newspapers, journals, magazines and periodicals of all kinds and on all media—print and electronic.

- Which publications are concerned by an ISSN?
- What form does an ISSN take?
- What is its role?
- Where is it displayed?

Which publications are concerned by an ISSN?

An ISSN (International Standard Serial Number) identifies all continuing resources, irrespective of their medium (print or electronic):

- newspapers,
- annual publications (reports, directories, lists, etc.),
- journals,
- magazines,
- collections,
- websites,
- databases,
- blogs, etc.

In many countries, an ISSN is mandatory for all publications subject to the legal deposit.

What form does an ISSN take?

The ISSN takes the form of the acronym ISSN followed by two groups of four digits, separated by a hyphen. The eighth digit is a check digit calculated according to a modulus 11 algorithm on the basis of the 7 preceding digits; this eighth control digit may be an "X" if the result of the computing is equal to "10", in order to avoid any ambiguity.

The right sidebar contains several interactive buttons: "FIND A NATIONAL CENTRE", "SUBSCRIBE TO THE REGISTER", "CONSULT THE MANUAL", "THE REGISTER IN FIGURES", and "NEWS".

- The allocation of an ISSN has no legal meaning or value with regard to the copyright of the work concerned or its content.
- An ISSN is assigned exclusively for:
 - the entire lifespan of a title;
 - each language version;
 - each edition (monthly, annual, etc.);
 - each separate format.
- In the case of multiple volumes, an ISSN is assigned to the key title, regardless of the number of volumes it comprises. An ISSN can also be assigned to a collection of monographs as such, with an ISBN being assigned to each volume in the collection.
- The ISSN is permanently associated with a 'key title', created by the ISSN network at the time the resource is registered. The key title is unique to each specific continuing resource.
- A new ISSN (and a new key title) must be assigned to a continuing resource if:
 - the title changes significantly;
 - the format is changed.
- Any supplement or sub-series that may accompany a continuing resource must be assigned its own ISSN (and thus a specific key title).

ISSN location and display

- An ISSN is composed of two groups of four digits (Arabic numerals) separated by a hyphen and preceded by the letters ISSN followed by a space. The last character (the control character) may be an X:

ISSN 0251-1479

ISSN 1831-855X

- The ISSN must be printed clearly on or in the first issue of a serial publication and on or in any subsequent issue, as well as on or in each version of an ongoing integrating resource.
- Where an ISSN is accompanied by another identifier, such as an ISBN in the case of a volume in a collection, the two numbers must appear together, each identified by the required prefix (ISBN, ISSN, DOI, etc.).
- If a continuing resource has been assigned several ISSNs for different titles (such as the title of a main collection and the titles of its sub-collections), all the ISSNs must be printed on the resource, and be distinguished by the inclusion of (for example) the complete or abridged title in brackets.

Print ISSN 1562-6585

HTML ISSN 1063-7710

- For printed works, the ISSN must appear on each issue, in the upper right-hand corner of the cover or, if that is not possible, printed clearly and visibly on one of the following (in order of preference): title page, sleeve, data box, back cover, copyright page or masthead area.
- For works in electronic format (online works, CD-ROM, etc.), it must be included on the title screen or, if that is not possible, on the main menu, and also, if possible, on any label permanently affixed to the publication. If it is not possible to display the ISSN on the product or its label, it must appear on the container.
- For online resources, the ISSN must also appear in the metadata (in the identification field).

Linking ISSN (ISSN-L)

- Pursuant to ISO 3297:2017 (ISSN), a linking ISSN (ISSN-L) is assigned to a continuing resource to link together the various medium versions of the resource, regardless of the number of versions (each version must itself be assigned a separate ISSN).
- The ISSN-L is composed of a sequence of two groups of four digits separated by a hyphen and preceded by the letters ISSN-L followed by a space, as in the following example:

ISSN-L 0251-1479

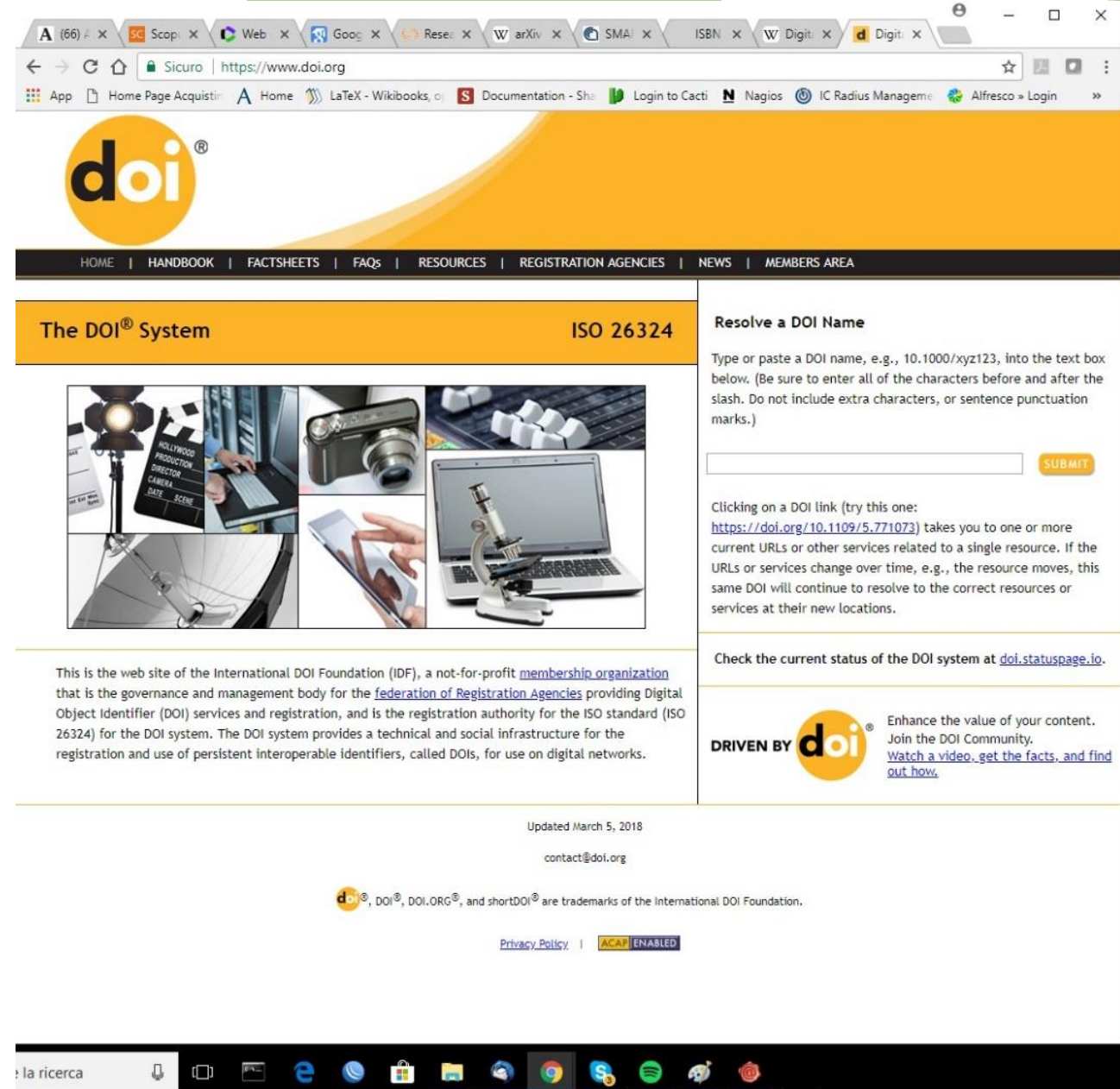
- An ISSN-L must be changed when the titles of all medium versions of a resource undergo a major change at the same time. A new ISSN is then assigned to each separate version and a new ISSN-L to the collection.

Useful ISSN links

- ISSN International Centre:
<https://www.issn.org>
- ISSN Manual:
<https://www.issn.org2-23364-ISSN-Manual.php>
- ISO 3297:2017: international standard serial number (ISSN)
<https://www.iso.org/standard/73322.html>
- ISO standards can be obtained from ISO members, a list of which is available from the ISO website
<https://www.iso.org/members.html>

DOI

- The **Digital Object Identifier** is a standard that allows the lasting identification, within a digital network, of any entity that is the object of intellectual property and to associate the related reference data, the metadata, according to a structured and extensible scheme.
- DOI differs from common Internet indicators, such as URLs, in that it identifies an object directly, as a first-class entity, and not simply through some of its attributes, such as the place where the object is located.
- The DOI differs from common intellectual property identifiers such as those related to bibliographic standards (ISBN, ISRC, etc.), in that it is immediately operable on the net and can be used for the development of specific services such as search engines, certificates of authenticity, etc. ..



The screenshot shows a web browser window displaying the DOI website. The browser's address bar shows the URL <https://www.doi.org>. The website features a navigation menu with links to HOME, HANDBOOK, FACTSHEETS, FAQs, RESOURCES, REGISTRATION AGENCIES, NEWS, and MEMBERS AREA. The main content area is titled "The DOI® System" and includes a sub-header "ISO 26324". Below this is a collage of images representing various digital and physical objects. To the right, there is a section titled "Resolve a DOI Name" with a text input field and a "SUBMIT" button. Below the input field, there is a paragraph explaining how to use a DOI link and a link to check the current status of the DOI system at doi.statuspage.io. At the bottom of the page, there is a footer with the text "Updated March 5, 2018" and "contact@doi.org". A small logo for "driven by doi" is also present, along with a note that "doi", "DOI", "DOI.ORG", and "shortDOI" are trademarks of the International DOI Foundation. A "Privacy Policy" link and an "ACAP ENABLED" badge are also visible.

What can be identified by a DOI

- A DOI identifier can be registered on any form of intellectual property expressed in any digital environment.
- Intellectual property includes both digital content and content published on physical media: DOIs can be used to identify texts, images, audio or video resources, software, etc.
- An object can be arbitrarily identified at any level of granularity. This means that, for example, a DOI can be registered on the head of a magazine, on its single issue, on the single article of a given issue, on the single table of a given article.

<https://doi.org/10.30441/smart-elab.v8i0.180>

The screenshot shows a web browser window displaying the article page for "In Materia di Diritto d'Autore Oggi" on the SMART eLAB website. The browser's address bar shows the URL: calliope.cnr.it/index.php/smartelab/article/view/50. The website header features the SMART eLAB logo and a "Login" button. The main content area displays the article title, authors (Gisella Menichelli, Antonella Cecchetti, and Elisabetta Ciccarelli), their affiliations, the DOI (<https://doi.org/10.30441/smart-elab.v8i0.180>), and keywords. The abstract discusses the importance of libraries in the digital age. The right sidebar contains navigation options for language (Italiano, English) and information (per i lettori, Per gli autori, Per i bibliotecari). The Windows taskbar at the bottom shows the system tray with the date 08/06/2020 and time 15:29.

Research evaluation identifiers

A decorative graphic consisting of a solid green horizontal bar that spans the width of the slide. Below this bar, on the right side, there are several horizontal lines of varying lengths and colors, including shades of green and white, creating a layered, stepped effect.

Scientific Identifiers

The most commonly used scientific identifiers are:

- **ORCID,**
- **WoS ResearcherID**
- **Scopus AuthorID.**

The three identifiers communicate and can be integrated with each other.

ResearcherID and AuthorID are "proprietary" identifiers or linked to the use of a specific database-owned platform. Both allow researchers to manage the lists of publications that are indexed in the two databases, to keep track of the citations received from their works and to monitor their h-index, avoiding identification errors.

ORCID

- The **Open Researcher and Contributor ID** (ORCID) is a non-proprietary alphanumeric identifier for the unique identification of scientists and other authors of the scientific literature.
- It responds to the problem of distinguishing the contributions of different authors in the case of homonyms, of surnames that change (for example after a marriage), of different abbreviations for the first name or of transliterations from different writing systems.
- It provides a stable identifier for people in analogy to the role played by Digital Object Identifiers (DOI) for content.
- ORCID launched its service on October 16, 2012, issuing the first user identifiers.

The screenshot shows the ORCID website homepage. At the top, there is a search bar and a navigation menu with links for 'FOR RESEARCHERS', 'FOR ORGANIZATIONS', 'ABOUT', 'HELP', and 'SIGN IN'. Below the navigation, the ORCID logo is displayed with the tagline 'Connecting Research and Researchers'. A statistic indicates '4,682,649 ORCID iDs and counting... See more...'. The main content area features a section titled 'DISTINGUISH YOURSELF IN THREE EASY STEPS' with three numbered steps: 1. REGISTER (Get your unique ORCID identifier Register now! Registration takes 30 seconds.), 2. ADD YOUR INFO (Enhance your ORCID record with your professional information and link to your other identifiers (such as Scopus or ResearcherID or LinkedIn).), and 3. USE YOUR ORCID ID (Include your ORCID identifier on your Webpage, when you submit publications, apply for grants, and in any research workflow to ensure you get credit for your work.). Below this is a section 'MEMBERS MAKE ORCID POSSIBLE!' with text about ORCID being a non-profit organization supported by a global community of organizational members. A link is provided: 'Curious about who our members are? See our complete list of member organizations'. On the right side, there is a 'LATEST NEWS' section with three news items: 'Thu, 12 Apr 2018 Collect & Connect: Four New Integrations You Need To Know About!', 'Tue, 10 Apr 2018 Acknowledging Research Resources: New ORCID Data Model', and 'Fri, 06 Apr 2018 A compendium of taxonomists on ORCID'. At the bottom right, there is a 'Tue, 27 Mar 2018 eLife Users Can Now Register with ORCID to Annotate Scientific Content' item. The browser's address bar shows 'https://orcid.org' and the Windows taskbar is visible at the bottom.

- ORCID is a nonprofit organization helping create a world in which all who participate in research, scholarship and innovation are uniquely identified and connected to their contributions and affiliations, across disciplines, borders, and time.
- ORCID is governed by a Board of Directors representative of our membership, with wide stakeholder representation. ORCID is supported by a dedicated and knowledgeable professional staff.
- ORCID membership is open to any organization interested in integrating ORCID identifiers. All member fees are used to sustain and develop ORCID for the benefit of the research community.
- ORCID serves a broad stakeholder community that includes individuals, research and scholarly organizations, data repositories and libraries, publishers, patent offices, service providers, and more...

The purpose of ORCID is to encourage the transition from Science to e-Science, where scientific publications can be sieved to extract hidden links and ideas in the ever-growing volume of scientific literature. Another suggested use is to provide each researcher with a digital curriculum vitae that provides a picture of his or her contribution to science that goes far beyond the simple list of publications. The idea is that other organizations can use the ORCID open access database to build upon their services.

The screenshot shows the ORCID profile page for Augusto Pifferi. The browser address bar displays "orcid.org/my-orcid". The page header includes the ORCID logo and the tagline "Connecting Research and Researchers". A navigation bar contains links for "FOR RESEARCHERS", "FOR ORGANIZATIONS", "ABOUT", and "HELP". The user's name "Augusto Pifferi" and language "English" are shown in the top right. A search bar is located below the header.

The profile page is divided into two main sections. On the left is a sidebar with the following items:

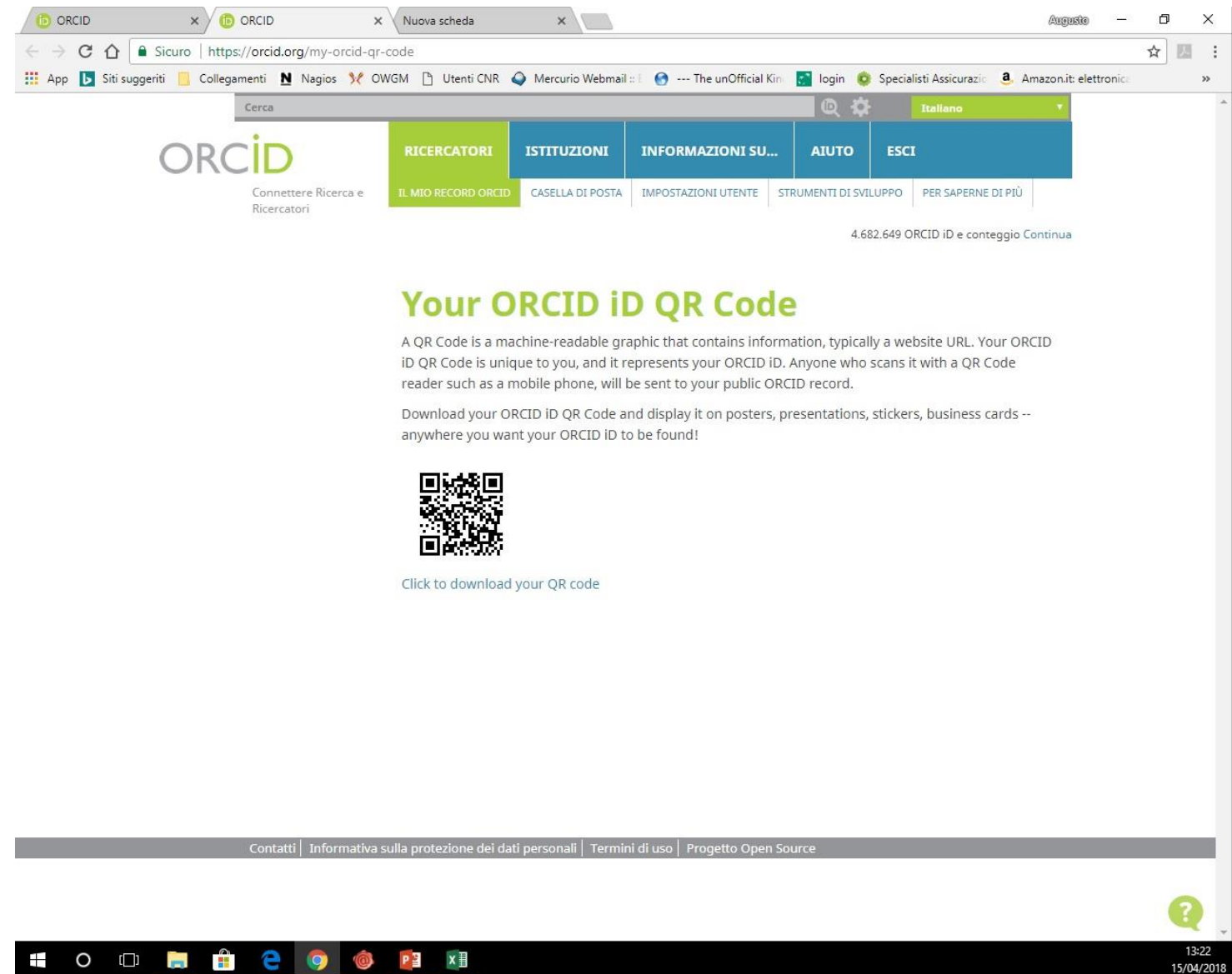
- Augusto Pifferi** (profile picture)
- ORCID iD**: <https://orcid.org/0000-0003-0262-7723> (with a "View public version" link)
- Display your ID on other sites
- Public record print view
- Get a QR Code for your ID
- Also known as
- Country
- Keywords
- Websites & Social Links: [Pagina personale](#), [Mendeley profile](#)
- Other IDs: [ResearcherID: J-1927-2012](#), [Scopus Author ID: 56212002600](#)

The main content area is titled "Biography" and contains several sections:

- Employment (1)**: A section with a "+ Add employment" and "Sort" button. It lists "Consiglio Nazionale delle Ricerche: Roma, Lazio, IT" from 1981-04-01 to present, with the role of "Researcher (Institute of Crystallography)". The source is "Augusto Pifferi" and it is marked as a "Preferred source".
- Education and qualifications (1)**: A section with "+ Add qualification", "+ Add education", and "Sort" buttons. It lists "University of Rome : Rome, IT" from 1974-09-01 to 1979-11-29, with the role of "Dr. (Physics)". The source is "Augusto Pifferi" and it is marked as a "Preferred source".
- Invited positions and distinctions (0)**: A section with "+ Add invited position", "+ Add distinction", and "Sort" buttons. Below the header is a definition: "An invited position is an invited non-employment affiliation. A distinction is an honorary or other award, distinction, or prize. Add invited position or add distinction."
- Membership and service (0)**: A section with "+ Add service", "+ Add membership", and "Sort" buttons. Below the header is a definition: "Membership is membership in any society or organization. Service is a dedication of time, money, or other resources. Add membership or add service."
- Funding (0)**: A section with "+ Add funding" and "Sort" buttons.

The bottom of the page features a Windows taskbar with the search bar containing "Scrivi qui per eseguire la ricerca", the system tray showing the time "21:45" and date "13/06/2020", and a "Aiuto" (Help) button.

- In an editorial published in Nature it was noted that ORCID, in addition to marking the contribution that researchers make to the articles, could also be assigned to the datasets that he helped generate, comments on posts published on his colleagues' blogs, drafts of articles not yet published, changes to Wikipedia pages and much more.
- In April 2014, ORCID announced that it will begin collaborating with Consortia Advancing Standards in Research Administration Information to register and recognize peer review contributions.



The screenshot shows a web browser window with the URL <https://orcid.org/my-orcid-qr-code>. The page features the ORCID logo and navigation tabs for 'RICERCATORI', 'ISTITUZIONI', 'INFORMAZIONI SU...', 'AIUTO', and 'ESCI'. Below the navigation, there is a search bar and a language dropdown set to 'Italiano'. The main content area is titled 'Your ORCID iD QR Code' and includes the following text:

A QR Code is a machine-readable graphic that contains information, typically a website URL. Your ORCID iD QR Code is unique to you, and it represents your ORCID ID. Anyone who scans it with a QR Code reader such as a mobile phone, will be sent to your public ORCID record.

Download your ORCID iD QR Code and display it on posters, presentations, stickers, business cards -- anywhere you want your ORCID ID to be found!

Below the text is a QR code and a link that says 'Click to download your QR code'.

At the bottom of the page, there is a footer with links for 'Contatti', 'Informativa sulla protezione dei dati personali', 'Termini di uso', and 'Progetto Open Source'. The Windows taskbar at the bottom shows the time as 13:22 on 15/04/2018.

How to create your own ORCID

- Connect to the [ORCID](https://orcid.org) portal.
- Click on the Register Now option contained in the menu proposed in point 1.
- Type the information required by the registration procedure and press Register. In addition to the personal information, the procedure asks you to indicate how to view your profile and the preferred notification methods for the exchange of communications.

The screenshot shows the ORCID registration page in a web browser. The browser's address bar displays 'orcid.org/register'. The page features the ORCID logo and the tagline 'Connecting Research and Researchers'. A navigation menu includes 'FOR RESEARCHERS', 'FOR ORGANIZATIONS', 'ABOUT', and 'HELP'. A 'SIGN IN/REGISTER' button and a language dropdown set to 'English' are visible. A search bar with 'Registry' and a search icon is also present. The main content area is titled 'Register for an ORCID id' and contains the following text: 'ORCID provides a persistent digital identifier that distinguishes you from every other researcher and, through integration in key research workflows such as manuscript and grant submission, supports automated linkages between you and your professional activities ensuring that your work is recognized. Per ORCID's terms and conditions, you may only register for an ORCID id for yourself.' The registration form includes the following fields: 'First name' (filled with 'Augusto'), 'Last name (Optional)' (filled with 'Pifferi'), 'Primary email' (filled with 'augusto.pifferi@ic.cnr.it'), and 'Additional email (Optional)' (filled with 'augusto.pifferi@gmail.com'). There is an 'Add another email' link and a 'Password' field. Below the password field, there are three checked checkboxes: '8 or more characters', '1 letter or symbol', and '1 number'. A 'Confirm Password' field is partially visible at the bottom. A blue 'Aiuto' button is located in the bottom right corner of the form area. The Windows taskbar at the bottom shows the search bar with the text 'Scrivi qui per eseguire la ricerca', the system clock at 21:40 on 13/06/2020, and several application icons.

WoS ResearcherID

- **ResearcherID** provides a solution to the author's ambiguity problem within the academic research community. Each member is assigned a unique identifier to allow researchers to manage their lists of publications, track their cited times, counts and h-indexes, identify potential collaborators and avoid author identification errors.
- Web of Science ResearcherID is now on Publons.
- Publons is the new environment where you can benefit from the improved Web of Science ResearcherID, add your publications, track your citations, and manage your Web of Science record.

The screenshot shows a web browser window with the URL `researcherid.com/#rid-for-researchers`. The page header features the "ResearcherID" logo and a search bar with the placeholder text "Enter a name or ResearcherID to find a researcher". The main content area is titled "Welcome to the new Web of Science ResearcherID" and is divided into two sections: "I have a ResearcherID account" and "I want to register".

I have a ResearcherID account

[LOGIN TO RESEARCHERID ON PUBLONS](#)

Log in with your usual details to see your ResearcherID profile on Publons.

I want to register

[JOIN PUBLONS NOW](#)

Publons is the new environment where you can benefit from the improved Web of Science ResearcherID, add your publications, track your citations, and manage your Web of Science record.

Learn more:
[ResearcherID-Publons FAQs](#)

For researchers | **For institutions**

Web of Science ResearcherID is now on Publons.

Publons is the new environment where you can benefit from the improved Web of Science ResearcherID, add your publications, track your citations, and manage your Web of Science record.

Log in with your usual details to see your ResearcherID profile on Publons.

If you have any questions, please see the [ResearcherID-Publons FAQs](#) or contact researcherid@publons.com.

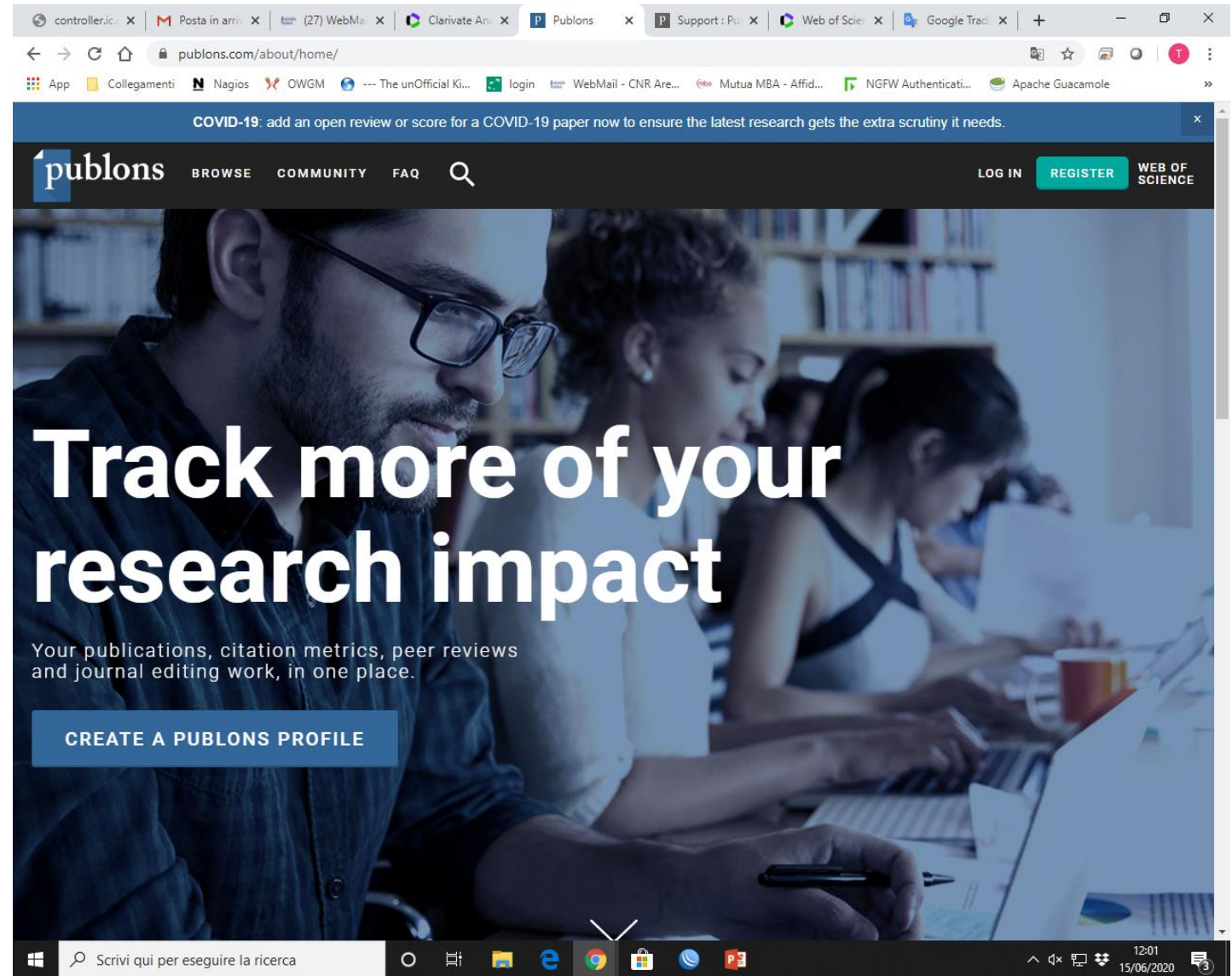
The bottom part of the screenshot shows a laptop displaying a "Private Dashboard - Summary" for a user. The dashboard includes a "Publication metrics" table and a "Peer review metrics" table. Callout boxes highlight "Web of Science publications and citations" and "Publons peer reviews".

Publication metrics	total	2019	2018	2017	2016
Publications	18	644	13*	39.4	53.5

Peer review metrics	total	2019	2018	2017
Peer reviews	36	13	2.1	

Windows taskbar at the bottom shows the search bar with the text "Scrivi qui per eseguire la ricerca", the system clock at 10:57, and the date 15/06/2020.

- ResearcherID information, now Publons, integrates with the Web of Science and is ORCID compliant, allowing you to claim and show your publications from a single account. Search the registry to find collaborators, examine publication lists and explore how research is used around the world!



How to create your own ResearcherID in Publons

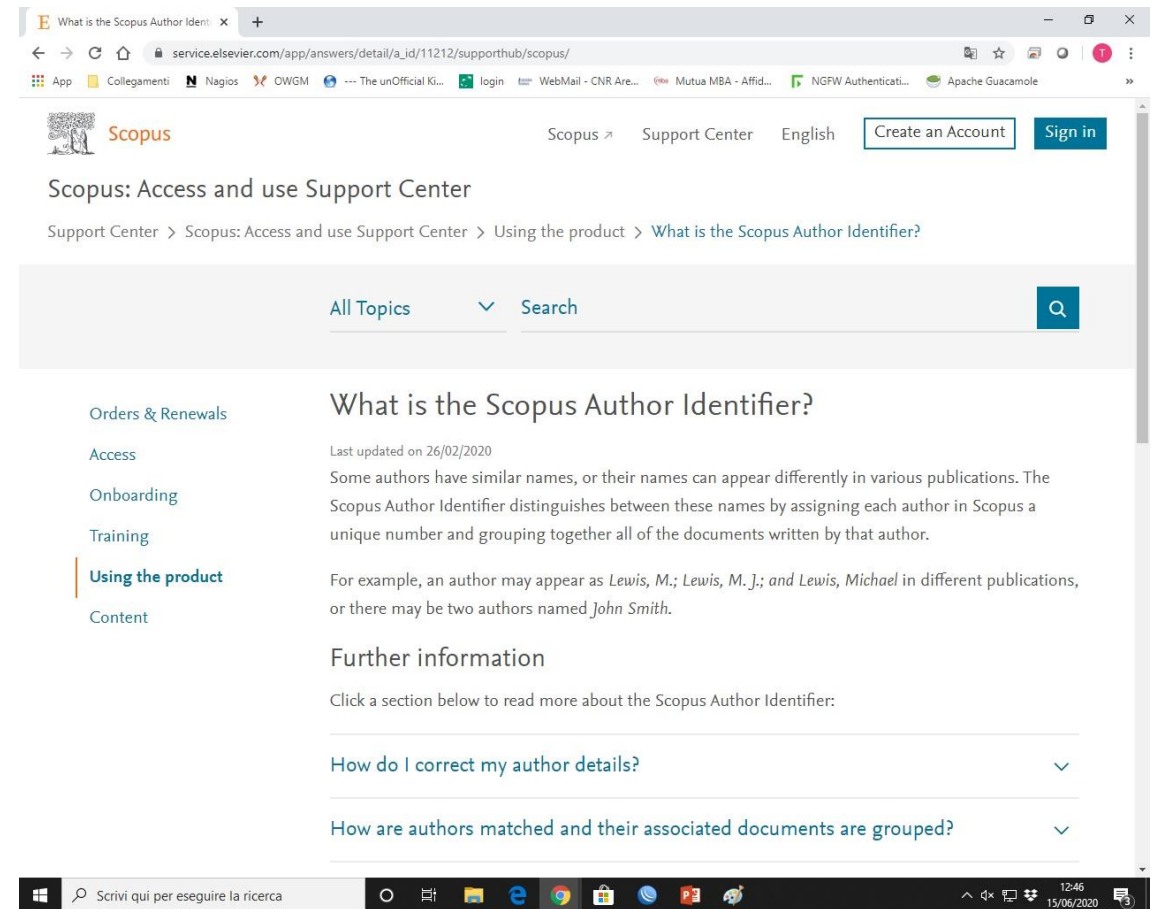
- Connect to the [Publons](#) database.
- Click on the Register option contained in the Sign in menu.
- Type the information required by the registration procedure and press Continue.

The screenshot shows the Publons website interface. At the top, there is a navigation bar with the Publons logo, links for BROWSE, COMMUNITY, and FAQ, and buttons for LOG IN, REGISTER, and WEB OF SCIENCE. Below the navigation bar, the main heading reads "Show your research impact". To the left, a blue box contains the following text: "You can now sign in to Publons, EndNote, and Web of Science® with one email address and password. If you previously had a ResearcherID account or already have an account with one of the above products, please sign in with your credentials for that service to start using Publons. [Learn more about registering for Publons here](#)." Below this box is a registration form titled "Register to continue with Publons" with fields for Email address, Password, Re-enter password, and First Name. To the right of the registration form, there is a list of benefits: "Join over 2,400,000 researchers on Publons to track your publications, citation metrics, peer reviews, and journal editing work in a single, easy-to-maintain profile." followed by a bulleted list: "All your publications, instantly imported from Web of Science, ORCID, or your bibliographic reference manager (e.g. EndNote or Mendeley)", "Trusted citation metrics, automatically imported from the Web of Science Core Collection", "Your verified peer review and journal editing history, powered by partnerships with thousands of scholarly journals", "Publons CV summarising your scholarly impact as an author, editor and peer reviewer.", and "Support Open Science by posting community reviews against papers and preprints, such as in our COVID-19 Index." At the bottom right, a laptop displays a "Private Dashboard - Summary" with various charts and statistics, including a table with values 18, 644, 13, 39.4, and 53.5.

SCOPUS AuthorID (Elsevier)

What is the Elsevier Scopus Author Identifier?

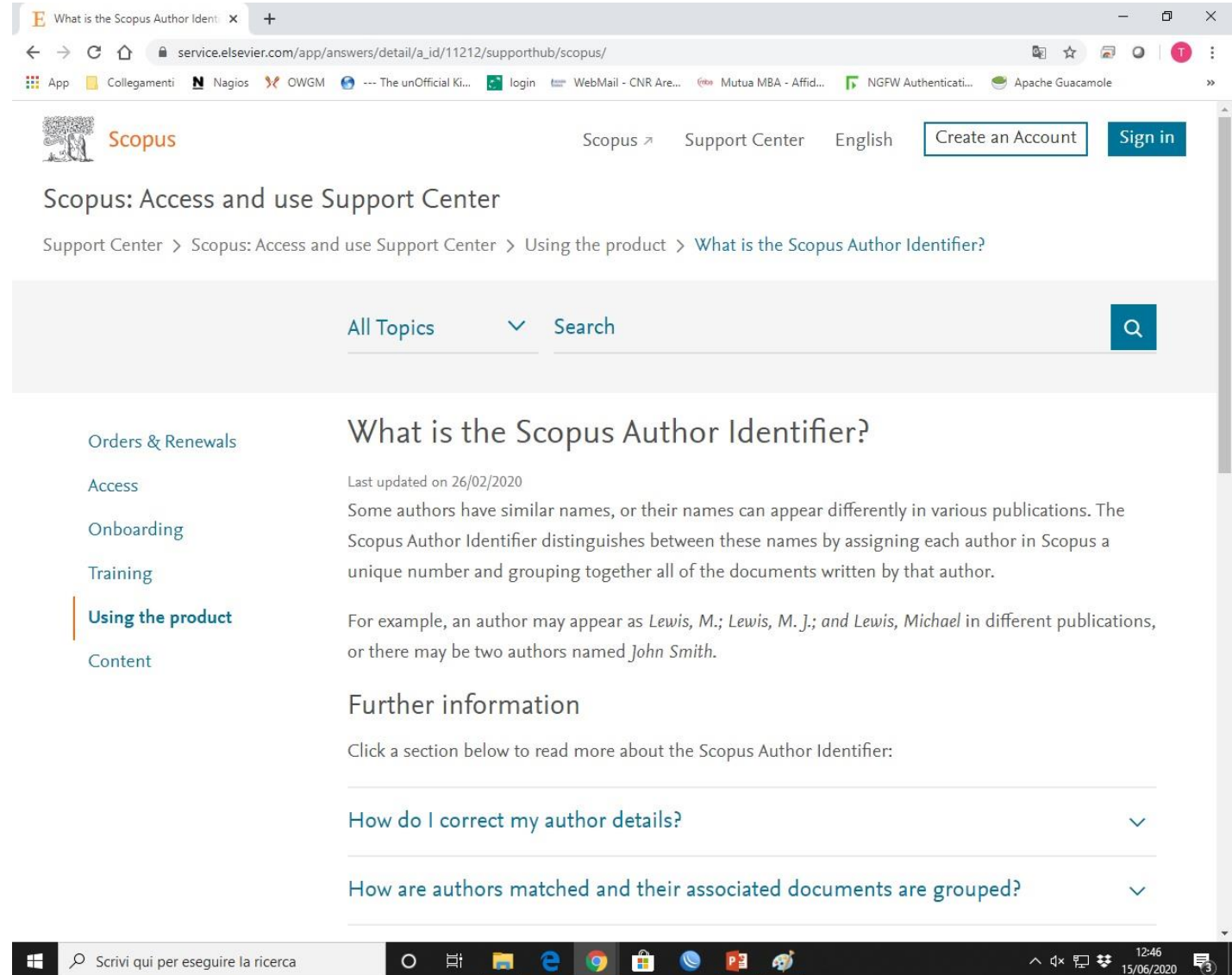
- Some authors have similar names, or their names can appear differently in various publications. The Scopus Author Identifier distinguishes between these names by assigning each author in Scopus a unique number and grouping together all of the documents written by that author.
- For example, an author may appear as Lewis, M.; Lewis, M. J.; and Lewis, Michael in different publications, or there may be two authors named John Smith.



The screenshot shows a web browser window displaying the Scopus Support Center page. The browser's address bar shows the URL: `service.elsevier.com/app/answers/detail/a_id/11212/supporthub/scopus/`. The page header includes the Scopus logo, navigation links for 'Scopus', 'Support Center', and 'English', and buttons for 'Create an Account' and 'Sign in'. The breadcrumb trail reads: 'Support Center > Scopus: Access and use Support Center > Using the product > What is the Scopus Author Identifier?'. A search bar is visible with the text 'All Topics' and a search icon. The main content area features a sidebar with navigation options: 'Orders & Renewals', 'Access', 'Onboarding', 'Training', 'Using the product' (highlighted), and 'Content'. The main article title is 'What is the Scopus Author Identifier?' with a sub-header 'Last updated on 26/02/2020'. The text explains that the Scopus Author Identifier distinguishes between authors with similar names by assigning a unique number. An example is provided: 'For example, an author may appear as Lewis, M.; Lewis, M. J.; and Lewis, Michael in different publications, or there may be two authors named John Smith.' Below the text, there is a section for 'Further information' with a prompt to 'Click a section below to read more about the Scopus Author Identifier:'. Two expandable sections are visible: 'How do I correct my author details?' and 'How are authors matched and their associated documents are grouped?'. The Windows taskbar at the bottom shows the search bar with the text 'Scrivi qui per eseguire la ricerca', the system clock at 12:46 on 15/06/2020, and various application icons.

How to create your own AuthorID in Scopus

- Connect to the **Scopus** database.
- Click on the Register option contained in the menu (at the top right of the menu bar).
- Type the information required by the registration procedure and press Register.
- AuthorID will be automatically generated



The screenshot shows a web browser window displaying the Scopus Support Center page. The browser's address bar shows the URL: `service.elsevier.com/app/answers/detail/a_id/11212/supporthub/scopus/`. The page header includes the Scopus logo, navigation links for 'Scopus', 'Support Center', and 'English', and buttons for 'Create an Account' and 'Sign in'. The main content area is titled 'Scopus: Access and use Support Center' and includes a breadcrumb trail: 'Support Center > Scopus: Access and use Support Center > Using the product > What is the Scopus Author Identifier?'. A search bar is visible at the top right of the content area. The left sidebar contains a menu with categories: 'Orders & Renewals', 'Access', 'Onboarding', 'Training', 'Using the product' (which is highlighted), and 'Content'. The main article title is 'What is the Scopus Author Identifier?' with a sub-header 'Last updated on 26/02/2020'. The article text explains that some authors have similar names and that the Scopus Author Identifier distinguishes between them by assigning a unique number. It provides examples: 'Lewis, M.', 'Lewis, M. J.', and 'Lewis, Michael'. Below the text, there is a section for 'Further information' with two expandable links: 'How do I correct my author details?' and 'How are authors matched and their associated documents are grouped?'. The Windows taskbar at the bottom shows the search bar with the text 'Scrivi qui per eseguire la ricerca', the system clock at 12:46 on 15/06/2020, and several application icons.

Journal & Country Rank

The slide features a dark green background. The title 'Journal & Country Rank' is centered in the upper half in a white, sans-serif font. Below the title, there is a thick green horizontal bar that spans the width of the slide. Underneath this bar, there are several thin, light green and white horizontal lines that create a decorative, layered effect, extending from the left side towards the right.

IMPACT FACTOR

- In academic publishing, the impact factor (IF) is a synthetic index, owned by Thomson Reuters, which measures the average number of citations received in a particular year from articles published in a scientific journal over the previous two years.
- In general, the IF is part of the so-called scientometric indices subject to a growing number of studies and research whose limits and potentials are the subject of scientometry, a scientific discipline - with some dedicated journals - which aims to develop indices to evaluate research. There is currently no generally accepted and valid mathematical method for evaluating research. It was originally created for use by libraries (bibliometric index) which had to choose the most popular magazines to activate subscriptions and not to evaluate the quality of the different magazines. Its use for a supposed magazine evaluation is the most recent of its applications.
- Magazine selection is done at the discretion of Thomson Reuters; the main features that allow a scientific journal to be taken into consideration for the measurement of the IF are:
 - punctuality in the publication of the files;
 - the application of an editorial evaluation process of the articles based on peer review;
 - the presence of an abstract and bibliographic information in English (although most of the journals surveyed are published entirely in English) as well as lists of references in the articles in Latin characters and reported according to international publishing conventions;
 - the internationality of the authors;
 - the interest in the scientific content also in relation to the current coverage of the specific thematic category or to the discussion of emerging topics;
 - the presence of citations data in the magazine (or on the authors who write to you) in the database of citations of the journals already registered by Thomson Reuters.

CALCULATION of the IMPACT FACTOR

Example of calculating the impact factor of a magazine for 2008

- Citations in 2008, in any census journal, of articles published in the journal considered in:

2007 = 32

2006 = 43

Totale biennio: 75

- Number of articles published in the journal taken into consideration in:

2007 = 86

2006 = 69

Totale biennio: 155

- Calculation of the IF 2008 for the magazine considered:

$$\frac{\text{2008 citations of articles published in the biennium 2006-07}}{\text{Total articles published in the biennium 2006-07}} = \frac{75}{155} = 0,484$$

- In the comparison between two journals of the same thematic category, a higher impact factor for a journal indicates that in the previous two years the journal contains articles that in the calculation year of the IF were on average more cited than the other.

- Not all of these criteria are related to the magazine's supposed scientific value; in particular, the first and last criteria have very little to do with scientific authoritativeness. Coverage is frequently reviewed, continually leading to the entry of new journals and the leaking of already registered journals. In general, however, the overall number of magazines and the degree of coverage tend to grow.
- Thomson Reuters provides in the [Journal Citation Reports](#) (JCR) the calculation of the IF and the ranking of a particular magazine in a homogeneous set of journals by thematic category, for a wide range of different research sectors.
- Italian legislation (Ministerial Decree of 28 July 2009, art. 3 paragraph 4) considers the impact factor as an additional parameter for the evaluation of the qualifications presented in the competitions, limited to the scientific-disciplinary sectors in which their use is recognized at international level.
- However, the method and, above all, its application are not without criticism. It should be noted that Thomson Reuters itself considers abuse of the application of the IF for the evaluation of the individual researcher or of the impact generated on the scientific community by a single article. It also does not recommend the use of this index to estimate the "absolute value" of a magazine and to make comparisons between different scientific fields. The only valid use of the IF is, according to its creators, the classification of magazines within its thematic category of reference, which however should not be based only on the IF but also on other indices such as Immediacy Index, Total Cites, Total Articles and Citation Half-Life, which should be used together for a multidimensional evaluation of cataloged journals.

Journal Citation Reports (JCR)

The JCR, in addition to the magazine's Impact Factor, provides for each individual title other bibliometric indexes obtained from the ISI citation databases, which can also be used by teachers and researchers to identify the periodicals to which they submit their work for publication; among these indicators, we highlight here:

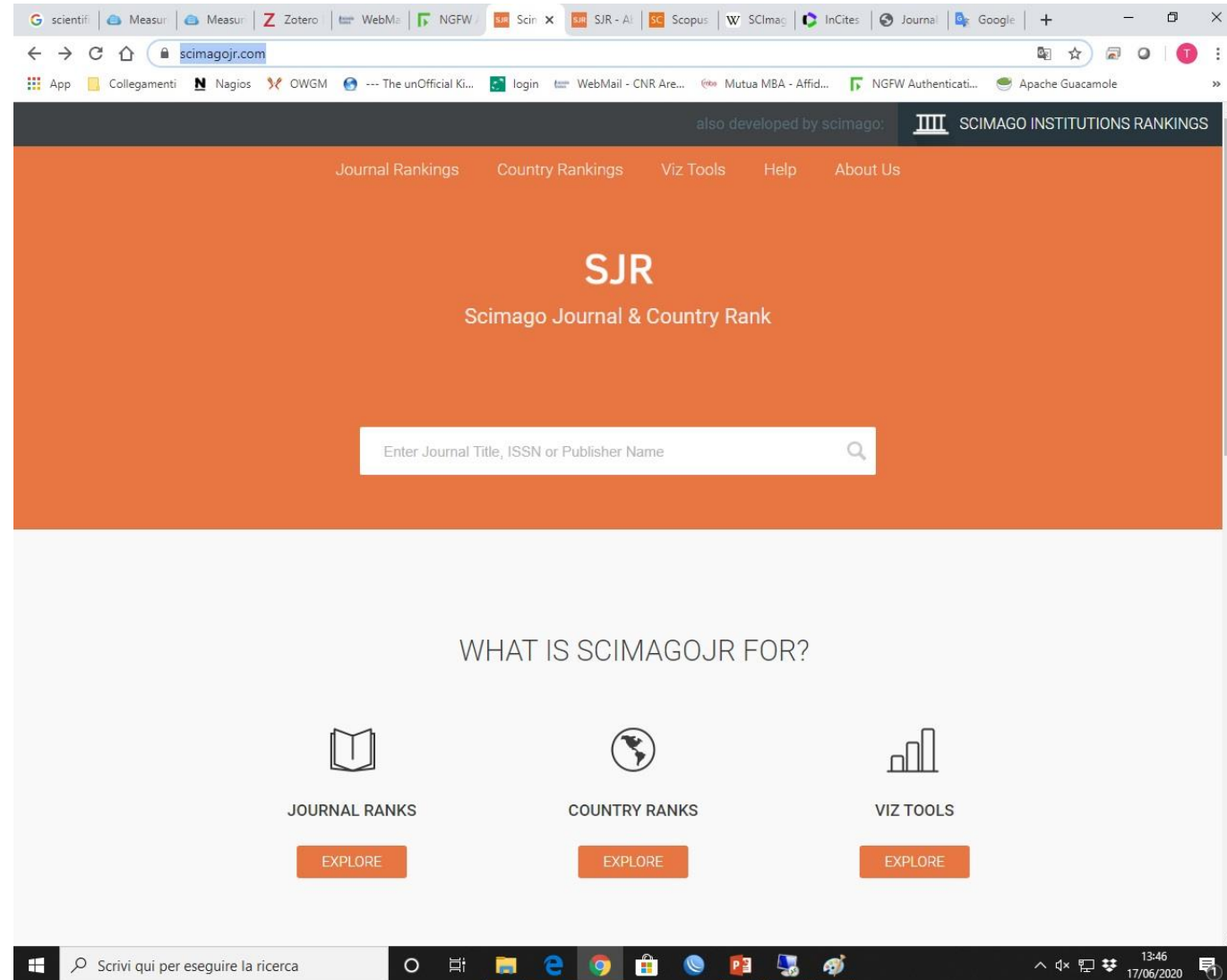
- the 5-year Journal Impact Factor: the IF calculated on the publications of the five years preceding that of reference;
- the Journal Immediacy Index: expresses the average number of citations received by the articles in the year of publication, or the "immediacy" with which they are received by the scientific community);
- the Journal Cited Half-Life: expresses the median age of the articles of the journal in question mentioned in the reference year, or provides an indication of the persistence over time of the citations; the data is calculated by counting backwards, from the reference year, in how many years 50% of the magazine's total citations are reached.

The screenshot shows the InCites Journal Citation Reports website. The browser address bar displays the URL: jcr.clarivate.com/JCRLandingPageAction.action?IPStatus=IPValid&Init=Yes&SrcApp=IC2LS&locale=en_US&SID=H3-qaj4OlyQOm1db6kazga9.... The page features a navigation bar with links for Web of Science, InCites, Journal Citation Reports, Essential Science Indicators, EndNote, and Publons. The main heading is "InCites Journal Citation Reports" with the Clarivate Analytics logo. Below the heading, a welcome message reads "Welcome to Journal Citation Reports" and "Search a journal title or select an option to get started". A search input field contains the text "JOURNAL OF CULTURAL HERITAGE". Three navigation options are presented: "Browse by Journal" (with a book icon), "Browse by Category" (with a list icon), and "Custom Reports" (with a clipboard icon). The footer includes the Clarivate logo, the tagline "Accelerating innovation", copyright information for 2020, and links for Copyright notice, Terms of use, Privacy statement, and Cookie policy. Social media icons for Facebook and Twitter are also present. The Windows taskbar at the bottom shows the search bar with the text "Scrivi qui per eseguire la ricerca" and the system tray with the date and time "13:34 17/06/2020".

SCImago Journal & Country Rank

The SCImago Journal & Country Rank is a publicly available portal that includes the journals and country scientific indicators developed from the information contained in the Scopus® database (Elsevier B.V.). These indicators can be used to assess and analyze scientific domains. Journals can be compared or analysed separately. Country rankings may also be compared or analysed separately. Journals can be grouped by subject area (27 major thematic areas), subject category (313 specific subject categories) or by country. Citation data is drawn from over 34,100 titles from more than 5,000 international publishers and country performance metrics from 239 countries worldwide. The SJCR allows you also to embed significant journal metrics into your web as a clickable image widget

This platform takes its name from the SCImago Journal Rank (SJR) indicator (PDF), developed by SCImago from the widely known algorithm Google PageRank™. This indicator shows the visibility of the journals contained in the Scopus® database from 1996.



Science Citation Index

- The Science Citation Index (SCI) is a citation index originally produced by the Institute for Scientific Information (ISI) and created by Eugene Garfield. It was officially launched in 1964. It is now owned by Clarivate Analytics (previously the intellectual and scientific property of Thomson Reuters). The larger version (Science Citation Index Expanded) covers over 8,500 important and significant journals, across 150 disciplines, from 1900 to today. These are alternately described as the world's leading science and technology journals due to a rigorous selection process.
- The index is available online through various platforms, such as Web of Science and SciSearch. (There are also CDs and printed editions covering fewer magazines). This database allows a researcher to identify which subsequent articles cited a particular previous article, or cited articles from a particular author, or were cited more frequently. Thomson Reuters also markets several subsets of this database, termed "Specialty Citation Indexes", such as the Neuroscience Citation Index and the Chemistry Citation Index.

Italian Research Quality Assessment



ANVUR

The National Agency for the Evaluation of the University and Research System (acronym ANVUR) is a public body of the Italian Republic, supervised by the Ministry of Education, University and Research (MIUR). The institution, established in 2006 with headquarters in Rome, is responsible for evaluating the activity of universities in Italy.

The institution assesses the quality of the processes, results and products of management, training and research activities, including technology transfer, universities and research bodies supervised by MIUR.

The screenshot shows the ANVUR website homepage. At the top, there is a navigation bar with the ANVUR logo and the text "AFFILIATE OF ENQA" and "Agenzia Nazionale di Valutazione del Sistema Universitario e della Ricerca". Below the navigation bar, there is a main content area with a header "AVA - INDICATORI PER IL MONITORAGGIO ANNUALE DEI CDS E INDICATORI DI ATENEO: AGGIORNAMENTO TRIMESTRALE..." and a sub-header "Creto da Venerdì, 13 Aprile 2018 09:24". The main content area is divided into a grid of 12 boxes, each representing a different area of evaluation: AFAM (Alta Formazione Artistica, Musicale e Coreutica), ASN (Abilitazione Scientifica Nazionale), AVA (Autovalutazione, Valutazione Periodica, Accreditamento), DIPARTIMENTI (Dipartimenti di Eccellenza), DOTTORATI (Accreditamento e Valutazione Corsi di Dottorato), FFABR (Finanziamento delle Attività Base di Ricerca), PERFORMANCE (Valutazione Attività Amministrative), RAPPORTO BIENNALE (Rapporto sullo Stato del Sistema Universitario e della Ricerca), SPECIALIZZAZIONE (Scuole di Specializzazione), SUA (Schede Uniche Annuali), TERZA MISSIONE (Impatto Socio-economico della Ricerca), and VQR (Valutazione della Qualità della Ricerca). At the bottom of the page, there is a footer with the ANVUR logo, contact information (Via Ippolito Nievo, 35 - 00153 Roma, CF: 97653310587), and a logo for "AMMINISTRAZIONE TRASPARENTE". The date and time "14:07 15/04/2018" are visible in the bottom right corner.

To this end, the ANVUR assessment is carried out, inter alia:

- the efficiency and effectiveness of teaching, also with reference to the learning outcomes and subsequent job placement of the students
- the quality of the research products, mainly assessed through peer-reviews
- the ability to attract external funding and to activate collaborations and exchange of researchers
- the adequacy of public communication relating to educational offerings, student services, assessment results

In carrying out its activities, the Agency uses the most appropriate criteria, methods and indicators for each type of evaluation, also in reference to different disciplinary areas, taking into account those defined by the independent Commission for evaluation, transparency and integrity of public administrations, as well as experiences developed and shared nationally and internationally. The Agency prepares uniform procedures for recording students' assessment of courses; proposes the criteria for the evaluation of structures and courses of study for the purpose of periodic accreditation, the requirements for the establishment of new universities or new offices, and for the activation of study courses. It elaborates the parameters for the allocation of state loans, including the determination of the essential levels of performance and the unit costs related to specific types of services. It also assesses the efficiency of public funding programs and the results of program agreements. Finally, the Agency prepares a biennial report on the state of the university system and research: the first of these reports was made public in March 2014.

Activities carried out by ANVUR include:

- Research Quality Assessment (VQR);
- the definition of the criteria and parameters for the national scientific qualification (ASN);
- the procedures for the Self-Assessment, Periodic Evaluation and Accreditation of university study courses (AVA).

VQR

VQR – ANVUR – Agenzia Nazion...

anvur.it/en/activities/vqr/

App Collegamenti Nagios OWGM --- The unOfficial Ki... login WebMail - CNR Are... Mutua MBA - Affid... NGFW Authenticati... Apache Guacamole

anvur ITALIAN NATIONAL AGENCY FOR THE EVALUATION OF UNIVERSITIES AND RESEARCH INSTITUTES

Search...

Agency Activities Contacts

Home > Activities > VQR

VQR

Research Quality Assessment

ANVUR evaluates the quality of the outcomes of the research of the universities and research institutes, mainly through peer review, as mandated by the Presidential Decree no. 76/2010 (under art. 3, paragraph 1, letter a and paragraph 2, letter b).

The Evaluation of Research Quality (VQR) exercises aim at evaluating the research outcomes of public universities and research institutes, as well as those of private institutions that voluntarily submit their research outcomes for evaluation. Currently, VQR is carried out every five years according to the law no. 232/2016, art. 1, paragraph 339; the Minister of University and Research has to issue a special decree establishing the guidelines and providing for the resources needed to carry out the research assessment exercise.

The VQR exercises provide an up-to-date assessment of the state of research in the various scientific fields, in order to promote the improvement of research quality in the assessed institutions and to allocate the performance-based share of the *Fondo di Finanziamento Ordinario* (FFO) – the Ordinary Financing Fund for the Italian University system.

The first VQR exercise, covering the years between 2004 and 2010, took place after the issuance of the Ministerial Decree no. 17/2011. Its findings were made public in the summer of 2013. The second VQR exercise, covering the years between 2011 and 2014, took place after the issuance of the Ministerial Decree no. 458/2015 and its findings were made public in February 2017. The third VQR exercise covering the years between 2015 and 2019, has just started with the issuance of the Ministerial Decree no. 1110/2019 and its findings will be made public in October 2021.

Riferimenti

Dirigente: Marco Malgarini
Responsabile: Carmela Anna Nappi
Email: vqr@anvur.it

Activities

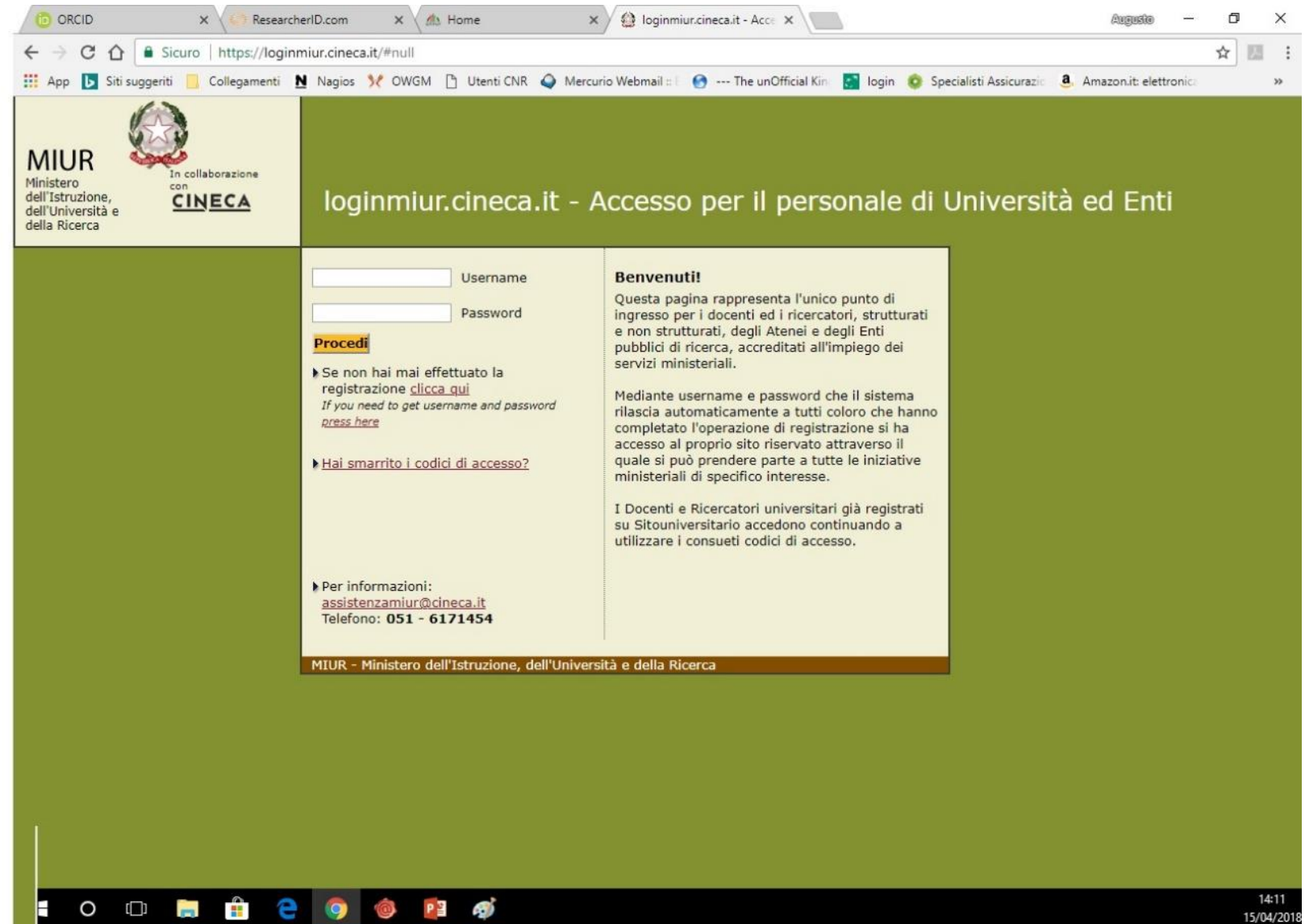
- > AFAM
- > ASN
- > AVA
- > Departments
- > Other Public Research Institutes
- > FFABR
- > Post-graduate Programmes
- > Rating of Scientific Journals
- > Third Mission / Impact
- > Performance
- > VQR

Scrive qui per eseguire la ricerca

15:56 15/06/2020

Loginmiur

- The only entry point for teachers and researchers, both structured and unstructured, of universities and public research bodies, accredited for the use of ministerial services.
- By username and password that the system automatically releases to all those who have completed the registration operation, you have access to your private site through which you can take part in all ministerial initiatives of specific interest.



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- Bandi e iniziative

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Ultimo accesso: 15/06/2020 16:01 (ip: 79.18.46.89)

Per richiedere assistenza tecnica scrivere all'indirizzo dedicato ad ogni specifico Bando o Iniziativa

Augusto PIFFERI

via Salaria Km 29,300 - Monterotondo St.
Tel: 0690672730 Fax: 0690672630
Email: augusto.pifferi@ic.cnr.it

In questa pagina sono riportati solo i link diretti ai bandi in corso. L'elenco completo dei bandi è disponibile alla sezione [Bandi e iniziative](#)

ASN 2018

ASN2018 (Modulo domanda)

ASN 2016

ASN2016 (Modulo domanda)

VQR 2011-2014

ANVUR - Valutazione della Qualità della Ricerca 2011-2014

PRIN

Programmi di Ricerca Scientifica di Rilevante Interesse Nazionale

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Ultimo accesso: 15/04/2018 14:16 (ip: 93.70.176.190)

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esperienze

Periodo	01/01/2007 - oggi	CERTIFIED
Posizione	Tecnologo presso Ente di ricerca	
Qualifica	Primo tecnologo	
Nome e indirizzo istituzione	Consiglio Nazionale delle Ricerche - Piazzale Aldo Moro, 7 - Roma	Modifica
Struttura	Istituto di cristallografia	

Periodo	01/03/1981 - oggi	CERTIFIED
Posizione	Tecnologo presso Ente di ricerca	
Qualifica	Primo tecnologo	
Nome e indirizzo istituzione	Consiglio Nazionale delle Ricerche - Piazzale Aldo Moro, 7 - Roma	Modifica
Struttura	Istituto di cristallografia	

Periodo	31/12/2006 - 31/12/2006	CERTIFIED
Posizione	Tecnologo presso Ente di ricerca	
Qualifica	Tecnologo	
Nome e indirizzo istituzione	Consiglio Nazionale delle Ricerche - Piazzale Aldo Moro, 7 - Roma	Modifica

Periodo	01/03/1981 - 31/12/2006	CERTIFIED
Posizione	Ricercatore presso Ente di ricerca	
Qualifica	Ricercatore	
Nome e indirizzo istituzione	Consiglio Nazionale delle Ricerche - Piazzale Aldo Moro, 7 - Roma	Modifica

Aggiungi

Loginmiur ORCID

The screenshot shows a web browser window with the URL <https://responsci.cineca.it/orcid-profile>. The page header includes the MIUR logo (Ministero dell'Istruzione, dell'Università e della Ricerca) and the CINECA logo (in collaborazione con). The user's name, **Augusto PIFFERI**, is displayed in a dark blue bar. Below the header, there is a list of navigation links: [Cosa è ORCID](#), [Perché utilizzare ORCID](#), [Come fare per ottenere un ORCID](#), [Ho già un ORCID, come posso associarlo](#), and [Altre domande](#). The main content area is titled "Associazione profilo ORCID" and contains the following text: "Il tuo profilo loginmiur è ora associato al seguente profilo ORCID:". Below this text, the ORCID logo is shown with the text "Connecting Research and Researchers". To the right of the logo, the user's name "Augusto Pifferi" is listed, followed by the ORCID ID orcid.org/0000-0003-0262-7723. Below the ORCID ID, it states "associazione effettuata in data 19/11/2015 14:43:55" and provides a link "per rifare l'associazione" with a "cliccare qui" button.

Loginmiur PRIN

The screenshot shows a web browser window with the URL `prin.cineca.it/php4/home/home_prin.php?username=PFFGST551&SESSION=034e01ce3d09ceb86823dd7eddd3d6dc201804151417`. The page header includes the PRIN logo and the text "Programmi di Ricerca Scientifica di Rilevante Interesse Nazionale". On the right, there is a MIUR logo and the text "in collaborazione con: CINECA".

Evidenza
Bando Prin 2017
Scadenza **29 MARZO 2018 ALLE ORE 15:00**
[Decreto Direttoriale n. 3728 del 27 dicembre 2017](#)

Informazioni utili
Publicazioni
sito pubblico
<http://prin.miur.it>

AVVISO

Si ricorda che per la partecipazione come PI per le linee di intervento Principale o Sud, Lei deve essere iscritto all'albo degli esperti scientifici MIUR, denominato REPRISE, sezione Ricerca di base. Qui di seguito trova il link al sito dell'albo con link a <https://reprise.cineca.it> Attenzione: dopo aver effettuato la registrazione a Reprise per ricerca di base, è necessario attendere un'ora prima di potersi registrare come PI.

ADESIONE BANDO 2017 - come Responsabile dell'Unità di Ricerca (21/03/2018 15:06) - accettata
(coordinatore: CURATOLA Giovanni)

Autorizzazione alla visualizzazione del progetto in compilazione e dopo la chiusura:
[PROPOSTA DI PROGETTO DI RICERCA TRIENNALE](#) autorizzazione del 28/03/2018 alle ore 17:08 - chiusa il 28/03/2018 alle ore 17:16

Per eventuali chiarimenti
di carattere tecnico: tel. 051-6171454 e-mail - prin@cineca.it
di ordine amministrativo si ricorda che il primo interlocutore è l'Ufficio ricerca dell'Ateneo, solo per problematiche irrisolte in tale sede rivolgersi agli Uffici del Ministero:
tel. 06-97727649, fax 06-97727070, e-mail - ufficioprin@miur.it

14:18
15/04/2018

Scholars evaluation

The slide features a dark green background. The title 'Scholars evaluation' is written in white, sans-serif font in the upper left quadrant. Below the title, there is a thick green horizontal bar that spans the width of the slide. Underneath this bar, there are several thin, light green and white horizontal lines that create a decorative, layered effect, extending from the left side towards the right.

H-Index

Proposed in 2005 by the physicist Jorge E. Hirsh, it is used internationally to measure the individual performance of individual authors, whose productivity and degree of incidence it quantifies through publications.

It is calculated based on the number of publications and the number of citations received: an author has H-Index equal to x , if x of his n works have received at least x citations each (for example: an author has the H-Index = 8 if he produced 8 works that were each cited at least 8 times).

How to search for it with SCOPUS (since 1996)

1. access the Scopus citation database
2. select "Autor Search" complete the fields with the author's name and start the search with "Search"
3. the following page will show a list of authors with similar names: it is necessary to check it and select only the records that exactly correspond to the author sought
4. click on "View citation overview"
5. the following page will show on the right the calculated H-Index and the link for the graph
6. if irrelevant articles are present, you can delete them by ticking them and clicking on X "Delete" to obtain the recalculated H-Index

- **How to search for it with WEB OF SCIENCE (since 1975)**

1. access the Web of Science citation database
2. in correspondence with "Author" insert the surname and the initial of the name followed by * (for example: Pifferi A *)
3. if necessary, you can delimit the period for which you want to calculate
4. click on "Search" to start the search
5. use the commands visible on the left to correctly direct the search (for example: Authors, Years, etc.) and start it again by clicking "Refine"
6. to open the page, click in the right corner on "Create Citation Report)
7. check the accuracy of the articles, removing the irrelevant ones with a tick, and click on "Go" next to the years range boxes
8. the following page will show the statistics graphs and, on the right, the calculated H-Index

G-Index

The bibliometric indicator G-Index, created by Leo Egghe, was created to give greater weight to the most cited articles.

Its formula for calculation is:

the G-index is the largest order number (when articles are classified in descending order by number of citations received) such that the first g articles have received (overall) at least g^2 citations.

the Scopus and WoS databases do not currently provide this indicator.

G-Index

TC	r	ΣTC	r ²
47	1	47	1
42	2	89	4
37	3	126	9
36	4	162	16
21	5	183	25
18	6	201	36
17	7	218	49
16	8	234	64
16	9	250	81
16	10	266	100
15	11	281	121
13	12	294	144
13	13	307	169
13	14	320	196
13	15	333	225
12	16	345	256
12	17	357	289
12	18	369	324
12	19	381	361
11	20	392	400

H-Index=13

G-Index=19

TC = total citations per article

r = rank article (number), sorted by decreasing number of citations per article

ΣTC = progressive sum of citations, starting from the article with rank equal to 1 onwards

r² = rank article (number) squared

To calculate the G-index using Scopus or WoS data

1. Query the database and retrieve all the articles published by the author
2. Sort the articles by decreasing number of citations by article
3. Export data (Num. Citations) to an excel worksheet
4. Create the rank column and raise its values to the square, thus obtaining the columns r and r² shown in the example
5. Carry out the progressive sum of the citations starting from the article with rank equal to 1, thus obtaining the ΣTC column shown in the example
6. Compare the values of r² line by line and ΣTC . The last line in which ΣTC will be greater than or equal to r² will be the row whose value of r will correspond to the G-index (line 19 in the example)

Hc-Index

The contemporary H-index has been introduced to correct some limitations of the H-index, e.g. the penalization of younger scientists and of disciplinary areas reporting a lower number of citations.

The contemporary H-index is not provided by citational databases and it has to be calculated, using the same calculation of the H-index with the addition of the following corrective formula:

$(4 \times \text{n. of document's citations}) / (\text{current year} - \text{document's publication year} + 1)$

Hc-index = contemporary H-index

1. Define a reference year (t)
2. Take all the articles published by an author based on the period to be analyzed
3. For each article, take the corresponding year of publication
4. For each article take the citations received
5. To calculate normalized citations: $(n. \text{ citations} \times 4) / (\text{reference year} - \text{year of publication of the article} + 1)$

As a consequence, the citations received in more recently published articles have a greater weight than the citations received on articles published in past years.

Obtained all the citations normalized by year of publication, we calculate the contemporary Hc-index.

The decimal results are all rounded up.

Arrange the normalized citations in a column in descending order and tile a column with the growing article number.

The contemporary H-index will be the value of column "n. article "whose subsequent value exceeds that of the "normalized citations" column

normalized citations	# article	
170	1	
80	2	
65	3	
40	4	
20	5	
10	6	Hc-Index=6
5	7	
2	8	
2	9	
1	10	

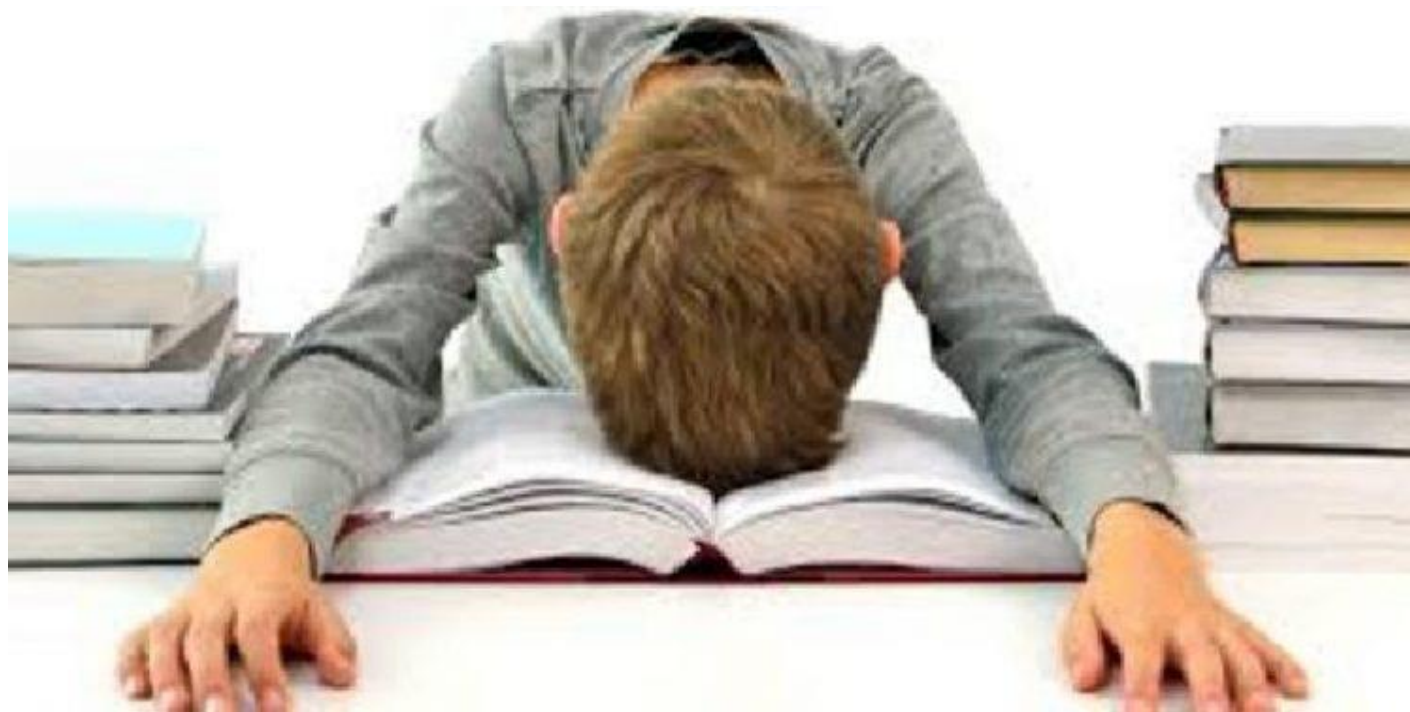
Example n. 1

- Publication year = 2010
- Citations received = 85
- Reference year 2014
- $(85 * 4) / (2014-2010) + 1 = 340/5 = 68$

Example n. 2

- Year of publication = 2013
- Citations received = 85
- Reference year = 2014
- $(85 * 4) / (2014-2013) + 1 = 340/2 = 170$

Thanks for your attention



Questions & Answer

