

# Package ‘bibliorefer’

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**Type** Package

**Title** Generator of Main Scientific References

**Version** 0.1.3

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**Description** Generates a list, with a size defined by the user, containing the main scientific references and the frequency distribution of authors and journals in the list obtained.  
The database is a dataframe with academic production metadata made available by bibliographic collections such as Scopus, Web of Science, etc.  
The temporal evolution of scientific production on a given topic is presented and ordered lists of articles are constructed by number of citations and of authors and journals by level of productivity.  
Massimo Aria, Corrado Cuccurullo. (2017) <[doi:10.1016/j.joi.2017.08.007](https://doi.org/10.1016/j.joi.2017.08.007)>.  
Caibo Zhou, Wenyan Song. (2021) <[doi:10.1016/j.jclepro.2021.126943](https://doi.org/10.1016/j.jclepro.2021.126943)>.

**License** GPL-3

**Encoding** UTF-8

**RoxygenNote** 7.3.2

**Imports** stats

**Depends** R (>= 4.4.0)

**NeedsCompilation** no

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|             |                                                                                  |
|-------------|----------------------------------------------------------------------------------|
| ajust_pagin | <i>Function of standardizing spacing between Scopus and Web of Science pages</i> |
|-------------|----------------------------------------------------------------------------------|

---

**Description**

This function adjusts the spacing between article pages to the standard bibtex format.

**Usage**

```
ajust_pagin(input_ent)
```

**Arguments**

input\_ent      input\_ent is a dataframe with the list of main scientifics references generated by the principal\_listr function

**Value**

This function returns a dataframe object containing the main list of articles, with the spacing between article pages adjusted to the standard bibtex format.

**References**

1 - Asymptotic Theory of Statistics and Probability. Anirban DasGupta. New York: Springer Science+Business Media, LLC, 2008.

2 - Quantitative science studies should be framed with middle-range theories and concepts from the social sciences Heinze, T., Jappe, A. Quantitative Science Studies, 1(3), pp. 983–992, 2020

**Examples**

```
#Call the principal_listr function
input_tam <- 100
file_db <- system.file("extdata","example_database.csv", package = "bibliorefer")
separator <- ";"
input_date <- example_database(file_db, separator)
principal_refer <- principal_listr(input_date,input_tam)

#Call the ajust_pagin function
ajust_space <- ajust_pagin(principal_refer)
```

ajust\_space

---

|              |                                                                                 |
|--------------|---------------------------------------------------------------------------------|
| arquiwos_une | <i>Function that consolidates files in BibTeX format from the WoS database.</i> |
|--------------|---------------------------------------------------------------------------------|

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## Description

The function combines the various Bibtex files from the WoS collection into a single file. The function returns a list with the sequence of grouped files and a dataframe with the final Bibtex database.

## Usage

```
arquiwos_une(arquivos)
```

## Arguments

|          |                                                                                                     |
|----------|-----------------------------------------------------------------------------------------------------|
| arquivos | is the database that contains the metadata in Bibtex format for the articles in the WoS collection. |
|----------|-----------------------------------------------------------------------------------------------------|

## Value

This function returns a dataframe containing the metadata for the articles in the WoS collection.

## References

Aria, M. & Cuccurullo, C. (2017) bibliometrix: An R-tool for comprehensive science mapping analysis, Journal of Informetrics, 11(4), pp 959-975, Elsevier

## Examples

```
#Call the aquiwos_une function

file_db <- system.file("extdata","savedrecs.bib", package = "bibliorefer")
cabec_wos = TRUE
quoaspa_wos = ""
arquivos <- entrada_wos(file_db, cabec_wos, quoaspa_wos)

#Call the aquiwos_une function
base_arquiwos <- aquiwos_une(arquivos)
base_arquiwos
```

---

 auxinf\_autr

*Function with information about scientific partnerships*


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## Description

This function generates quantitative information about the partnerships of researchers in the development of scientific production on the topic covered. The function returns a list containing 5 dataframes with information about the number of authors who wrote the articles and the number of articles written by each author, both in the general database and in the list of main references.

## Usage

```
auxinf_autr(input_date, input_tam)
```

## Arguments

|            |                                                                                             |
|------------|---------------------------------------------------------------------------------------------|
| input_date | is a dataframe with the scientific production database                                      |
| input_tam  | is the length of the dataframe to be generated with the main articles, authors and journals |

## Value

The function returns a list containing 5 dataframes with information about the number of authors who wrote the articles and the number of articles written by each author, both in the general database and in the list of main references.

## References

Digitalization as a way forward: A bibliometric analysis of 20 Years of servitization research Zhou, C., Song, W. Journal of Cleaner Production, 300, 2021.

## Examples

```
file_db <- system.file("extdata", "example_database.csv", package = "bibliorefer")
separator <- ";"
input_date <- example_database(file_db, separator)
input_tam <- 100
extra_inf <- auxinf_autr(input_date, input_tam)
extra_inf
```

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|                      |                                                                                                |
|----------------------|------------------------------------------------------------------------------------------------|
| convert_biblioscopus | <i>Function that converts the BibTeX format from the Scopus database to a CSV spreadsheet.</i> |
|----------------------|------------------------------------------------------------------------------------------------|

---

### Description

The function converts the Scopus database metadata file from Bibtex format to a CSV spreadsheet. The function's input is a file with the .bib extension. The function returns a dataframe.

### Usage

```
convert_biblioscopus(variavel1, variabel2)
```

### Arguments

|           |                                                                                                                              |
|-----------|------------------------------------------------------------------------------------------------------------------------------|
| variavel1 | is the database that contains the input and output keys for metadata in Bibtex format for articles in the Scopus collection. |
| variavel2 | is the database that contains the metadata in Bibtex format for articles in the Scopus collection.                           |

### Value

This function returns a dataframe containing the metadata for the articles in the Scopus collection.

### References

Aria, M. & Cuccurullo, C. (2017) bibliometrix: An R-tool for comprehensive science mapping analysis, Journal of Informetrics, 11(4), pp 959-975, Elsevier

### Examples

```
#Call the convert_biblioscopus function

file_db <- system.file("extdata","scopus.bib", package = "bibliorefer")
cabec = TRUE
quoaspa = ""
base_scopus <- entrada_scopus(file_db, cabec, quoaspa)
base_scopus <- as.data.frame(base_scopus)
variavel1 <- base_scopus$V1
variavel2 <- base_scopus$V2

#Call the convert_biblioscopus function
font_scopus <- convert_biblioscopus(variavel1,variavel2)
font_scopus
```

---

|                   |                                                                                             |
|-------------------|---------------------------------------------------------------------------------------------|
| convert_bibliowos | <i>Function that converts the BibTeX format from the WoS database to a CSV spreadsheet.</i> |
|-------------------|---------------------------------------------------------------------------------------------|

---

### Description

The function converts the WoS database metadata file from Bibtex format to a CSV spreadsheet. The function's input is a file with the .bib extension. The function returns a dataframe.

### Usage

```
convert_bibliowos(arquivos)
```

### Arguments

|          |                                                                                                     |
|----------|-----------------------------------------------------------------------------------------------------|
| arquivos | is the database that contains the metadata in Bibtex format for the articles in the WoS collection. |
|----------|-----------------------------------------------------------------------------------------------------|

### Value

This function returns a dataframe containing the metadata for the articles in the WoS collection.

### References

Aria, M. & Cuccurullo, C. (2017) bibliometrix: An R-tool for comprehensive science mapping analysis, Journal of Informetrics, 11(4), pp 959-975, Elsevier

### Examples

```
#Call the convert_bibliowos function

file_db <- system.file("extdata","savedrecs.bib", package = "bibliorefer")
cabec_wos = TRUE
quoaspa_wos = ""
arquivos <- entrada_wos(file_db, cabec_wos, quoaspa_wos)

#Call the convert_bibliowos function
font_wos <- convert_bibliowos(arquivos)
font_wos
```

---

**crit\_quant***Function of quantitative validation criteria*

---

**Description**

This function quantitatively validates the list of main scientific references obtained. The function input is a list object with the two dataframes generated by the `principal_lister` function. The `crit_quant` function returns a list of two dataframes with the quantitative criteria that validate the list of main scientific references obtained.

**Usage**

```
crit_quant(input_ent)
```

**Arguments**

|                        |                                                                                                                                            |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| <code>input_ent</code> | <code>input_ent</code> is a dataframe with the list of main scientifics references generated by the <code>principal_lister</code> function |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|

**Value**

The function return a list object with two dataframes with quantitative criteria that validate the list of main scientifics references

**References**

- 1 - Asymptotic Theory of Statistics and Probability. Anirban DasGupta. New York: Springer Science+Business Media, LLC, 2008.
- 2 - Quantitative science studies should be framed with middle-range theories and concepts from the social sciences Heinze, T., Jappe, A. Quantitative Science Studies, 1(3), pp. 983–992, 2020

**Examples**

```
#Call the principal_lister function
input_tam <- 100
file_db <- system.file("extdata", "example_database.csv", package = "bibliorefer")
separator <- ";"
input_date <- example_database(file_db, separator)
principal_refer <- principal_lister(input_date, input_tam)

#Call the crit_quant function
quant_validation <- crit_quant(principal_refer)
quant_validation[[1]]
quant_validation[[2]]
```

---

|                |                                                  |
|----------------|--------------------------------------------------|
| entrada_scopus | <i>Function that generates the test database</i> |
|----------------|--------------------------------------------------|

---

## Description

The `example_database` function reads a csv file available on the computer system and returns a dataframe as an example of a database to be used by the functions of the `bibliorefer` package

## Usage

```
entrada_scopus(path_date, cabec, quoaspa)
```

## Arguments

|                        |                                             |
|------------------------|---------------------------------------------|
| <code>path_date</code> | is a directory path containing the csv file |
| <code>cabec</code>     | is the header for files in bib format       |
| <code>quoaspa</code>   | is the separator for files in bib format    |

## Value

This function return is a dataframe with database

## References

Aria, M. & Cuccurullo, C. (2017) bibliometrix: An R-tool for comprehensive science mapping analysis, *Journal of Informetrics*, 11(4), pp 959-975, Elsevier

## Examples

```
#Call the example_database function

file_db <- system.file("extdata","scopus.bib", package = "bibliorefer")
cabec = TRUE
quoaspa = ""
date_sreference <- entrada_scopus(file_db, cabec, quoaspa)
date_sreference
```

---

|             |                                                  |
|-------------|--------------------------------------------------|
| entrada_wos | <i>Function that generates the test database</i> |
|-------------|--------------------------------------------------|

---

## Description

The example\_database function reads a csv file available on the computer system and returns a dataframe as an example of a database to be used by the functions of the bibliorefer package

## Usage

```
entrada_wos(path_date, cabec_wos, quoaspa_wos)
```

## Arguments

|             |                                              |
|-------------|----------------------------------------------|
| path_date   | is a directory path containing the bib file  |
| cabec_wos   | is the header for wos files in bib format    |
| quoaspa_wos | is the separator wos for files in bib format |

## Value

This function return is a dataframe with database

## References

Aria, M. & Cuccurullo, C. (2017) bibliometrix: An R-tool for comprehensive science mapping analysis, Journal of Informetrics, 11(4), pp 959-975, Elsevier

## Examples

```
#Call the example_database function

file_db <- system.file("extdata","savedrecs.bib", package = "bibliorefer")
cabec_wos = TRUE
quoaspa_wos = ""
date_wosrefer <- entrada_wos(file_db, cabec_wos, quoaspa_wos)
date_wosrefer
```

---

|                  |                                                  |
|------------------|--------------------------------------------------|
| example_database | <i>Function that generates the test database</i> |
|------------------|--------------------------------------------------|

---

### Description

The example\_database function reads a csv file available on the computer system and returns a dataframe as an example of a database to be used by the functions of the bibliorefer package

### Usage

```
example_database(path_date, separator)
```

### Arguments

|           |                                             |
|-----------|---------------------------------------------|
| path_date | is a directory path containing the csv file |
| separator | is the separator for files in csv format    |

### Value

This function return is a dataframe with database

### References

Aria, M. & Cuccurullo, C. (2017) bibliometrix: An R-tool for comprehensive science mapping analysis, Journal of Informetrics, 11(4), pp 959-975, Elsevier

### Examples

```
#Call the example_database function

file_db <- system.file("extdata","example_database.csv", package = "bibliorefer")
separator <- ";"
date_sreference <- example_database(file_db, separator)
date_sreference
```

---

|                |                                                                                                         |
|----------------|---------------------------------------------------------------------------------------------------------|
| junt_scopuswos | <i>This function converts the BibTeX format from the Scopus and WoS databases to a CSV spreadsheet.</i> |
|----------------|---------------------------------------------------------------------------------------------------------|

---

### Description

This function converts metadata files from the Scopus and WoS databases in BibTeX format to a CSV spreadsheet. The function takes .bib files from the Scopus and WoS collections as input and returns a dataframe.

**Usage**

```
junt_scopuswos(font_scopus, font_wos)
```

**Arguments**

|             |                                                                                                    |
|-------------|----------------------------------------------------------------------------------------------------|
| font_scopus | is the database that contains the metadata in Bibtex format for articles in the Scopus collection. |
| font_wos    | is the database that contains the metadata in Bibtex format for articles in the WoS collection.    |

**Value**

This function returns a dataframe containing the metadata for the articles in the Scopus and WoS collections.

**References**

Aria, M. & Cuccurullo, C. (2017) bibliometrix: An R-tool for comprehensive science mapping analysis, Journal of Informetrics, 11(4), pp 959-975, Elsevier

**Examples**

```
#Call the junt_scopuswos function

file_db <- system.file("extdata","scopus.bib", package = "bibliorefer")
cabec = TRUE
quoaspa = ""
base_scopus <- entrada_scopus(file_db, cabec, quoaspa)
base_scopus <- as.data.frame(base_scopus)
variavel1 <- base_scopus$V1
variavel2 <- base_scopus$V2

#Call the convert_biblioscopus function
font_scopus <- convert_biblioscopus(variavel1,variavel2)

#Call the convert_bibliowos function

file_db <- system.file("extdata","savedrecs.bib", package = "bibliorefer")
cabec_wos = TRUE
quoaspa_wos = ""
arquivos <- entrada_wos(file_db, cabec_wos, quoaspa_wos)

#Call the convert_bibliowos function
font_wos <- convert_bibliowos(arquivos)

#Call the junt_scopuswos function
font_scopuswos <- junt_scopuswos(font_scopus,font_wos)
font_scopuswos
```

---

|                  |                                                     |
|------------------|-----------------------------------------------------|
| principal_lister | <i>Function of principal scientifics references</i> |
|------------------|-----------------------------------------------------|

---

### Description

This function generates a list, with a size defined by the user, with the main scientific references and also generates quantitative parameters about authors and journals.

### Usage

```
principal_lister(input_date, input_tam)
```

### Arguments

|            |                                                                                             |
|------------|---------------------------------------------------------------------------------------------|
| input_date | is a dataframe with the scientific production database                                      |
| input_tam  | is the length of the dataframe to be generated with the main articles, authors and journals |

### Value

This function returns a list object with two dataframes. The first dataframe, with a length defined by the user, containing the list of articles ordered by the number of citations crossed with the lists of authors and journals ordered by the number of articles published. The second dataframe contains quantitative parameters about authors and journals that are necessary to create the quantitative validation criterion for the list obtained.

### References

A bibliometric analysis of Journal of Higher Education Management (JHEM) from 2007 to 2016. Antia-Obong, S.E., Casselden, B., Pickard, A. Library Philosophy and Practice, 2019.

### Examples

```
#Call the principal_lister function

# Example 1
input_tam <- 80
file_db <- system.file("extdata", "example_database.csv", package = "bibliorefer")
separator <- ";"
input_date <- example_database(file_db, separator)
principal_refer <- principal_lister(input_date, input_tam)
principal_refer[[1]]

# Example 2
input_tam <- 40
file_db <- system.file("extdata", "example_database.csv", package = "bibliorefer")
separator <- ";"
input_date <- example_database(file_db, separator)
principal_refer <- principal_lister(input_date, input_tam)
```

```
principal_refer[[1]]
```

---

|                               |                                                 |
|-------------------------------|-------------------------------------------------|
| <code>produc_cientific</code> | <i>Function of annual scientific production</i> |
|-------------------------------|-------------------------------------------------|

---

## Description

This function shows the evolution of scientific production. The function receives a dataframe with scientific production data and returns a dataframe with the dates and number of articles published on each date

## Usage

```
produc_cientific(input_date)
```

## Arguments

`input_date` is a dataframe with the scientific production database

## Value

The function return a dataframe with the dates and the number of articles published in each of them

## References

Evolution of number of citations per article in Materials Science: possible causes and effect on the impact factor of journals. Ariza-Guerrero, A.M, Blázquez, J.S. Scientometrics, 128(12), pp. 6589–6609. 2023.

## Examples

```
#Call the produc_cientific function
file_db <- system.file("extdata","example_database.csv", package = "bibliorefer")
separator <- ";"
input_date <- example_database(file_db, separator)
prod_ct <- produc_cientific(input_date)
prod_ct
```

---

|            |                                           |
|------------|-------------------------------------------|
| tabel_gera | <i>Function of scientific information</i> |
|------------|-------------------------------------------|

---

**Description**

This function receives a dataframe with scientific production data and returns a list object with information about articles, authors and journals.

**Usage**

```
tabel_gera(input_date)
```

**Arguments**

`input_date` is a dataframe with the scientific production database

**Value**

The function return a list object containing three dataframes with ordered lists of articles, authors and journals.

**References**

Aria, M. & Cuccurullo, C. (2017) bibliometrix: An R-tool for comprehensive science mapping analysis, Journal of Informetrics, 11(4), pp 959-975, Elsevier

**Examples**

```
#Call the tabel_gera function
file_db <- system.file("extdata","example_database.csv",package = "bibliorefer")
separator <- ";"
input_date <- example_database(file_db, separator)
scientific_inf <- tabel_gera(input_date)
scientific_inf
```

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