

# **O Mundo do factor de impacto, citações e a Acta Médica Portuguesa**

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# Agenda

- O Factor de Impacto
- O Factor de Impacto da Acta Med Port
- Porque é diferente do FI do Lancet?

# Axiomas

- O conhecimento científico diferencia-se do conhecimento pessoal na medida em que foi publicado (tornado público)
- Todas as áreas científicas publicam, ainda que com diferentes padrões e tipologias, o seu conhecimento.

# Axiomas

- Nas publicações de todas as áreas, seja qual for a tipologia dessas publicações, referenciam-se os conhecimentos aportados por outros investigadores.
- Quando um investigador quer comentar, para bem ou para mal, o trabalho de outro, cita-o. Isto é porque o trabalho daquele impactou, positiva ou negativamente, o trabalho deste segundo investigador.

# Silogismo

- **A literatura científica que mais impacta no conhecimento científico posterior é a mais citada.**
- **Nascem os indicadores de impacto**

# Índices de impacto

- **Número de citações recebidas**
  - Quantos artigos temos publicados?
- **Número de citações recebidas por artigo publicado**

# O Factor de Im

*J. Hyg.* 60, 83 (1954).  
5. D. Bodian, *Ibid.* 57, 81 (1953).  
6. This work was aided by a grant from the

*Sci.* 222,  
16. A. B. S  
*Sinai Ho*

## Citation Indexes for

A New Dimension in Documentation

through Association

Eu

"The uncritical citation of disputed data by a writer, whether it be deliberate or not, is a serious matter. Of course, knowingly propagandizing unsubstanti

approach to s  
ture of scienc  
construction,  
material that

Garfield E. Citation indexes for science; a new dimension in documentation through association of ideas. *Science*. 1955;122(3159):108-111,

so forth. In effect, the system would provide a complete listing, for the publications covered, of all the original articles that had referred to the article in question. This would clearly be particularly useful in historical research, when one is trying to evaluate the significance of a particular work and its impact on the literature and thinking of the period.

tion of terminology and nomenclature will not solve the problem of subject

Such an "impact factor" may be much more indicative than an absolute count of the number of a scientist's publications, which was used by Lehman (3) and Dennis (4). The "impact factor" is similar to the quantitative measure obtained by Gross (5) in evaluating the relative importance of scientific journals, a method later criticized by Brodman (6) but used again by Fussler (7).

# O Factor de impacto

- Para uma dada revista

$$FI_n = \frac{citações_{n-2} + citações_{n-1}}{artigos_{n-2} + artigos_{n-1}}$$

- Factor de Impacto do ano 2011:


$$FI_{2011} = \frac{citações_{2009} + citações_{2010}}{artigos_{2009} + artigos_{2010}}$$

**Citações produzidas em artigos publicados em 2011 a artigos de 2009 e 2010**



(The Lancet 2011)

**ISI Web of Knowledge<sup>SM</sup>**

**Journal Citation Reports®**

WELCOME ? HELP RETURN TO LIST NEXT JOURNAL

Journal: LANCET

Mark	Journal Title	Cited Half-life	Citing Half-life
<input type="checkbox"/>	LANCET	8.9	4.3

**Journal Impact Factor** ⓘ

Cites in 2011 to items published in: 2010 = 10244    Number of items published in: 2010 = 271  
   2009 = 10847                                 2009 = 280  
   Sum: 21091                                 Sum: 551

Calculation: Cites to recent items       $\frac{21091}{551} = \mathbf{38.278}$   
                     Number of recent items

---

**Journal Rank in Categories:** JOURNAL RANKING

**Journal Impact Factor** ⓘ

Cites in 2011 to items published in: 2010 = 10244    Number of items published in: 2010 = 271  
   2009 = 10847                                 2009 = 280  
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                     Number of recent items

# O Factor de impacto

(Acta Médica Portuguesa 2011)

Journal Citation Reports®

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PREVIOUS JOURNAL

NEXT JOURNAL

Journal: Acta Medica Portuguesa

Mark

Journal Title

1646-0758

208

0.091

0.009

115

7.1

8.0

Cited Journal

Citing Journal

Source Data

Journal Self Cites

011 JCR Science Edition

Cited Half-life

Citing Half-life

$$FI_{2011} = \frac{citações_{2009} + citações_{2010}}{artigos_{2009} + artigos_{2010}}$$

Journal Impact Factor ⓘ

Cites in 2011 to items published in: 2010 = 8

Number of items published in: 2010 = 135

2009 = 10

2009 = 62

Sum: 18

Sum: 197

Calculation:

Cites to recent items

18

= 0.091

Number of recent items

197

Journal Rank in Categories: ⓘ JOURNAL RANKING

Journal Impact Factor ⓘ

Cites in 2011 to items published in: 2010 = 8

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2009 = 10

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Sum: 18

Sum: 197

Calculation:

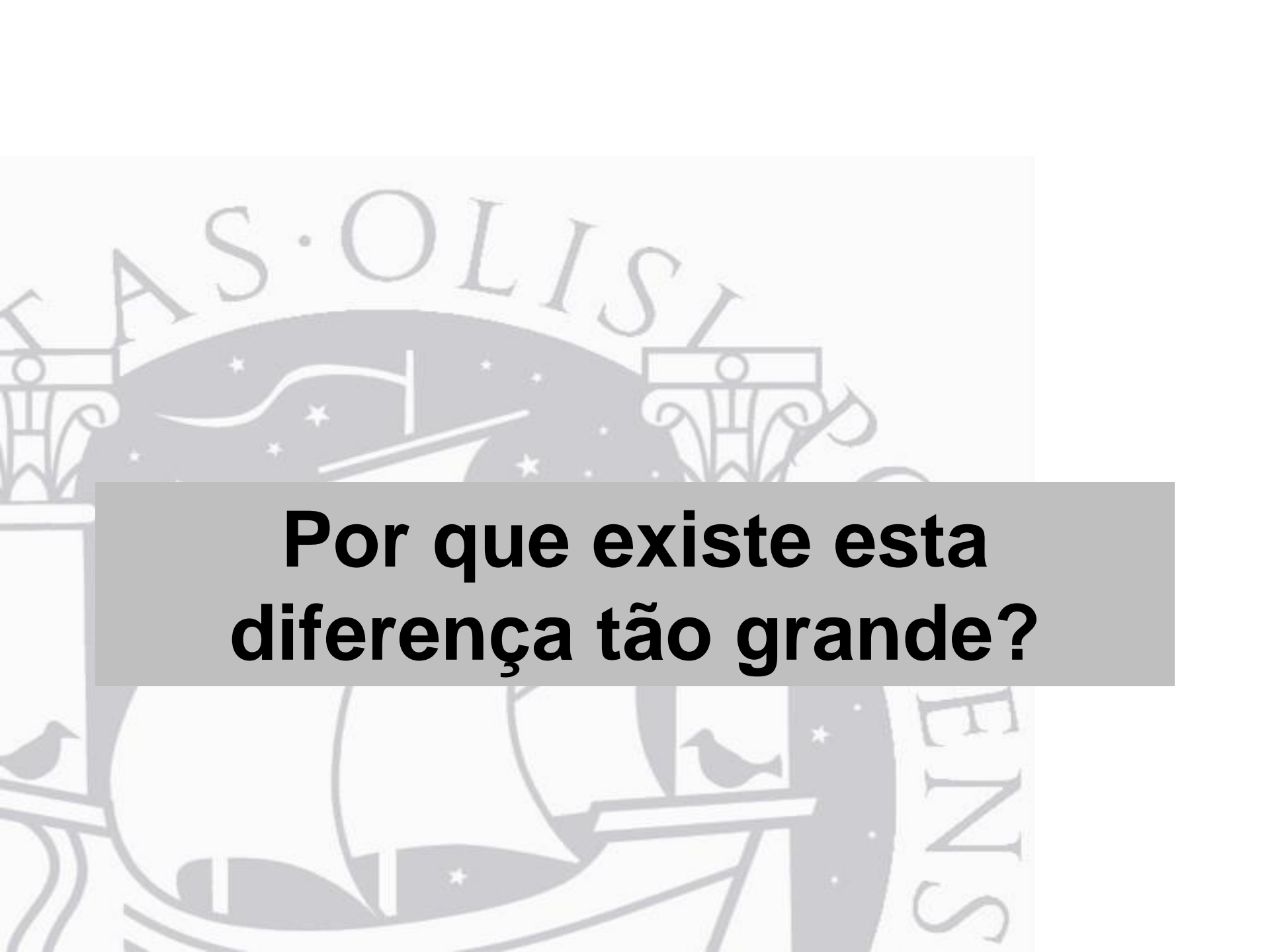
Cites to recent items

18

= 0.091

Number of recent items

197



**Por que existe esta  
diferença tão grande?**

# Factor de Impacto: Limitações

- Diferenças na obsolescência dos trabalhos entre áreas do conhecimento distintas
  - Vida média de citação (VMC):  
Mediana da antiguidade das referências de uma determinada área temática, revista ou artigo

Ciências Sociais > Ciências

Direito > Fisiologia > Química Medicinal

# Vida média de citação

Breakdown of the citations *to the journal* by the cumulative percent of 2011 cites to items published in the follo

Cited Year	2011	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001-all
# Cites from 2011	2919	10244	10847	10061	9741	7977	11469	8699	8665	8675	69609
Cumulative %	1.84	8.28	15.11	21.44	27.57	32.59	39.81	45.28	50.74	56.19	100

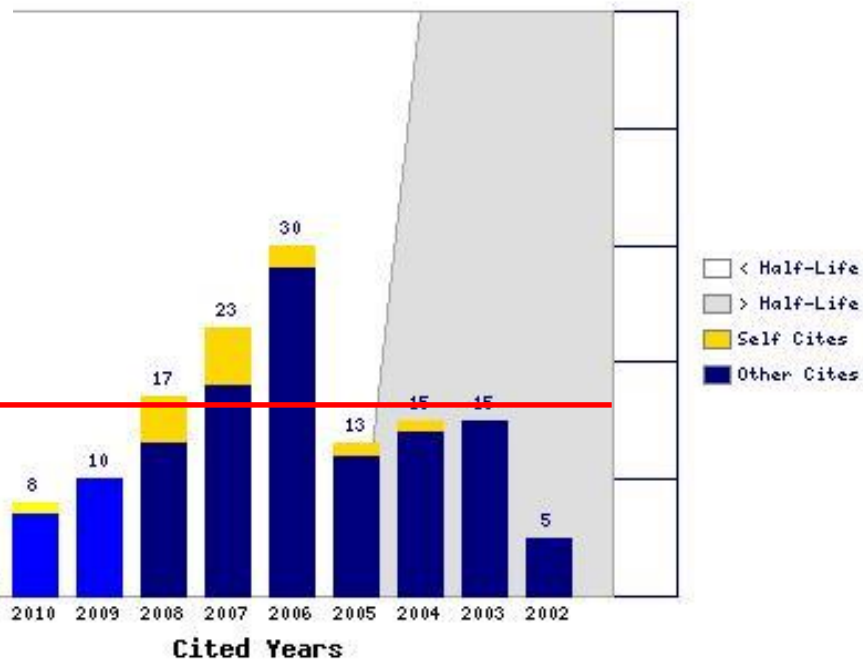
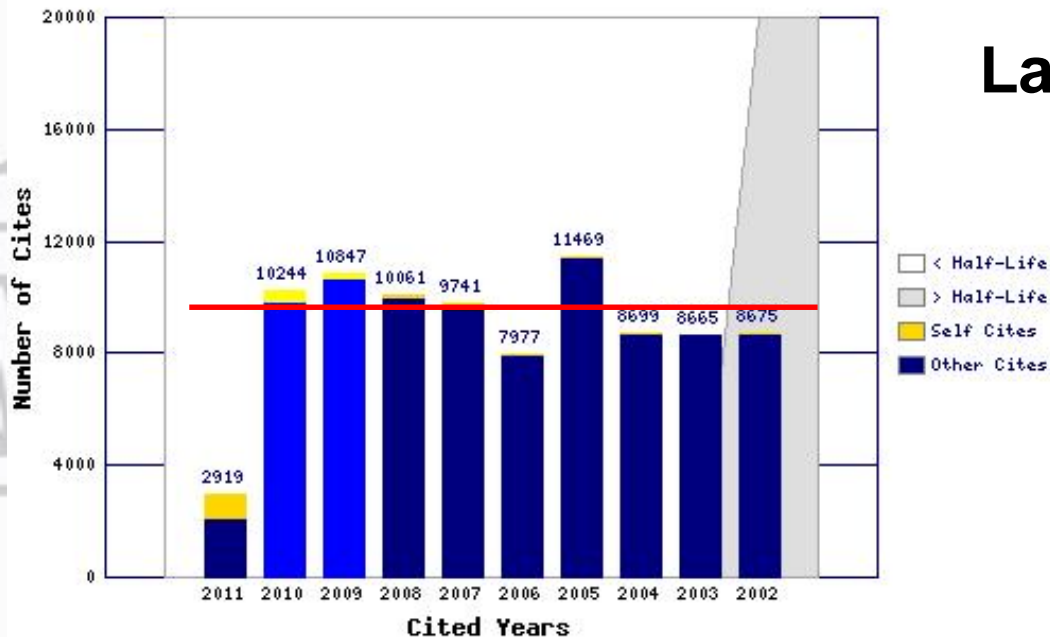
**Cited half life (Lancet) = 8,9 anos**

Breakdown of the citations *to the journal* by the cumulative percent of 2011 cites to items published in the

Cited Year	2011	2010	2009	2008	2007	2006	2005	2004	2003	2002	2001-all
# Cites from 2011	1	8	10	17	23	30	13	15	15	5	71
Cumulative %	0.48	4.33	9.13	17.31	28.37	42.79	49.04	56.25	63.46	65.87	100

**Cited half life (Acta Med Port) = 7,1 anos**

# Vida média de citação



# Factor de Impacto: Limitações

- Cobertura selectiva da WoS: fonte de onde são extraídas as referências para o cálculo de IF



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## Why Be Selective?\*

It would appear that to be comprehensive, an index of the scholarly journal literature might be expected to cover all journals published. It has been demonstrated, however, that a relatively small number of journals publish the majority of significant scholarly results. This principle is often referred to as Bradford's Law.<sup>2</sup>

### OFFICE LOCATIONS

### FREE SCIENTIFIC RESOURCES

#### Essays

- Citation-Based and Descriptor-Based Search Strategies
- Cited Title Unification
- Expected Citation Rates, Half-Life, and Impact Ratios
- Fifty years of citation indexing and analysis
- History of Citation Indexing
- How the Article Summary Interface Can Get You There
- Journal Evaluation and Source

12,000 top tier international and regional journals in every area of the natural sciences, social sciences, and arts and humanities.

But comprehensive does not necessarily mean all-inclusive.<sup>1</sup>

### Why Be Selective?\*

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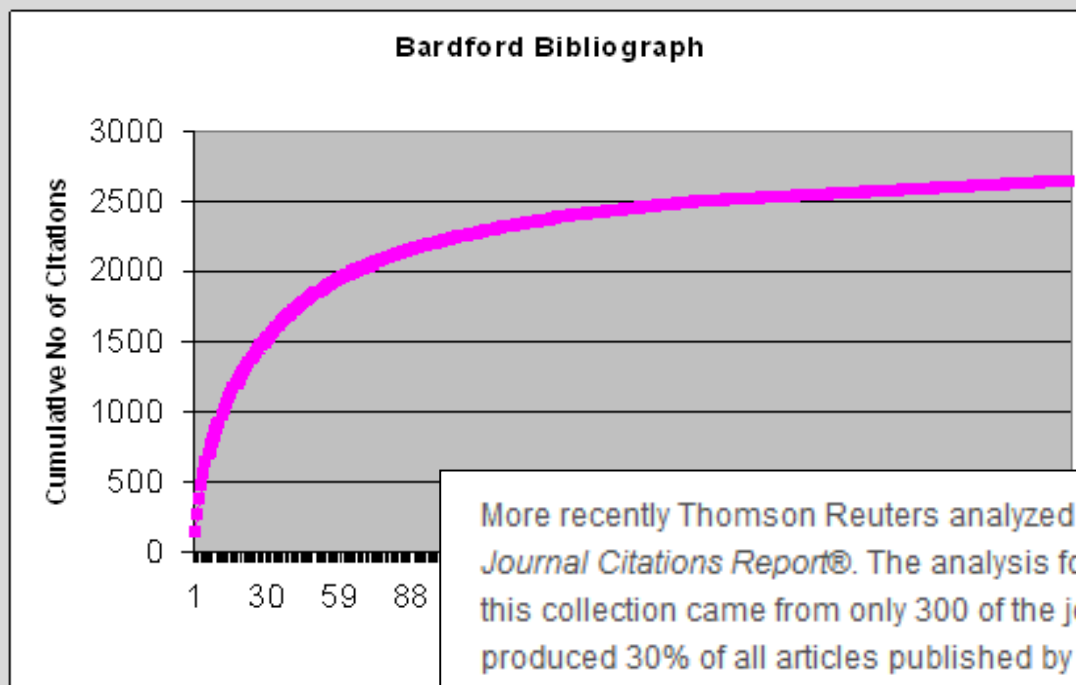
In the mid-1930's, British mathematician and librarian S.C. Bradford realized that the core literature for any given scientific discipline was composed of fewer than 1,000 journals. Of these 1,000 journals, there are relatively few with a very strong relevance to the given topic, whereas there are many with a weaker relevance to it. Those with a weak relevance to the given discipline or topic, however, typically have a strong relevance to some other discipline. Thus, the core scientific literature can form itself around various topics, with individual journals becoming more or less relevant depending on the topic. Bradford's Law states that a small number of journals

- Русский
- Română
- Türkçe
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# Factor de Impacto: Limitações

- Cobertura selectiva da WoS: fonte de onde são extraídas as referências para o cálculo de IF



More recently Thomson Reuters analyzed the 7,621 journals covered in the 2008 *Journal Citations Report®*. The analysis found that 50% of all citations generated by this collection came from only 300 of the journals. In addition, these 300 top journals produced 30% of all articles published by the total collection. Furthermore, this core is not static. Its basic composition changes constantly, reflecting the evolution of scholarly topics. Our mission is to update journal coverage in *Web of Science* by identifying and evaluating promising new journals and, whenever necessary, deleting journals that have become less useful.



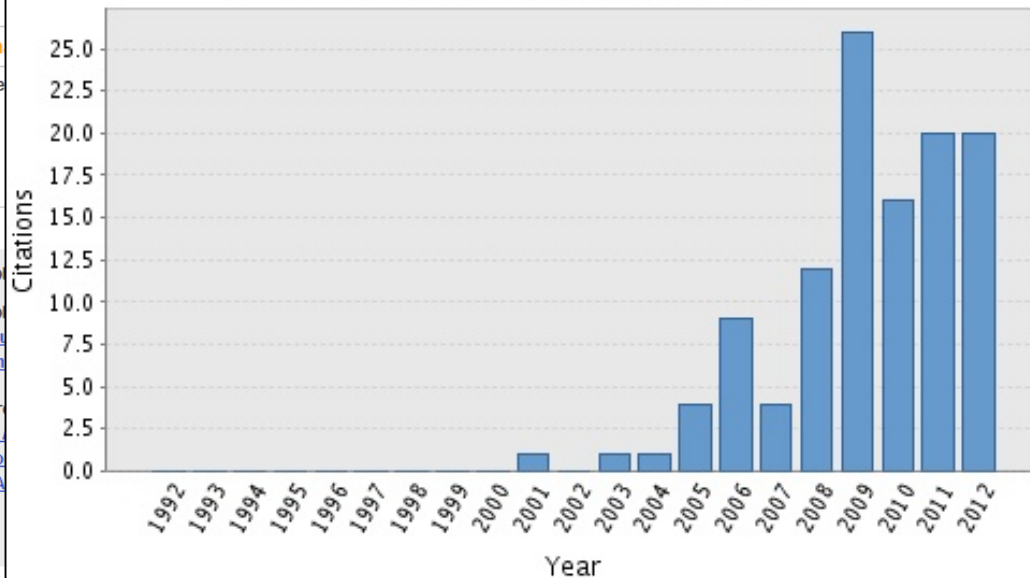
# Os meus números na WoK

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**Citation Distribution by year**



Total Articles in Publication List: 74

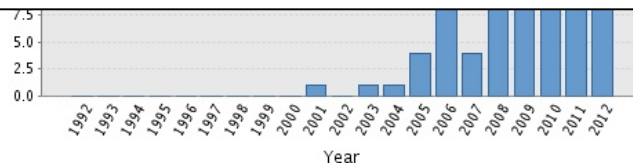
Articles With Citation Data: 61

Sum of the Times Cited: 114




Average Citations per Article: 1.87

h-index: 6

Last Updated: 11/17/2012 19:00  
GMT



# Os meus números na Scopus

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Co-authors

Web search

Subject area

Author ID

6603616312



Affiliation

University of Lisbon, Department of Social Pharmacy,  
Lisbon  
Portugal

Research

Documents

62


 View Author Evaluator |  Add to my list

References

1167


Citations

205

 View citation overview

h Index

10

 View h-Graph The h Index considers Scopus articles published from 1996 forward

Co-authors

116

Web search

197

Subject area

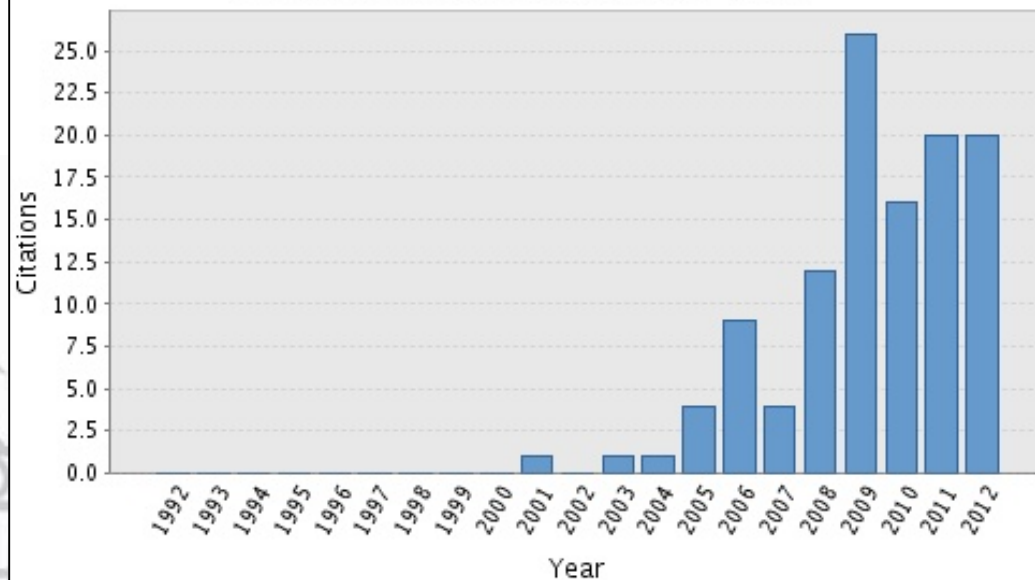
Pharmacology, Toxicology and Pharmaceuticals  
Medicine  
Nursing

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Articles in Scopus:  
(Showing the 2 most recent)  
Prats Más, R., Roig Sánchez, I.,

## Citation Distribution by year



Total Articles in Publication List: 74

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Last Updated: 11/17/2012 19:00  
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Author ID 6603616312


Affiliation University of Lisbon, Department of Social Pharmacy,  
Lisbon  
Portugal

### Research

Documents 62  View Author Evaluator |  Add to my list

References 1167

Citations 205  View citation overview

*h* Index 10  View *h*-Graph The *h* Index considers Scopus articles published from 1996 forward

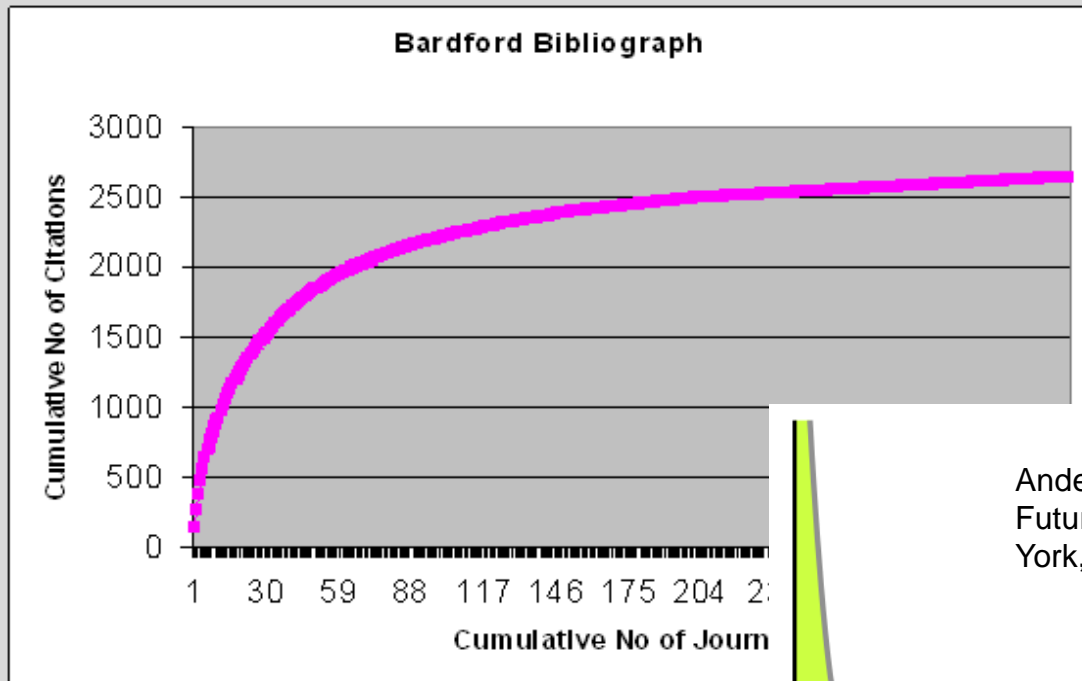
Co-authors 116

Web search 197

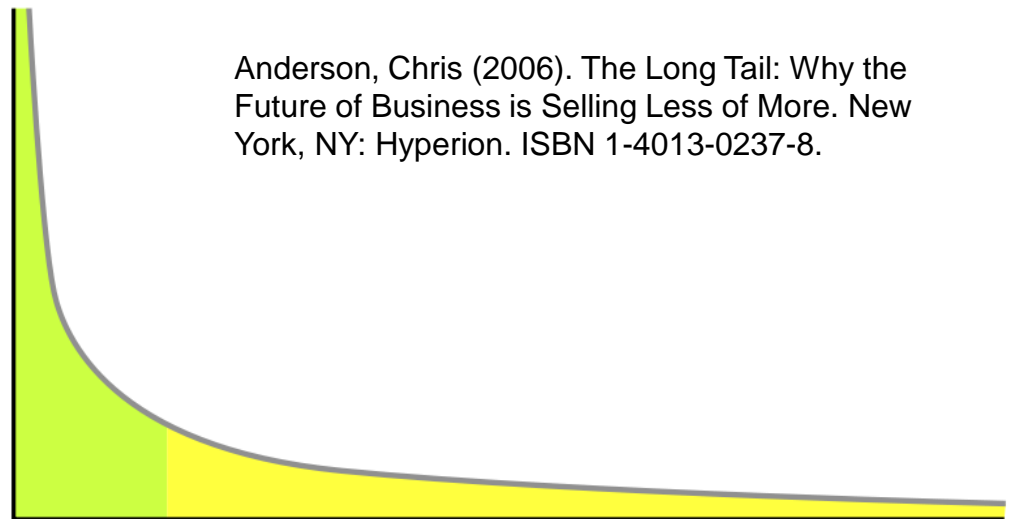
Subject area Pharmacology, Toxicology and Pharmaceutics  
Medicine  
Nursing

# Factor de Impacto: Limitações

- Cobertura selectiva da WoS: fonte de onde são extraídas as referências para o cálculo de IF



Anderson, Chris (2006). The Long Tail: Why the Future of Business is Selling Less of More. New York, NY: Hyperion. ISBN 1-4013-0237-8.



# Factor de Impacto: Limitações

- O que são ‘artigos’ para o denominador do cálculo?

**Table 3. Grading System Used in Algorithm for Determining Substantial Articles**

Information Supplied	Points Received
Author	
Anonymous	-1
One author	0
More than one author	+1
Address	
No address	0
Any address	+1
Pages	
Less than two	0
Two	+1
Three	+2
Four	+3
Five or more	+4
References	
Less than two	0
Two to four	+1
Five to eight	+2
More than eight	+3
Page overlap	
No article overlap	0
End overlaps next article	-1
Start overlaps previous article	-1
Start overlaps and end overlaps	-2

$$FI_n = \frac{citações_{n-2} + citações_{n-1}}{artigos_{n-2} + artigos_{n-1}}$$

# Artigos no Lancet?

lancet[ta] 2010[dp] - PubMed - NCBI - Mozilla Firefox

File Edit View History Bookmarks Tools Help

lancet[ta] 2010[dp] - PubMed - NCBI x Web of Knowledge [v.5.8] - Additiona... x JCR-Web 4.5 Journal Information x +

www.ncbi.nlm.nih.gov/pubmed?term=lancet[ta] 2010[dp]

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US National Library of Medicine  
National Institutes of Health

PubMed lancet[ta] 2010[dp] Search

RSS Save search Advanced Help

Show additional filters

Display Settings: Summary, 20 per page, Sorted by Recently Added

Send to: Filters: Manage Filters

Text availability  
Abstract available  
Free full text available  
Full text available

Publication dates

Results: 1 to 20 of 1542

<< First < Prev Page 1 of 78 Next > Last >>

1. [Tackling loneliness in the holidays.](#)  
[No authors listed]  
**Lancet.** 2010 Dec 18;376(9758):2042. No abstract available.  
PMID: 21188761 [PubMed - indexed for MEDLINE]

Results by year









**Journal Impact Factor**

Cites in 2011 to items published in: 2010 = 10244 Number of items published in: 2010 = 271  
2009 = 10847 2009 = 280  
Sum: 21091 Sum: 551








Calculation:  $\frac{\text{Cites to recent items}}{\text{Number of recent items}} = \frac{21091}{551} = 38.278$

# Letters to the editor

- Nature (2011)

Field: Document Types	Record Count	% of 2591	Bar Chart
EDITORIAL MATERIAL	818	31.571 %	
ARTICLE	804	31.030 %	
NEWS ITEM	401	15.477 %	
LETTER	283	10.922 %	
BOOK REVIEW	147	5.673 %	
CORRECTION	79	3.049 %	
REVIEW	37	1.428 %	
BIOGRAPHICAL ITEM	22	0.849 %	
Field: Document Types	Record Count	% of 2591	Bar Chart

- Lancet (2011)

Field: Document Types	Record Count	% of 1741	Bar Chart
EDITORIAL MATERIAL	790	45.376 %	
LETTER	532	30.557 %	
ARTICLE	261	14.991 %	
BIOGRAPHICAL ITEM	81	4.652 %	
CORRECTION	58	3.331 %	
REVIEW	15	0.862 %	
NEWS ITEM	4	0.230 %	
Field: Document Types	Record Count	% of 1741	Bar Chart

# Artigos na Acta Med Port?

acta med port[ta] 2010[dp] - PubMed - NCBI - Mozilla Firefox

File Edit View History Bookmarks Tools Help

acta med port[ta] 2010[dp] - PubMed... x Web of Knowledge [v.5.8] - Additiona... x JCR-Web 4.5 Journal Information x +

www.ncbi.nlm.nih.gov/pubmed?term=acta med port[ta] 2010[dp]

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PubMed acta med port[ta] 2010[dp] Search

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Send to: Filters: Manage Filters

Text availability  
Abstract available  
Free full text available  
Full text available

Publication dates

Results: 1 to 20 of 139

<< First < Prev Page 1 of 7 Next > Last >>

1. [\[Neuroleptic malignant syndrome: a rare long lasting case report\].](#)  
Lemos J, Mós M, Monteiro A, Henriques P.  
**Acta Med Port.** 2010 Nov-Dec;23(6):1155-9. Epub 2010 Dec 28. Portuguese.  
PMID: 21627894 [PubMed - indexed for MEDLINE] **Free Article**

Find related data  
Database: Select  
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Search details

**Journal Impact Factor**

Cites in 2011 to items published in:	2010 = 8	Number of items published in:	2010 = 135
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Calculation:	$\frac{\text{Cites to recent items}}{\text{Number of recent items}}$	$\frac{18}{197}$	= 0.091



# Por que existe esta diferença tão grande?

## Journal Impact Factor ⓘ

Cites in 2011 to items published in: 2010 = 10244    Number of items published in: 2010 = 271

Calculation:

## Será que a culpa é apenas das limitações do Factor de Impacto?

## Journal

Cites in 2

2009 = 10

Sum: 18

2009 = 62

Sum: 197

Calculation:  $\frac{\text{Cites to recent items}}{\text{Number of recent items}} = \frac{18}{197} = 0.091$

# O levantamento da hipótese

ARTIGO ORIGINAL

Acta Med Port 2010; 23: 561-566

## PRODUÇÃO CIENTÍFICA EM REVISTAS INTERNACIONAIS

Pelos Autores da Acta Médica Portuguesa

Fernando FERNANDEZ-LLIMOS, Ana Maria MENDES

O objectivo do presente trabalho é analisar a produção científica internacional recolhida na Web of Science pelos autores que publicaram trabalhos na Acta Médica Portuguesa durante o ano de 2008.

## PRODUÇÃO CIENTÍFICA EM REVISTAS INTERNACIONAIS

Pelos Autores da Acta Médica Portuguesa

- Acta Med Port publicou 78 artigos em 2008.
- 295 assinaturas de 259 autores diferentes.
- A sua produção no SCI entre 2003 e 2007 foi:
  - 94 autores (36,3%) assinaram 541 autorias em 420 artigos.
  - 5.8 artigos por autor (DP=9.8)
  - Em 249 revistas com um  $IF_{2008}=2.973$  (DP=2.92)
  - Até Junho-2009 347 artigos (82.6%) haviam recebido 5001 citações recolhidas no SCI

## PRODUÇÃO CIENTÍFICA EM REVISTAS INTERNACIONAIS

Pelos Autores da Acta Médica Portuguesa

- 420 artigos publicados indexados no SCI.
- 14,035 referências bibliográficas.
- Apenas 10 artigos (2,4%) referenciavam algum artigo da Acta Med Port.
- O total de citações à Acta Med Port foi de 10.
- Apenas 1 referência citava um artigo de 2007 ou 2008:

**0.0071%**

# A comprovação da hipótese

- Análise das referências bibliográficas de TODOS os artigos publicados em números ordinários de 11 revistas biomédicas em 2009 e 2010.

	Portugal	Brasil
<b>Medicina geral e clínica</b>	<ul style="list-style-type: none"><li>• Acta Med Port</li></ul>	<ul style="list-style-type: none"><li>• Acta Sci Health Sci</li><li>• Medicina (Ribeirão Preto)</li><li>• Rev Med Minas Gerais</li></ul>
<b>Saúde pública</b>	<ul style="list-style-type: none"><li>• Rev Port Saude Publica</li></ul>	<ul style="list-style-type: none"><li>• Rev Bras Epidemiol</li><li>• Rev Saude Publica</li></ul>
<b>Ginecologia e obstetricia</b>	<ul style="list-style-type: none"><li>• Acta Obstet Ginecol Port</li></ul>	<ul style="list-style-type: none"><li>• Rev Bras Ginec Obst</li></ul>
<b>Cirurgia</b>	<ul style="list-style-type: none"><li>• Rev Port Cir Cardiotorac Vasc</li></ul>	<ul style="list-style-type: none"><li>• Rev Bras Cardiol Invasiva</li></ul>

# Resultados

	<b>Portugal</b> (n=391)	<b>Brasil</b> (n=1038)	<b>p</b>
<b>Referenciação próprio país</b>	<b>5.4%</b> [SD=15.2]	<b>30.1%</b> [SD=30.1]	<b>**p&lt;0.001</b>
<b>Referenciação cruzada</b>	<b>3.2%</b> [SD=8,4]	<b>0.1%</b> [SD=1.4]	<b>**p&lt;0.001</b>
<b>Referenciação U.S.A.</b>	<b>48.4%</b> [SD=24.4]	<b>39.7%</b> [SD=25.9]	<b>**p&lt;0.001</b>
<b>Auto-citações</b>	<b>2.1%</b> [SD=9.3]	<b>6.0%</b> [SD=12.4]	<b>**p&lt;0.001</b>
<b>** t-test</b>			

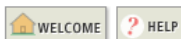
# Conclusão

- Encontrou-se um padrão de referenciação diferente nas revistas biomédicas brasileiras e portuguesas, sendo que as brasileiras têm:
  - Mais referenciação a revistas do seu próprio país
  - Menos referenciação a revistas de outro país.
  - Mais auto-citação
- Parece conveniente avaliar as implicações deste padrão diferenciado nos indicadores bibliométricos.

# Portugal e o Factor de Impacto

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Journal Citation Reports<sup>®</sup>



2011 JCR Science Edition

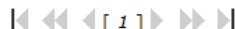
## Journal Summary List

[Journal Title Changes](#)

Journals from: **countries/territories PORTUGAL**

Sorted by: **Journal Title** [SORT AGAIN](#)

Journals 1 - 6 (of 6)



Page 1 of 1

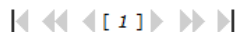
[MARK ALL](#) [UPDATE MARKED LIST](#)

*Ranking is based on your journal and sort selections.*

Mark	Rank	Abbreviated Journal Title (linked to journal information)	ISSN	JCR Data <a href="#">i</a>						Eigenfactor <sup>®</sup> Metrics <a href="#">i</a>	
				Total Cites	Impact Factor	5-Year Impact Factor	Immediacy Index	Articles	Cited Half-life	Eigenfactor <sup>®</sup> Score	Article Influence <sup>®</sup> Score
<input type="checkbox"/>	1	<a href="#">ACTA MEDICA PORT</a>	1646-0758	208	0.091		0.009	115	7.1	0.00037	
<input type="checkbox"/>	2	<a href="#">ACTA REUMATOL PORT</a>	0303-464X	186	0.547		0.227	44	3.2	0.00060	
<input type="checkbox"/>	3	<a href="#">CIENC TEC VITIVINIC</a>	0254-0223	36	0.263		0.000	9		0.00009	
<input type="checkbox"/>	4	<a href="#">PORT MATH</a>	0032-5155	237	0.300		0.125	24	>10.0	0.00072	
<input type="checkbox"/>	5	<a href="#">REV PORT PNEUMOL</a>	0873-2159	144	0.266		0.805	41	2.9	0.00029	
<input type="checkbox"/>	6	<a href="#">REVSTAT-STAT J</a>	1645-6726	60	0.125		0.071	14		0.00043	

[MARK ALL](#) [UPDATE MARKED LIST](#)

Journals 1 - 6 (of 6)



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## NOTA EDITORIAL

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# Contamos contigo. ¿Contamos también con tus citas?

(We are counting on you –can we count on your citations as well?)

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**H**ace unos años una Carta al Director de GACETA SANITARIA presentaba un «ejercicio» sobre la evolución reciente del factor de impacto bibliográfico (FI) en el campo de la salud pública y la epidemiología<sup>1</sup>: qué revistas tenían el mayor FI, cómo habían ascendido o descendido en ese ránking, cómo se incorporaban las revistas a esa lista privilegiada... En un último párrafo se hacía notar la ausencia de revistas españolas en esa lista, es decir, la falta de FI nú-

cuento de trabajos publicados a lo largo de toda la vida profesional en revistas incluidas en el Science Citation Index® (SCI), la suma de sus FI y el cómputo del FI medio por artículo... (¿es razonable calcular la media por artículo de la puntuación del FI?). Son ejemplos de la trampa en la que hemos caído (¿a la que nos hemos lanzado?). Este simple índice bibliométrico, afectado por diferentes sesgos<sup>6,7</sup>, ha tomado en España y en otros muchos países un significado casi mágico. El FI es uti-

Fernández E, Plasència A. [We are counting on you--can we count on your citations as well?]. Gac Sanit. 2002 Jul-Aug;16(4):288-90.