DIGITAL APPENDIX

**Fig. 1.** Percentage of publications and number of journals from Ecuador (1920-2017), by Web of Science categories.

**Fig. 2.** Publication trends of the top five Web of Science categories.

**Fig. 3.** Number of articles and citations per publication by year.

**Fig. 4.** Development trend of articles and their citations per publication during 1980 and 2017.

**Fig. 5.** Development trend of articles and their citations per publication during 1920 and 2008.

**Fig. 6.** Characteristics of publication type and their citations per publication.*TP*: total articles, *NFR*: both first and corresponding authors are not from Ecuador, *NR*: corresponding author is not from Ecuador, *NF*: first author is not from Ecuador, *IC*: internationally collaborative articles, *NC*: nationally collaborative articles, *II*: institutional independent articles, *CI*: Ecuador independent articles, *FP*: first author is from Ecuador, *RP*: corresponding author is from Ecuador, *FR*: both first and corresponding authors are from Ecuador.

TABLE 1

Characteristics of document type

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Document type | TP | % | AU | APP | *TC*2017 | *CPP*2017 |
| Article | 7 806 | 81 | 558 518 | 72 | 119 313 | 15 |
| Meeting abstract | 914 | 9.5 | 6 158 | 6.7 | 113 | 0.12 |
| Review | 399 | 4.1 | 3 506 | 8.8 | 10 859 | 27 |
| Letter | 243 | 2.5 | 1 101 | 4.5 | 961 | 4.0 |
| Proceedings paper | 198 | 2.1 | 1 112 | 5.6 | 3 351 | 17 |
| Editorial material | 165 | 1.7 | 715 | 4.3 | 944 | 5.7 |
| Note | 74 | 0.77 | 254 | 3.4 | 936 | 13 |
| Correction | 31 | 0.32 | 6 057 | 195 | 21 | 0.68 |
| Book chapter | 13 | 0.13 | 73 | 5.6 | 805 | 62 |
| News item | 13 | 0.13 | 69 | 5.3 | 17 | 1.3 |
| Biographical-item | 5 | 0.052 | 9 | 1.8 | 0 | 0 |
| Book review | 3 | 0.031 | 3 | 1.0 | 0 | 0 |
| Reprint | 3 | 0.031 | 7 | 2.3 | 56 | 19 |
| Data paper | 2 | 0.021 | 48 | 24 | 5 | 2.5 |
| Discussion | 1 | 0.010 | 5 | 5.0 | 0 | 0 |
| Item about an individual | 1 | 0.010 | 1 | 1.0 | 0 | 0 |

*TP*: number of publications: Randomised publications; *AU*: number of authors; *APP*: number of authors per publication; *TC*2017: the total number of citations from Web of Science Core Collection since publication to the end of 2017; *CPP*2017: number of citations (*TC*2017) per publication (*TP*).

TABLE 2

Top ten most productive journals

|  |  |  |  |
| --- | --- | --- | --- |
| Journal | *TP* (%) | *IF*2017 | Web of Science category |
| Physical Review Letters | 194 (2.5) | 8.839 | multidisciplinary physics |
| Physical Review D | 161 (2.1) | 4.394 | astronomy and astrophysics  particles and fields physics |
| PLoS One | 148 (1.9) | 2.766 | multidisciplinary sciences |
| Physics Letters B | 126 (1.6) | 4.254 | astronomy and astrophysics  nuclear physics  particles and fields physics |
| Revista Ecuatoriana De Neurología | 99 (1.3) | N/A | neurosciences |
| Zootaxa | 95 (1.2) | 0.931 | zoology |
| American Journal of Tropical Medicine and Hygiene | 87 (1.1) | 2.564 | public, environmental and occupational health  tropical medicine |
| Ornitologia Neotropical | 84 (1.1) | 0.200 | ornithology |
| IEEE Latin America Transactions | 74 (0.95) | 0.502 | information systems computer science  electrical and electronic engineering |
| Journal of High Energy Physics | 54 (0.69) | 5.541 | particles and fields physics |

*TP* (%): rank and the percentage of number of articles; *IF*2017: impact factor in 201

TABLE 3

Top 13 articles with *TC*2017 > 450

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Rank  (*TC*2017) | Rank  (*C*2017) | Article titles | Countries | References |
| 1 (1 828) | 1 (306) | Preexposure chemoprophylaxis for HIV prevention in men who have sex with men | USA, Peru, Ecuador, Brazil, Thailand, South Africa | Grant et al. (2010) |
| 2 (1 229) | 5 (152) | *G*ST and its relatives do not measure differentiation | Ecuador | Jost (2008) |
| 3 (836) | 17 (64) | Widespread amphibian extinctions from epidemic disease driven by global warming | Costa Rica, Ecuador, USA, Japan, Venezuela, Canada | Pounds et al. (2006) |
| 4 (741) | 33 (46) | Beta-diversity in tropical forest trees | USA, France, Peru, Ecuador | Condit et al. (2002) |
| 5 (711) | 3 (261) | Antibiotic resistance-the need for global solutions | Sweden, USA, India, South Africa, Pakistan, UK, Thailand, Belgium, Argentina, Switzerland, Tanzania, Ecuador, Kenya, Canada | Laxminarayan et al. (2013) |
| 6 (699) | 7 (93) | Drought Sensitivity of the Amazon Rainforest | UK, Peru, Brazil, USA, Bolivia, Venezuela, Netherlands, France, Colombia, Australia, Ecuador, Germany, Panama | Phillips et al. (2009) |
| 7 (619) | 13 (83) | The status of the world’s land and marine mammals: Diversity, threat, and knowledge | Switzerland, USA, Italy, UK, Argentina, Kenya, Philippines, Australia, Germany, Brazil, Canada, South Africa, Uruguay, Costa Rica, New Zealand, India, Japan, Madagascar, Norway, Belgium, Mexico, China, Ecuador, Poland, Russia | Schipper et al. (2008) |
| 8 (520) | 25 (56) | One-third of reef-building corals face elevated extinction risk from climate change and local impacts | USA, Indonesia, Ecuador, Costa Rica, Australia, UK, Panama, Netherlands, Philippines, Fiji, Kenya | Carpenter et al. (2008) |
| 9 (508) | 6 (127) | Global human footprint on the linkage between biodiversity and ecosystem functioning in reef fishes | Canada, USA, Mexico, Ecuador, Australia, Colombia, Israel, France, Costa Rica, Venezuela, Germany, UK, Panama, Papua N Guinea, Japan, Spain, Malaysia | Mora et al. (2011) |
| 10 (495) | 13 (83) | The impact of conservation on the status of the world’s vertebrates | UK, USA, Canada, Switzerland, Philippines, Australia, India, France, Argentina, Italy, Russia, New Zealand, Indonesia, Costa Rica, Colombia, South Africa, Brazil, Taiwan, Germany, Japan, Madagascar, Singapore, Norway, Venezuela, China, Belgium, Tanzania, Mexico, Poland, Iran, Peru, Ecuador, South Korea, Chile, Kenya, U Arab Emirates | Hoffmann et al. (2010) |
| 11 (490) | 592 (6) | The upgraded DO detector | Argentina, Brazil, Canada, China, Colombia, Czech Republic, Ecuador, France, Germany, India, Ireland, South Korea, Mexico, Netherlands, Russia, Sweden, UK, USA, Byelarus, Poland, Switzerland | Abazov et al. (2006) |
| 12 (489) | 31 (48) | Comparative evaluation of 11 essential oils of different origin as functional antioxidants, antiradicals and antimicrobials in foods | Italy, Ecuador | Sacchetti et al. (2005) |
| 13 (468) | 43 (38) | Effect of intravenous corticosteroids on death within 14 days in 10008 adults with clinically significant head injury (MRC CRASH trial): Randomised placebo-controlled trial | UK, Albania, Argentina, Australia, Austria, Belgium, Brazil, Chile, China, Colombia, Mexico, Cuba, Czech Republic, Ecuador, Egypt, Rep of Georgia, Germany, Ghana, Greece, India, Indonesia, Iran, Ireland, Italy, Cote Ivoire, Kenya, Malaysia, New Zealand, Nigeria, Pakistan, Panama, Paraguay, Peru, Romania, Saudi Arabia, Serbia, Singapore, Slovakia, South Africa, Spain, Sri Lanka, France, Switzerland, Thailand, Tunisia, Turkey, Uganda | Muzha et al. (2004) |

*TC*2017: number of citations since publication to the end of 2017 from Web of Science Core Collection; *C*2017: number of citations in 2017 only.

TABLE 4

Top 20 most collaborative countries

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Country | TP | *TPR* (%) | *FPR* (%) | *RPR* (%) | *CPP*2017 |
| USA | 2 872 | 1 (37) | 1 (17) | 1 (17) | 24 |
| Spain | 1 582 | 2 (20) | 2 (8.8) | 2 (9.0) | 11 |
| UK | 1 218 | 3 (16) | 5 (3.1) | 5 (3.1) | 31 |
| France | 1 197 | 4 (15) | 3 (3.8) | 3 (3.8) | 26 |
| Brazil | 1 187 | 5 (15) | 7 (2.5) | 7 (2.5) | 28 |
| Germany | 1 129 | 6 (14) | 6 (2.9) | 6 (3.0) | 24 |
| Mexico | 1 061 | 7 (14) | 10 (1.9) | 10 (2.0) | 23 |
| Colombia | 989 | 8 (13) | 16 (1.0) | 16 (1.0) | 27 |
| China | 702 | 9 (9.0) | 24 (0.50) | 23 (0.51) | 29 |
| India | 682 | 10 (8.7) | 36 (0.12) | 36 (0.12) | 31 |
| Netherlands | 657 | 11 (8.4) | 17 (1.0) | 17 (1.0) | 31 |
| Argentina | 653 | 12 (8.4) | 11 (1.8) | 11 (1.8) | 35 |
| Russia | 611 | 13 (7.8) | 4 (3.6) | 4 (3.7) | 29 |
| South Korea | 602 | 14 (7.7) | 32 (0.17) | 32 (0.17) | 27 |
| Czech Republic | 590 | 15 (7.6) | 41 (0.064) | 41 (0.07) | 27 |
| Canada | 565 | 16 (7.2) | 14 (1.3) | 14 (1.3) | 38 |
| Italy | 551 | 17 (7.1) | 8 (2.4) | 8 (2.4) | 22 |
| Sweden | 525 | 18 (6.7) | 22 (0.55) | 24 (0.50) | 35 |
| Ireland | 522 | 19 (6.7) | 46 (0.038) | 46 (0.04) | 27 |
| Belgium | 485 | 20 (6.2) | 8 (2.4) | 8 (2.4) | 18 |

*TP*: total number of collaborative articles with Ecuador; *TPR* (%): rank total number of collaborative articles with Ecuador and the percentage of total articles; *FPR* (%): rank and the percentage of first author articles; *RPR* (%): rank and the percentage of the corresponding authored articles; *CPP*2017: number of citations (*TC*2017) per publication (*TP*).

TABLE 5

Top 10 productive institutions

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Institute | TP | *TPR* (%) | *IPR* (%) | *CPR* (%) | *FPR* (%) | *RPR* (%) | *SPR* (%) | *CPP*2017 | |
| Universidad San Francisco de Quito | 1 127 | 1 (14) | 8 (3.2) | 1 (16) | 4 (1.8) | 4 (1.3) | 8 (2.7) | 18 |
| Pontificia Universidad Católica del Ecuador | 757 | 2 (10) | 1 (11) | 2 (10) | 1 (3.1) | 1 (2.5) | 1 (12) | 19 |
| Escuela Politécnica Nacional | 619 | 3 (7.9) | 3 (7.0) | 6 (8.0) | 2 (2.3) | 3 (1.6) | 2 (9.0) | 13 |
| Escuela Super Politécnica Litoral | 389 | 4 (5.0) | 7 (3.6) | 67 (5.1) | 5 (1.5) | 8 (0.68) | 11 (1.8) | 11 |
| Universidad Técnica Particular Loja | 368 | 5 (4.7) | 2 (8.6) | 80 (4.3) | 3 (2.1) | 2 (2.0) | 4 (3.6) | 7 |
| Charles Darwin Research Station | 354 | 6 (4.5) | 4 (4.5) | 77 (4.5) | 7 (1.2) | 7 (0.70) | 3 (8.1) | 21 |
| Universidad Central del Ecuador | 326 | 7 (4.2) | 14 (1.7) | 79 (4.4) | 8 (0.92) | 12 (0.53) | 13 (1.5) | 15 |
| Universidad de Cuenca | 267 | 8 (3.4) | 15 (1.5) | 91 (3.6) | 9 (0.86) | 6 (0.85) | 19 (0.90) | 17 |
| Universidad de las Fuerzas Armadas ESPE | 253 | 9 (3.2) | 4 (4.5) | 102 (3.1) | 6 (1.3) | 5 (1.0) | 10 (2.4) | 4.5 |
| Universidad Católica Santiago de Guayaquil | 159 | 10 (2.0) | 10 (2.1) | 151 (2.0) | 11 (0.65) | 11 (0.54) | 25 (0.60) | 13 |

*TP*: total number of articles; *TPR* (%): rank and percentage of total articles; *IPR* (%): rank and percentage of single institute articles; *CPR* (%): rank and percentage of inter-institutionally collaborative articles; *FPR* (%): rank and the percentage of first author articles; *RPR* (%): rank and the percentage of the corresponding authored articles; *SPR* (%): rank and percentage of single author articles; *CPP*2017: number of citations (*TC*2017) per publication (*TP*).