

## DIGITAL APENDIX: ADDITIONAL REFERENCES

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## Digital Appendix 1: Tables

Table 1. Citations and authors according to document type.

| Document type            | <i>TP</i> | %     | <i>TC</i> 2016 | <i>CPP</i> <sub>2016</sub> | <i>AU</i> | <i>AU/TP</i> |
|--------------------------|-----------|-------|----------------|----------------------------|-----------|--------------|
| Article                  | 2 380     | 65    | 44 498         | 19                         | 17 696    | 7.4          |
| Meeting abstract         | 832       | 23    | 273            | 0.33                       | 4 972     | 6.0          |
| Letter                   | 160       | 4.4   | 389            | 2.4                        | 430       | 2.7          |
| Review                   | 112       | 3.1   | 2 665          | 24                         | 626       | 5.6          |
| Proceedings paper        | 109       | 3.0   | 2 251          | 21                         | 523       | 4.8          |
| Editorial material       | 77        | 2.1   | 520            | 6.8                        | 408       | 5.3          |
| Note                     | 54        | 1.5   | 494            | 9.1                        | 178       | 3.3          |
| Biographical-item        | 5         | 0.14  | 0              | 0                          | 9         | 1.8          |
| Correction               | 5         | 0.14  | 1              | 0.20                       | 51        | 10           |
| Book review              | 3         | 0.083 | 0              | 0                          | 3         | 1.0          |
| News item                | 3         | 0.083 | 20             | 6.7                        | 13        | 4.3          |
| Book chapter             | 1         | 0.028 | 0              | 0                          | 1         | 1.0          |
| Discussion               | 1         | 0.028 | 0              | 0                          | 1         | 1.0          |
| Item about an individual | 1         | 0.028 | 0              | 0                          | 3         | 3.0          |
| Retraction               | 1         | 0.028 | 0              | 0                          | 2         | 2.0          |

*TP*: number of articles; *AU*: number of authors; *TC*<sub>2016</sub>: total citations since publication to the end of 2016; *CPP*<sub>2016</sub>: citations per paper (*TC*<sub>2016</sub>/*TP*).

Table 2. Citations and authors according to document language.

| Language   | <i>TP</i> | %     | <i>TC</i> <sub>2016</sub> | <i>CPP</i> <sub>2016</sub> | <i>AU</i> | <i>AU/TP</i> |
|------------|-----------|-------|---------------------------|----------------------------|-----------|--------------|
| English    | 2 124     | 89    | 43 765                    | 21                         | 16 768    | 7.9          |
| Spanish    | 241       | 10    | 663                       | 2.8                        | 866       | 3.6          |
| French     | 12        | 0.50  | 55                        | 4.6                        | 54        | 4.5          |
| Portuguese | 2         | 0.084 | 5                         | 2.5                        | 5         | 2.5          |
| German     | 1         | 0.042 | 10                        | 10                         | 3         | 3.0          |

*TP*: number of articles; *AU*: number of authors; *TC*<sub>2016</sub>: total citations since publication to the end of 2016; *CPP*<sub>2016</sub>: citations per paper (*TC*<sub>2016</sub>/*TP*).

Table 3. Web of Science category.

| Web of Science category                       | TP  | %   | No. Journals |
|---|-----|-----|--------------|
| Nutrition and Dietetics                       | 498 | 21  | 81           |
| Public, Environmental and Occupational Health | 299 | 13  | 176          |
| Tropical Medicine                             | 192 | 8.1 | 19           |
| Pediatrics                                    | 147 | 6.2 | 121          |
| Infectious Diseases                           | 132 | 5.5 | 84           |
| Food Science and Technology                   | 125 | 5.3 | 129          |
| Plant Sciences                                | 102 | 4.3 | 211          |
| Parasitology                                  | 89  | 3.7 | 36           |
| Immunology                                    | 87  | 3.7 | 150          |
| Pharmacology and Pharmacy                     | 84  | 3.5 | 256          |
| Microbiology                                  | 78  | 3.3 | 124          |
| Entomology                                    | 76  | 3.2 | 91           |
| Agronomy                                      | 71  | 3.0 | 83           |
| Multidisciplinary Sciences                    | 65  | 2.7 | 64           |
| Environmental Sciences                        | 64  | 2.7 | 229          |
| Obstetrics and Gynecology                     | 62  | 2.6 | 80           |
| Biotechnology and Applied Microbiology        | 61  | 2.6 | 158          |
| General and Internal Medicine                 | 56  | 2.4 | 154          |
| Oncology                                      | 55  | 2.3 | 217          |
| Applied Chemistry                             | 52  | 2.2 | 72           |
| Dentistry, Oral Surgery and Medicine          | 52  | 2.2 | 90           |

TP: number of articles

Table 4. Journals.

| Journals   | TP (%)    | IF <sub>2016</sub> | Web of Science categories  |
|--|-----------|--------------------|--|
| Archivos Latinoamericanos de Nutricion                             | 160 (6.7) | 0.459              | Nutrition and Dietetics  |
| American Journal of Clinical Nutrition                             | 99 (4.2)  | 6.926              | Nutrition and Dietetics  |
| American Journal of Tropical Medicine and Hygiene                  | 92 (3.9)  | 2.549              | Public, Environment and<br>Tropical Medicine   |
| Journal of Nutrition   | 43 (1.8)  | 4.145              | Nutrition and Dietetics  |
| Plos One   | 36 (1.5)  | 2.806              | Multidisciplinary Sciences   |
| Turrialba  | 26 (1.1)  | N/A                | Agronomy   |
| European Journal of Clinical Nutrition                             | 20 (0.84) | 3.057              | Nutrition and Dietetics  |
| Journal of Ethnopharmacology                                       | 20 (0.84) | 2.981              | Plant Sciences<br>Chemistry, Medicinal<br>Integrative and Complementary<br>Pharmacology and Phytotherapy |
| Ecology of Food and Nutrition                                      | 19 (0.8)  | 0.922              | Nutrition and Dietetics  |
| Boletin de la Oficina Sanitaria Panamericana                       | 18 (0.76) | N/A                | Public, Environment and<br>Tropical Medicine   |
| Food and Nutrition Bulletin  | 18 (0.76) | 1.648              | Food Science and Technology<br>Nutrition and Dietetics   |
| Journal of Pediatric Gastroenterology and Nutrition                | 18 (0.76) | 2.799              | Gastroenterology and<br>Nutrition and Dietetics<br>Pediatrics  |
| Transactions of the Royal Society of Tropical Medicine and Hygiene | 18 (0.76) | 2.279              | Public, Environment and<br>Tropical Medicine   |
| Reproductive Health  | 17 (0.71) | 2.209              | Public, Environment and<br>Tropical Medicine   |
| Florida Entomologist   | 16 (0.67) | 0.964              | Entomology   |
| Journal of Food Science  | 16 (0.67) | 1.815              | Food Science and Technology  |
| Nutrition Research   | 16 (0.67) | 2.737              | Nutrition and Dietetics  |
| American Journal of Physical Anthropology                          | 15 (0.63) | 2.552              | Anthropology<br>Evolutionary Biology   |
| Journal of Infectious Diseases                                     | 15 (0.63) | 6.273              | Immunology   |

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*TP*: number of articles; *IF<sub>2016</sub>*: impact fact in 2016; N/A: not available

Table 5. Country

| Country     | <i>TP</i> | <i>TP R (%)</i> | <i>FP R (%)</i> | <i>RP R (%)</i> |
|-------------|-----------|-----------------|-----------------|-----------------|
| USA         | 1 176     | 1 (49)          | 1 (33)          | 1 (32)          |
| Mexico      | 280       | 2 (12)          | 2 (3.7)         | 2 (3.9)         |
| UK          | 167       | 3 (7.0)         | 4 (2.3)         | 4 (2.5)         |
| Brazil      | 140       | 4 (5.9)         | 5 (2.0)         | 5 (2.0)         |
| Costa Rica  | 126       | 5 (5.3)         | 10 (1.0)        | 10 (1.1)        |
| Spain       | 125       | 6 (5.3)         | 3 (3.0)         | 3 (3.3)         |
| Argentina   | 119       | 7 (5.0)         | 14 (0.80)       | 14 (0.82)       |
| Colombia    | 104       | 8 (4.4)         | 10 (1.0)        | 10 (1.1)        |
| Germany     | 97        | 9 (4.1)         | 6 (1.6)         | 6 (1.7)         |
| Canada      | 86        | 10 (3.6)        | 7 (1.4)         | 7 (1.5)         |
| France      | 83        | 11 (3.5)        | 8 (1.1)         | 8 (1.2)         |
| El Salvador | 80        | 12 (3.4)        | 37 (0.042)      | 37 (0.046)      |
| Chile       | 72        | 13 (3.0)        | 18 (0.46)       | 17 (0.55)       |
| Honduras    | 70        | 14 (2.9)        | 21 (0.25)       | 20 (0.27)       |
| Peru        | 68        | 15 (2.9)        | 32 (0.084)      | 30 (0.092)      |
| India       | 67        | 16 (2.8)        | 32 (0.084)      | 30 (0.092)      |
| Italy       | 64        | 17 (2.7)        | 13 (0.84)       | 13 (0.87)       |
| Netherlands | 63        | 18 (2.6)        | 16 (0.67)       | 15 (0.73)       |
| Switzerland | 61        | 19 (2.6)        | 12 (0.92)       | 12 (0.92)       |
| Panama      | 56        | 20 (2.4)        | 25 (0.21)       | 23 (0.23)       |

*TP*: number of articles; *FP*: number of first author articles; *TP*: number of corresponding author articles; *R*: rank

Table 6. Institutions in Guatemala.

| Institute   |     | TP<br>(%)            | TP R<br>(%)                  | SP R<br>(%)          | CP R<br>(%) | FP R (%)  | RP R (%) |
|---|-----|----------------------|------------------------------|----------------------|-------------|-----------|----------|
| Instituto de Nutrición de Centro América y Panamá (INCAP)                         | 602 | 1 (25)               | 1 (53)                       | 2 (17)               | 1 (16)      | 1 (16)    |          |
| Universidad de San Carlos   | 359 | 2 (15)               | 3 (5.5)                      | 1 (18)               | 2 (3.5)     | 3 (3.1)   |          |
| Universidad del Valle, Guatemala  | 332 | 3 (14)               | 2 (7.3)                      | 3 (16)               | 3 (3.4)     | 2 (3.4)   |          |
| Center Studies Sensory Impairment Aging & Metabolism                              | 143 | 4 (6.0)              | 5 (3.2)                      | 4 (6.9)              | 4 (2.7)     | 4 (2.8)   |          |
| Ministerio de Salud Pública y Asistencia Social                                   | 87  | 5 (3.7)              | 12<br>(0.71)                 | 5 (4.6)              | 14 (0.21)   | 15 (0.18) |          |
| Hospital General San Juan de Dios   | 53  | 6 (2.2)              | 6 (1.8)                      | 7 (2.4)              | 6 (0.63)    | 6 (0.60)  |          |
| Universidad Francisco Marroquín   | 52  | 7 (2.2)              | 13<br>(0.53)                 | 6 (2.7)              | 8 (0.46)    | 7 (0.50)  |          |
| Hospital Roosevelt  | 40  | 8 (1.7)              | 7 (1.4)                      | 8 (1.8)              | 7 (0.5)     | 7 (0.50)  |          |
| Central American Research Institute for Industry                                  | 36  | 9 (1.5)              | 4 (5.3)                      | 32 (0.33)<br>5 (1.3) | 5 (1.4)     |           |          |
| Centers Disease Control & Prevention, Salvador Office                             | 22  | 10 (0.92)N/A         | 9 (1.2)                      | 19 (0.13)            | 18 (0.14)   |           |          |
| Unidad Nacional de Oncología y Pediatría  | 17  | 11 (0.71)N/A         | 10 (0.93)<br>(0.042)         | 45                   | N/A         |           |          |
| Hospital Herrera Llerandi   | 14  | 12 (0.59)N/A         | 11 (0.77)N/A                 | N/A                  |             |           |          |
| Hospital Ojos y Oídos Dr. Rodolfo Robles V.                                       | 13  | 13 (0.55)<br>8 (1.2) | 32 (0.33)<br>10 (0.29)       | 10 (0.32)            |             |           |          |
| Universidad Rafael Landívar   | 13  | 13 (0.55)N/A         | 12 (0.71)<br>(0.042)         | 45<br>(0.046)        | 43          |           |          |
| Instituto de Etnobiología   | 12  | 15 (0.50)N/A         | 13 (0.66)N/A                 | N/A                  |             |           |          |
| Servicio Nacional de Control de Enfermedades Transmitidas por Vectores Artrópodos | 12  | 15 (0.50)<br>(0.36)  | 15<br>17 (0.55)<br>19 (0.13) | 19 (0.13)            | 18 (0.14)   |           |          |

TP: number of articles; SP: number of single institute articles; CP: number of inter-institutionally collaborative articles; FP: number of first author articles; RP: number of corresponding author articles; R: rank; N/A: not available

Table 7. Authors from Guatemala.

| Author         | Affiliation                             | TP  | Rank (TP) | Rank (FP) |
|----------------|---|-----|-----------|-----------|
| Solomons, NW   | CeSSIAM                                 | 208 | 1 (208)   | 1 (65)    |
| Bressani, R    | Inst Invest                             | 178 | 2 (178)   | 2 (55)    |
| Elias, LG      | Inst Nutr Cent Amer y Panamá            | 63  | 3 (63)    | 26 (6)    |
| Rolz, C        | Univ Valle Guatemala                    | 52  | 4 (52)    | 3 (22)    |
| Cáceres, A     | Univ San Carlos USAC                    | 45  | 5 (45)    | 8 (15)    |
| Torun, B       | INCAP                                   | 44  | 6 (44)    | 6 (16)    |
| Garces, A      | Francisco Marroquín Univ                | 39  | 7 (39)    | 48 (4)    |
| Ramírez-Zea, M | Inst Nutr Cent América y Panamá INCAP   | 37  | 8 (37)    | 86 (3)    |
| Habicht, JP    | Inst Nutr Cent Amér y Panamá            | 35  | 9 (35)    | 86 (3)    |
| Lechtig, A     | Inst Nutr Cent Amér y Panamá            | 34  | 10 (34)   | 6 (16)    |
| Yarbrough, C   | Inst Nutr Cent Amér y Panamá            | 34  | 10 (34)   | 86 (3)    |
| Vossenaar, M   | CeSSIAM                                 | 33  | 12 (33)   | 10 (13)   |
| Braham, JE     | Inst Nutr Cent Amér y Panamá            | 32  | 13 (32)   | 86 (3)    |
| Mazariegos, M  | Inst Nutr Cent Amér y Panamá            | 32  | 13 (32)   | 19 (7)    |
| Delgado, H     | Inst Nutr Cent Amér y Panamá            | 29  | 15 (29)   | 48 (4)    |
| Cruz, JR       | Inst Nutr Cent Amér y Panamá            | 28  | 16 (28)   | 4 (18)    |
| Barnoya, J     | Cardiovasc Unit Guatemala               | 26  | 17 (26)   | 38 (5)    |
| Monroy, C      | Univ San Carlos                         | 26  | 17 (26)   | 48 (4)    |
| Zea-Flores, G  | Ministerio de Salud de Guatemala        | 25  | 19 (25)   | 354 (1)   |
| Bulux, J       | Hosp Ojos y Oídos Dr. Rodolfo Robles V. | 24  | 20 (24)   | 38 (5)    |
| Pineda, O      | Inst Nutr Cent Amér y Panamá            | 24  | 20 (24)   | 153 (2)   |
| Lindblade, KA  | CDC Reg Off Cent Amer & Panama          | 23  | 22 (23)   | 38 (5)    |
| Molina, MR     | Inst Nutr Cent Amér y Panamá            | 23  | 22 (23)   | 9 (14)    |
| Belizan, JM    | Inst Nutr Cent Amér y Panamá            | 21  | 24 (21)   | 17 (8)    |
| Dearriola, MC  | Cent Amer Inst Res Ind                  | 20  | 25 (20)   | 354 (1)   |

TP: number of articles; FP: number of first author articles; RP: number of corresponding author articles; RP: number of single author articles; R: rank.

Table 8. Top 20 articles with over 200 total citations until the year 2016 ( $TC_{2016} > 200$ ).

| Rank<br>( $TC_{2016}$ ) | Rank<br>( $C_0$ ) | Rank<br>( $C_{2016}$ ) | Rank<br>(TCPY) | Title  | Country  |
|-------------------------|-------------------|------------------------|----------------|--|--|
| 1 (676)                 | 180 (1)           | 3 (139)                | 2 (97)         | Human papillomavirus genotype attribution in invasive cervical cancer: a retrospective cross-sectional worldwide study   | Spain, Netherlands, Portugal, Color Korea, Peru, Mexico, Brazil, Taiwa Paraguay, Bosnia & Herceg, Ugand Lebanon, Croatia, Turkey, India, Gi Nigeria, Philippines, Bangladesh, T Australia, Japan, Honduras, Algeria Republic, USA, Kuwait, Greece, Ve Poland, Israel |
| 2 (409)                 | 13 (9)            | 72 (8)                 | 16 (23)        | Oral montelukast, inhaled beclomethasone, and placebo for chronic asthma - A randomized, controlled trial  | USA, Costa Rica, Guatemala, Peru   |
| 3 (402)                 | 1 (60)            | 1 (200)                | 1 (134)        | Ramucirumab monotherapy for previously treated advanced gastric or gastro-oesophageal junction adenocarcinoma (REGARD): an international, randomised, multicentre, placebo-controlled, phase 3 trial | USA, Czech Republic, South Korea India, Brazil, UK, Canada, Russia, , Guatemala, Poland, Spain   |
| 4 (397)                 | 47 (3)            | 35 (12)                | 17 (22)        | Prevention of diarrhea and pneumonia by zinc supplementation in children in developing countries: Pooled analysis of randomized controlled trials  | USA, Pakistan, Jamaica, UK, Indon Bangladesh, Vietnam, Peru, Mexico India  |
| 5 (392)                 | 2 (41)            | 6 (66)                 | 4 (78)         | A distinct lineage of influenza A virus from bats  | USA, Guatemala   |
| 6 (311)                 | 79 (2)            | 115 (6)                | 63 (7.2)       | Height and weight standards for preschool-children - how relevant are ethnic differences in growth potential   | Guatemala  |
| 7 (309)                 | 180 (1)           | 1088 (0)               | 50 (8.1)       | Assessment of zinc and copper nutriture in man   | Guatemala  |
| 8 (305)                 | 475 (0)           | 41 (10)                | 21 (18)        | Therapeutic effects of oral zinc in acute and persistent diarrhea in children in developing countries: pooled analysis of randomized controlled trials   | USA, Pakistan, UK, Jamaica, Indon Bangladesh, Vietnam, Peru, Mexico India  |
| 9 (260)                 | 17 (7)            | 2 (146)                | 3 (87)         | Secukinumab in Plaque Psoriasis - Results of Two Phase 3 Trials  | Canada, USA, Germany, UK, Spain Australia, Iceland, Guatemala, Taiw  |
| 10 (256)                | 475 (0)           | 648 (1)                | 65 (7.1)       | Studies on the bioavailability of zinc in humans - effects of heme and nonheme iron on the absorption of zinc  | USA, Guatemala   |
| 11 (255)                | 30 (4)            | 648 (1)                | 59 (7.5)       | Reduction of blood-pressure with calcium supplementation in young-adults   | USA, Guatemala   |
| 12 (254)                | 475 (0)           | 150 (5)                | 69 (6.9)       | The effect of a supportive companion on perinatal problems, length of labor, and mother-infant interaction   | USA, Guatemala   |
| 13 (239)                | 475 (0)           | 5 (67)                 | 6 (48)         | Averting biodiversity collapse in tropical forest  | Australia, Panama, UK, USA, Mexi China, Canada, Denmark, Surinam,  |

|          |         |          |           |  |  |
|----------|---------|----------|-----------|--|--|
|          |         |          |           | protected areas  | France, Thailand, Congo, India, Net<br>Costa Rica, Uganda, Italy, Austria,<br>Bolivia, Taiwan, Venezuela, Singap<br>Spain, Kenya, Cote Ivoire, Japan, G<br>Republic, Papua N Guinea, Indones<br>Sierra Leone, Cent Afr Republ, Nep |
| 14 (235) | 475 (0) | 115 (6)  | 82 (6.2)  | Analysis of two genetic models for the innate components of colony odor in social Hymenoptera                                  | Australia, Guatemala   |
| 15 (227) | 10 (10) | 423 (2)  | 35 (11)   | An outbreak in 1996 of cyclosporiasis associated with imported raspberries   | USA, Canada, Guatemala   |
| 16 (220) | 475 (0) | 423 (2)  | 73 (6.7)  | Heterogeneous growth and mental-development of intrauterine growth-retarded infants during the first three years of life       | USA, Guatemala   |
| 17 (214) | 475 (0) | 648 (1)  | 121 (5.1) | Effect of food supplementation during pregnancy on birth-weight  | Guatemala  |
| 18 (207) | 475 (0) | 1088 (0) | 132 (4.9) | Acute morbidity and physical growth in rural Guatemalan children   | Guatemala, USA   |
| 19 (202) | 17 (7)  | 13 (36)  | 15 (25)   | Ancestry Informative Marker Sets for Determining Continental Origin and Admixture Proportions in Common Populations in America | USA, Guatemala, Sweden   |
| 19 (202) | 30 (4)  | 41 (10)  | 24 (16)   | Miltefosine for New World cutaneous leishmaniasis  | Germany, Colombia, Guatemala, U  |

$TC_{2016}$ : total citations since publication to the end of 2016;  $C_0$ : citations in publication year;  $C_{2016}$ : citations in 2016;  
 $TCPY$ : citations per number of years.

Table 9. Top 10 Guatemala independent articles with  $TC_{2016} > 100$ .

| Rank<br>( $TC_{2016}$ ) | Rank ( $C_0$ ) | Rank<br>( $C_{2016}$ ) | Rank<br>(TCPY) | Title   | Institution  |
|-------------------------|----------------|------------------------|----------------|---|--|
| 6 (311)                 | 79 (2)         | 115 (6)                | 63 (7.2)       | Height and weight standards for preschool-children - how relevant are ethnic differences in growth potential                | Inst Nutr Cent Amer y Pa                             |
| 7 (309)                 | 180 (1)        | 1088 (0)               | 50 (8.1)       | Assessment of zinc and copper nutriture in man  | Inst Nutr Cent Amer y Pa                             |
| 17 (214)                | 475 (0)        | 648 (1)                | 121 (5.1)      | Effect of food supplementation during pregnancy on birth-weight   | Inst Nutr Cent Amer y Pa                             |
| 27 (166)                | 475 (0)        | 276 (3)                | 107 (5.4)      | Competitive interaction of iron and zinc in the diet - consequences for human-nutrition                                     | Inst Nutr Cent Amer y Pa<br>Sensory Impair Aging & ] |
| 29 (164)                | 475 (0)        | 115 (6)                | 156 (4.4)      | The relationship between calcium intake and edema-gestosis, proteinuria-gestosis, and hypertension-gestosis - an hypothesis | Inst Nutr Cent Amer y Pa                             |
| 33 (153)                | 475 (0)        | 423 (2)                | 113 (5.3)      | Hematological effect of supplementing anemic children with vitamin-a alone and in combination with iron                     | Inst Nutr Cent Amer y Pa                             |
| 34 (148)                | 475 (0)        | 276 (3)                | 223 (3.5)      | Vot discrimination by 4 to 6 1/2 month-old infants from spanish environments  | Inst Nutr Cent Amer y Pa                             |
| 57 (121)                | 475 (0)        | 648 (1)                | 267 (3.2)      | Possible effects of seed coat polyphenolics on the nutritional quality of bean protein                                      | Inst Nutr Cent Amer y Pa                             |
| 58 (118)                | 475 (0)        | 648 (1)                | 209 (3.7)      | Open, prospective-study of the clinical efficacy of ciprofloxacin   | Roosevelt Hosp; San Juan                             |
| 68 (102)                | 475 (0)        | 115 (6)                | 144 (4.6)      | Antigonorrhoeal activity of plants used in Guatemala for the treatment of sexually-transmitted diseases                     | Univ San Carlos; Farmay;                             |

$TC_{2016}$ : total citations since publication to the end of 2016;  $C_0$ : citations in publication year;  $C_{2016}$ : citations in 2016;  
 TCPY: citations per number of years.

## Digital Appendix 2. Additional Figures

Figure 5. Percentage of publications and number of journals in each Web of Science category.

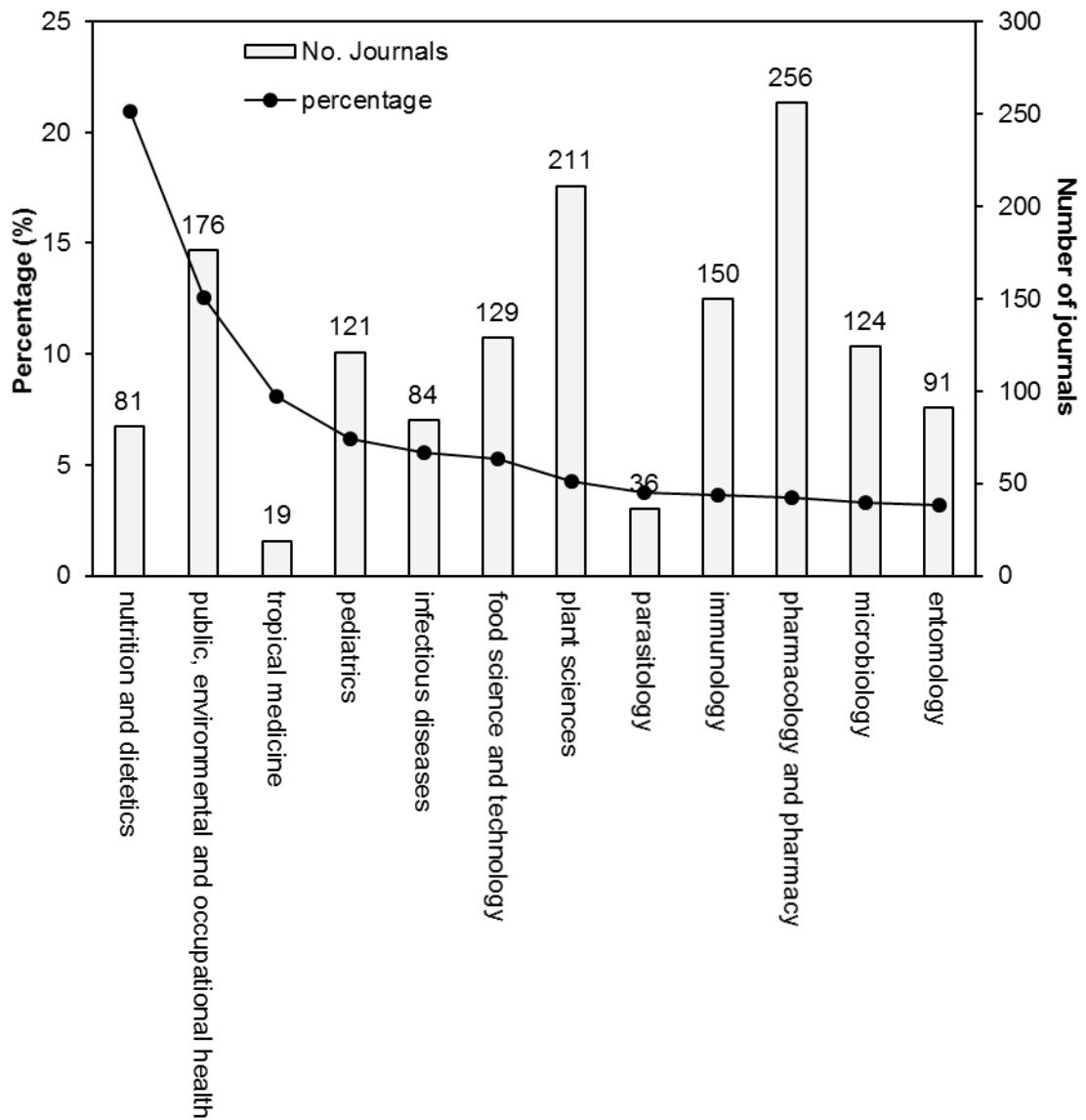


Figure 6. Historical collaboration pattern for the top six collaborative countries with Guatemala ( $TP > 120$ ).

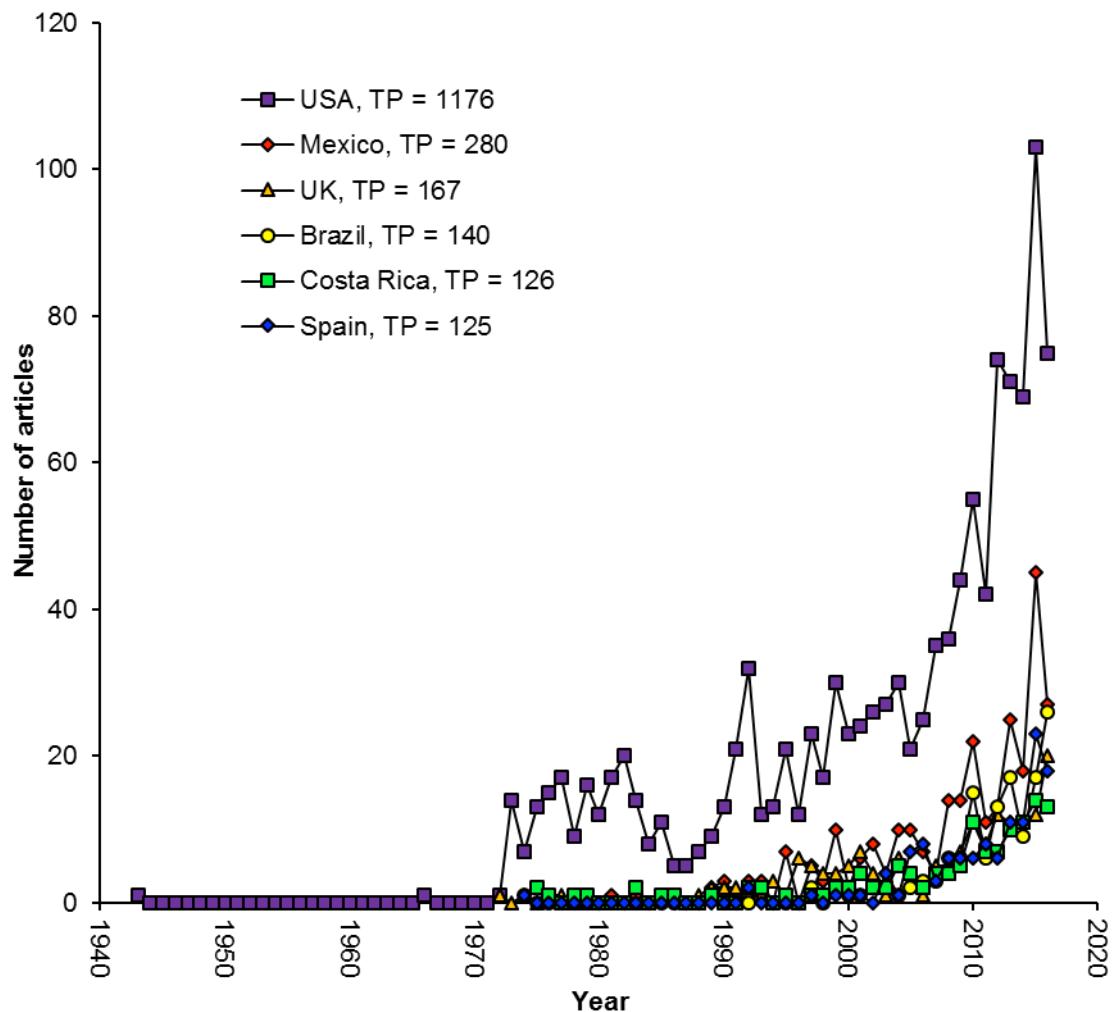


Figure 7. Historical collaboration pattern for Guatemala, by geographically closest countries.

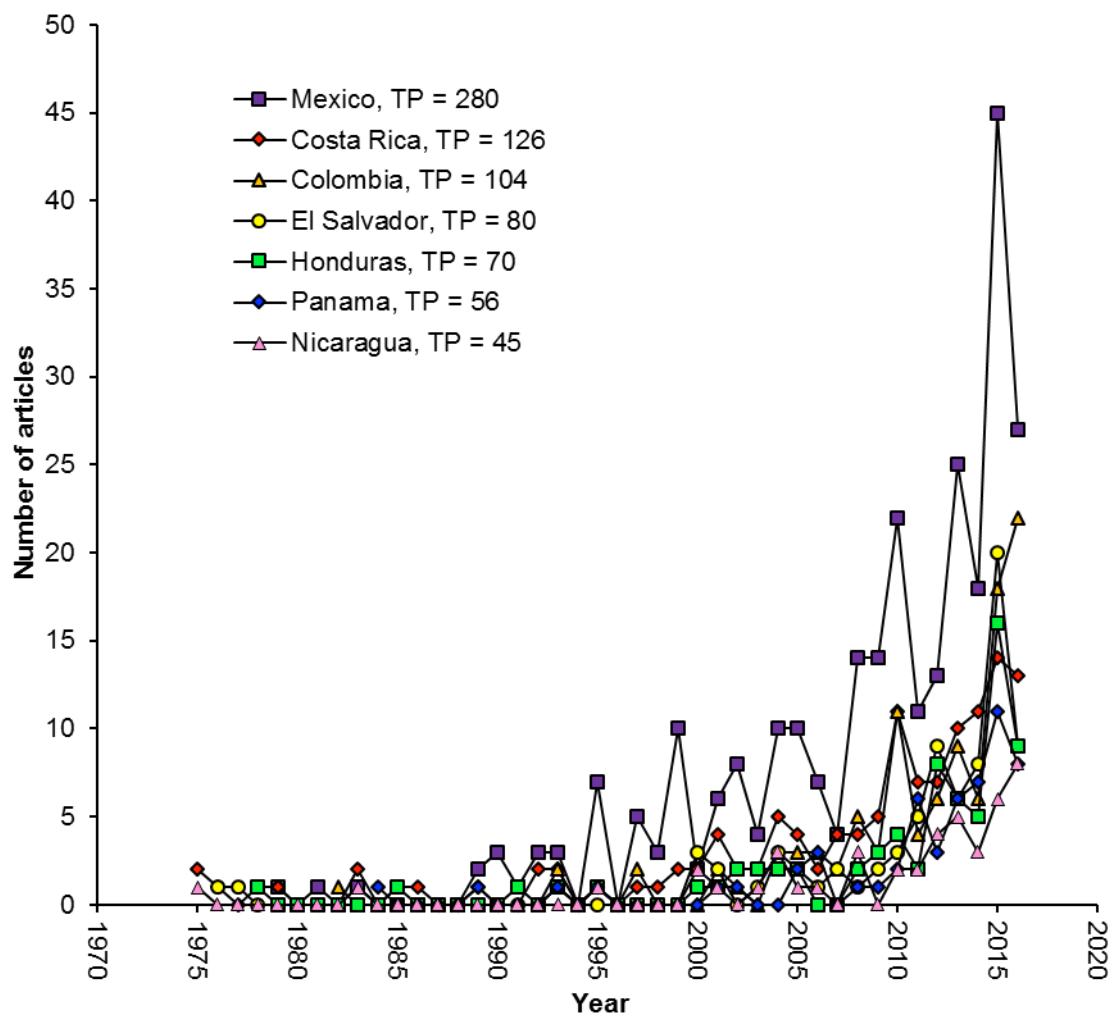


Figure 8. Historical citation patterns for top cited articles, by publication year ( $C_0 > 10$ ).

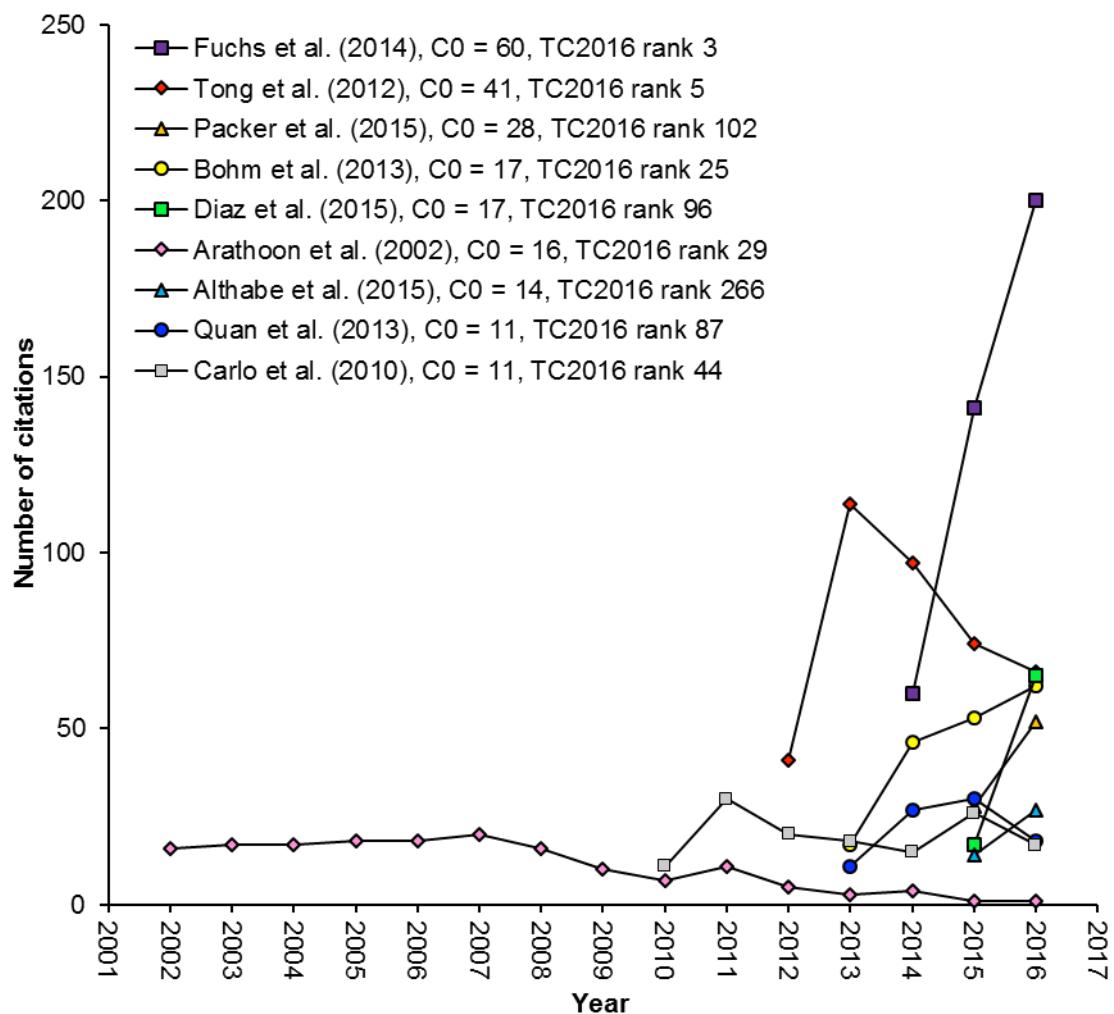


Figure 9. Article lifespan for top cited articles, by publication year ( $C_0 > 10$ ).

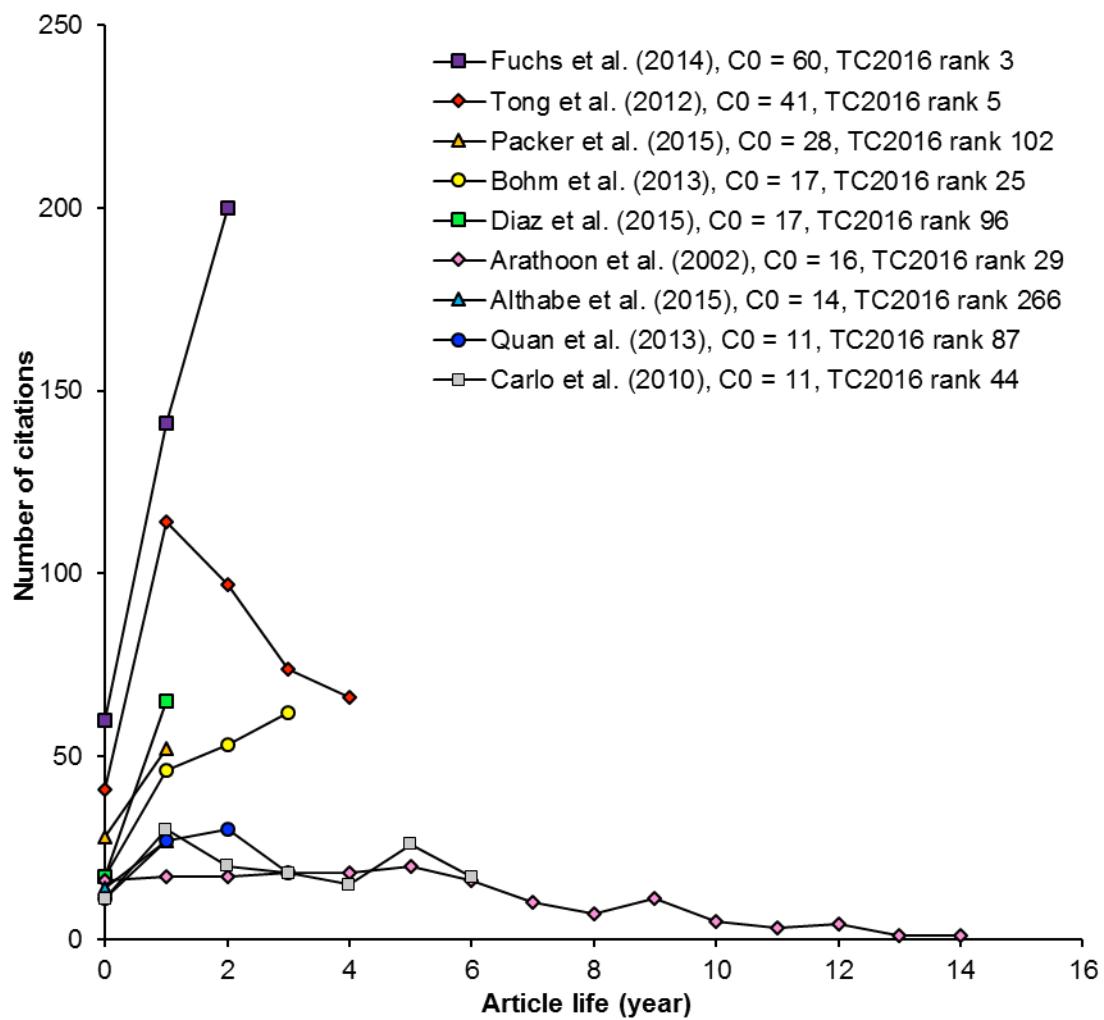


Figure 10. Historical citation patterns for top cited articles in 2016 (recent year) only ( $C_{2016} > 50$ ).

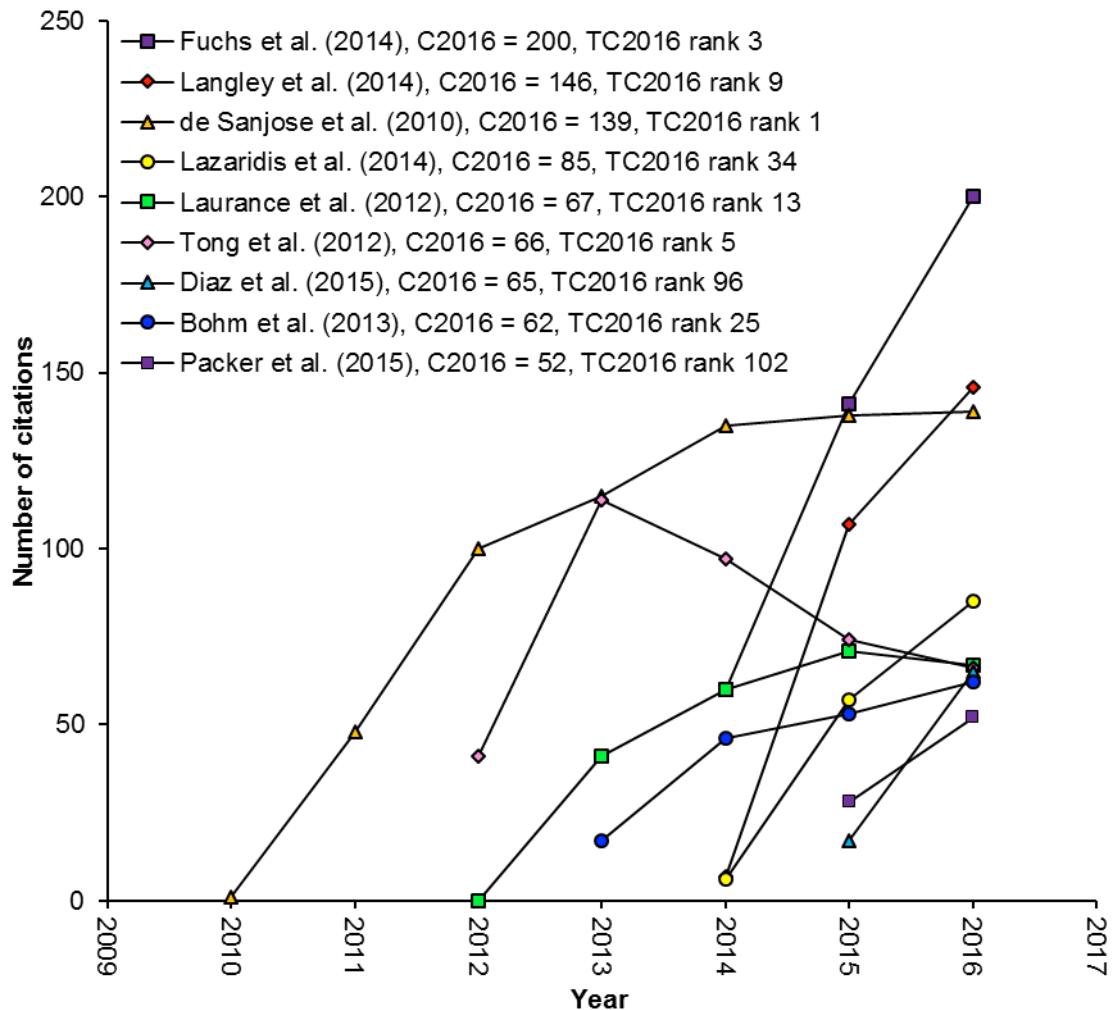


Figure 11. Historical citation patterns for top cited articles by total citations per year ( $TCPY \geq 40$ ).

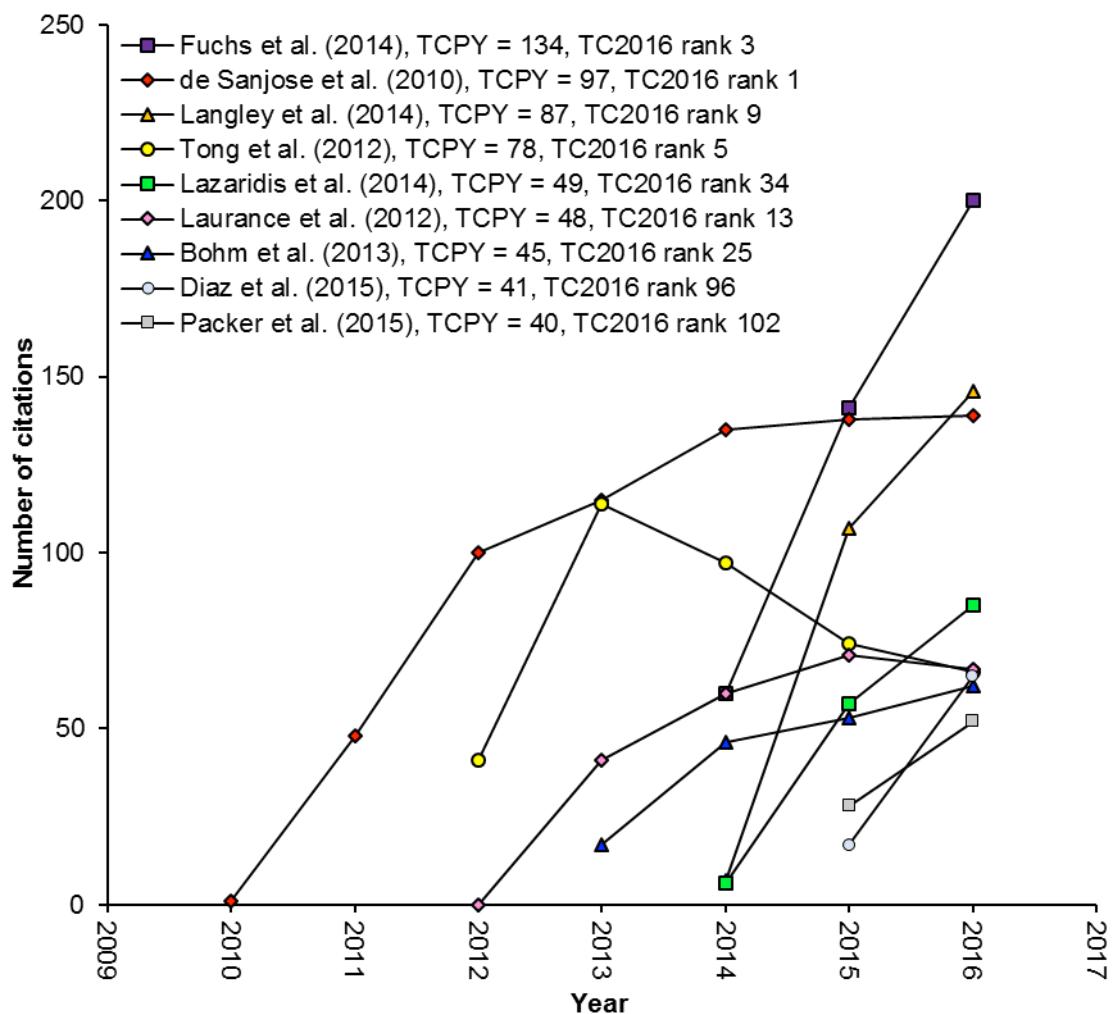


Figure 12. Historical citation patterns for four articles ranked on both the top ten  $TC_{2016}$  and  $C_{2016}$ .

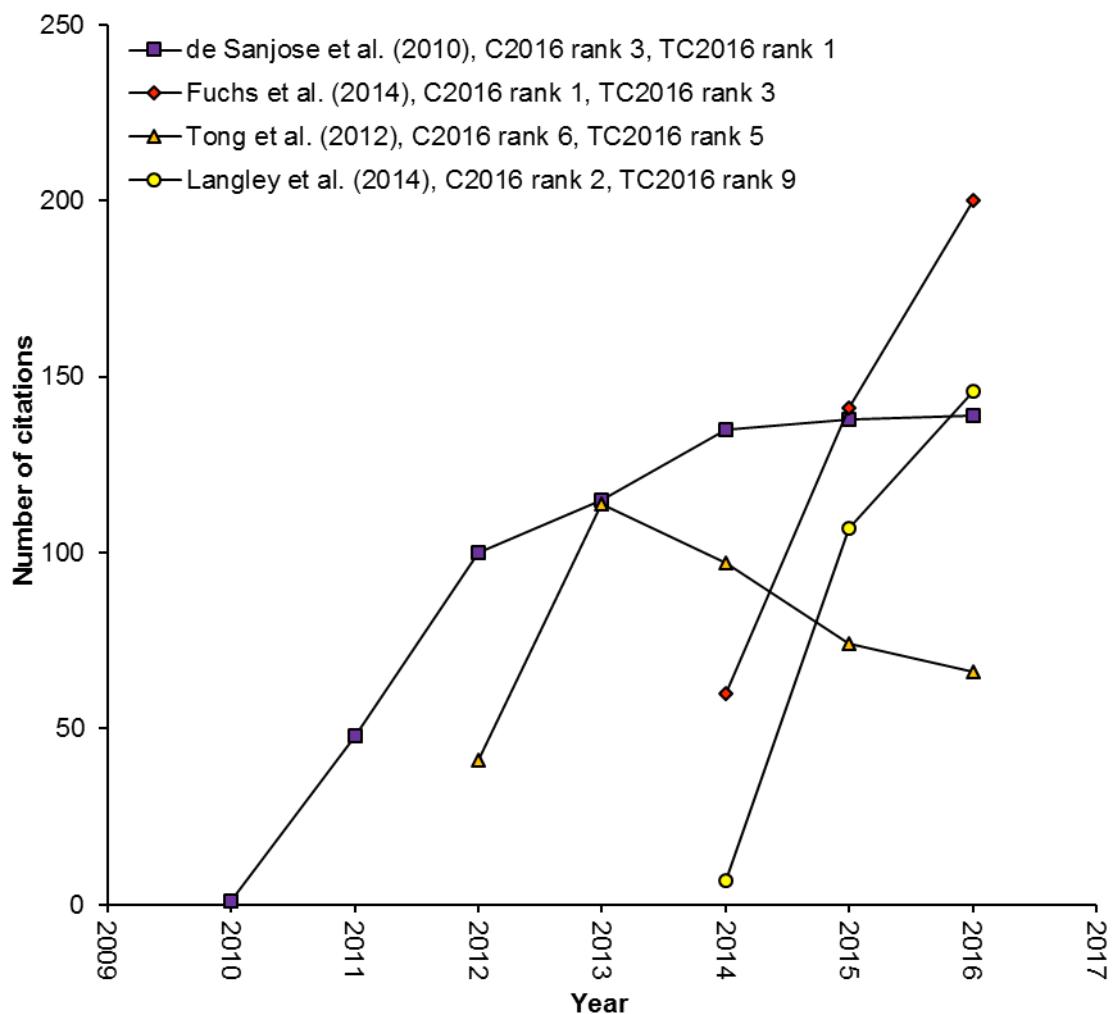


Figure 13. Publication trends for the top six institutions ( $TP > 50$ ).

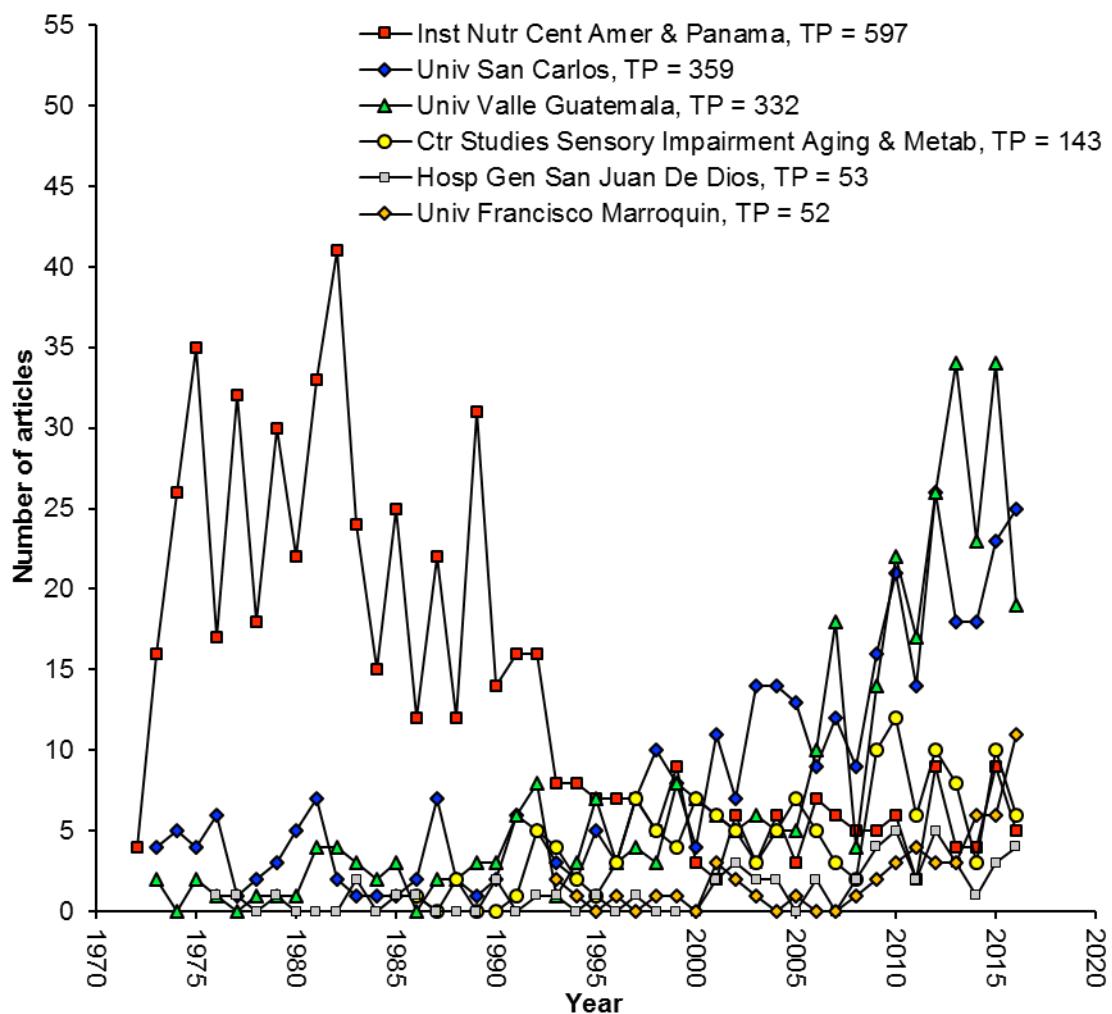


Figure 14. Historical number of article patterns for Guatemala, by the top five Web of Science category.

