

SUPPLEMENTARY FIGURES

DATE: 21 SEPTEMBER 2022

Data and variables

The graphical outputs presented in this supplementary document include only papers with two or more citations. Two different diversity measures are used to represent the level of diversity in citing groups, i.e., the Gini-Simpson index and the Shannon index. Data from 2010 to 2019 (both inclusive) as publication years are presented. Diversity measures are calculated based on grouping all possible links between the cited paper and institutional affiliations of citing papers into bins as defined by the type of citing groups, i.e., institutions, countries, subregions, and regions, and also the citing papers by fields of research. We present various findings in terms of both means and medians, as both have their advantages and disadvantages in dealing with outliers, high number of repeat observations, etc., together along with other distributional analyses, to compare the performance of OA papers and closed papers in citation diversity.

Section A: Summary statistics for the overall data

The following figures present various summary statistics for our overall data. The top-left figure shows the overall number of paper (with DOIs) that are included in our study. These are grouped into their respective publication year as per Crossref metadata records. The top-right figure shows the yearly comparison between the amount of OA versus non-OA papers. There is a clear increase in the proportion of OA papers over the ten-year period. The bottom two figures depict the comparisons of mean and median, respectively, number of citations received by papers across different OA categories. There is a clear and consistent signal of OA papers receiving more citations when looking at the whole data set overall.

Figure: Annual DOI counts

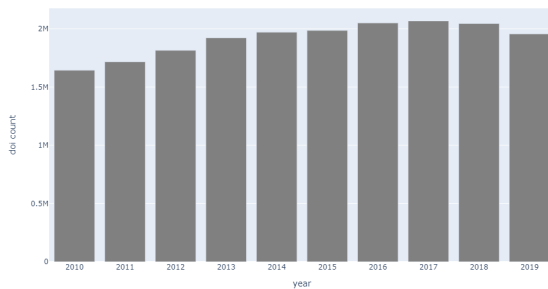


Figure: Annual OA versus non-OA DOI counts

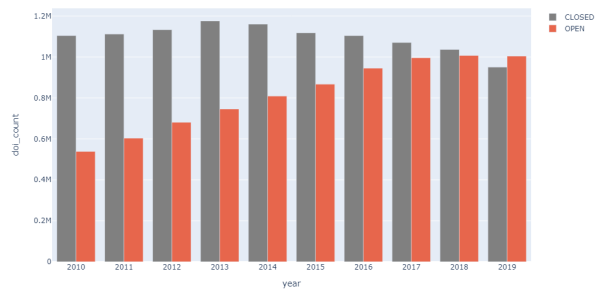


Figure: The mean citation count per OA category

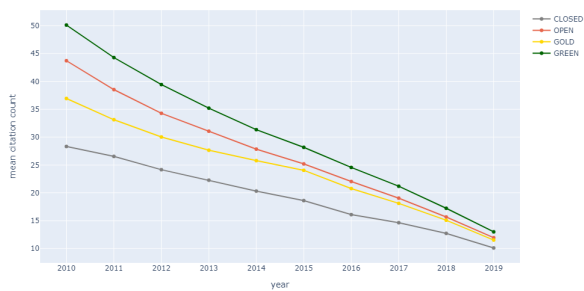
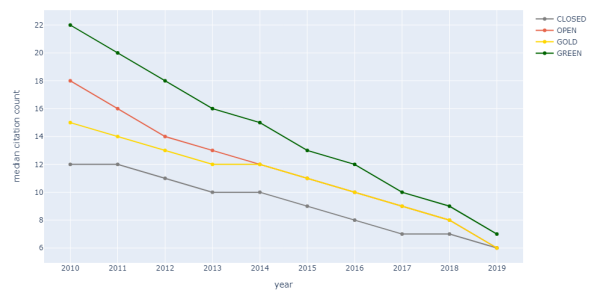


Figure: The median citation count per OA category



Section B: Number of unique citing groups - mean and median

The following figures track the mean and median numbers of unique citing groups over time and compares them across different OA categories and for closed papers. For example, to calculate the number of unique citing countries for a particular paper, we count the number of (unique) countries for which its citing papers are affiliated to. The main finding here is that OA papers garners more unique citing groups almost consistently over time. Furthermore, papers that are Green OA garners the highest number of unique citing groups. We do note however that papers published Gold OA are also likely to be published Green OA. This means these papers potentially gets the benefits of both routes of OA. We also note that flat pattern for the median number of unique citing regions is the result of low number of possible regions, and a similar pattern is shown for the median number of unique citing fields due to most citations occurring within-field for a large portion of papers that have low citation counts.

Figure: The mean number of unique citing Institutions

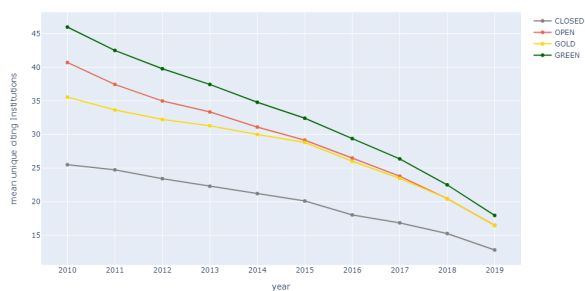


Figure: The median number of unique citing Institutions

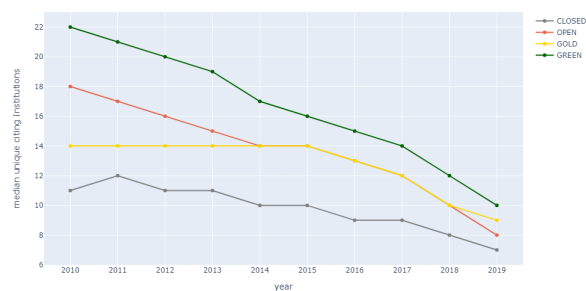


Figure: The mean number of unique citing Countries

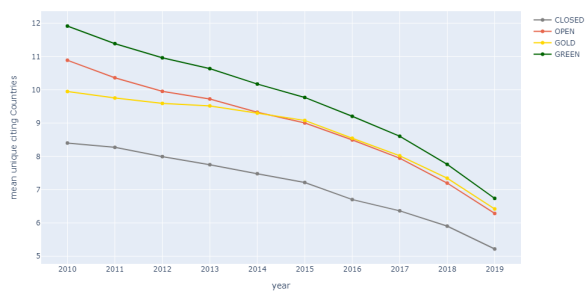


Figure: The median number of unique citing Countries

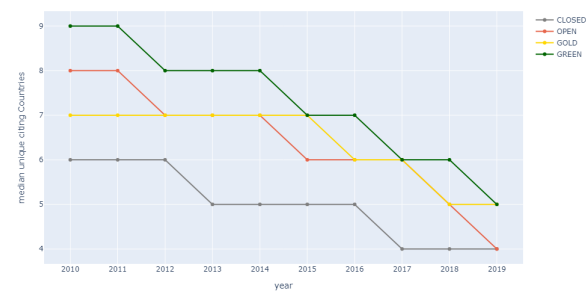


Figure: The mean number of unique citing Subregions

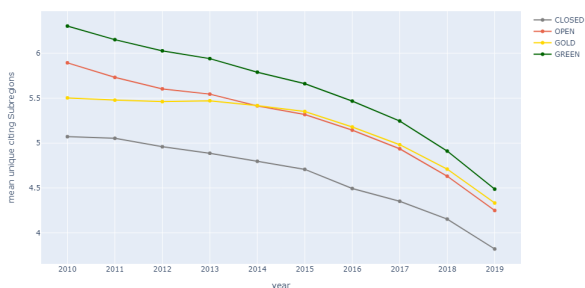


Figure: The median number of unique citing Subregions

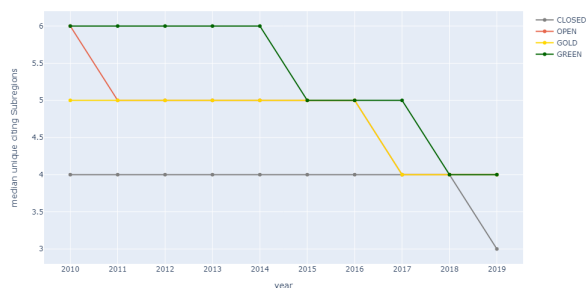


Figure: The mean number of unique citing Fields

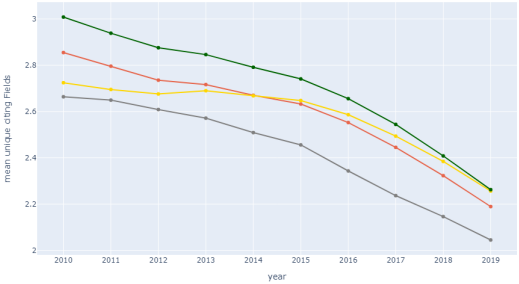


Figure: The median number of unique citing Fields

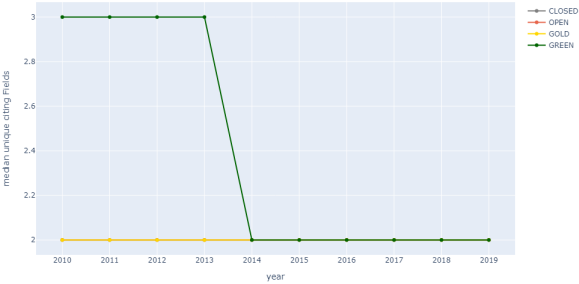


Figure: The mean number of unique citing Regions

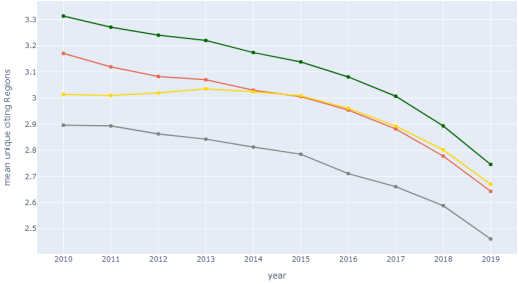
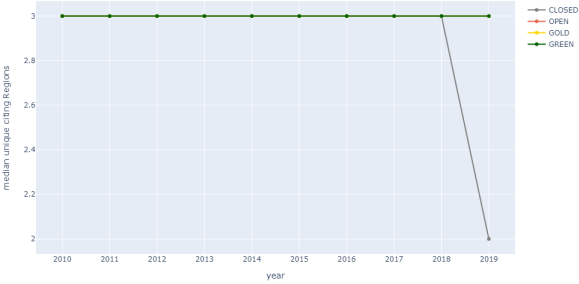


Figure: The median number of unique citing Regions



Section C: Number of unique citing groups - box plots

This section extends the comparison of unique citing groups to their respective distributions, as represented by box plots. To ensure robust comparisons, we sample 10,000 papers independently from each OA category and closed papers, for each year of publication. The quartiles of numbers of unique citing groups are shown together with potential outliers in each category. The general pattern observed is that OA papers attract higher number of unique citing groups, which is signalled both by the distributional differences and many more outliers in the upper tail. Again, it is noted that this general pattern can be diluted by the low number of regions in the regional comparisons. For the cases of institutional groupings, the very high numbers of upper outliers skew the figures but the general pattern applies.

The first set of these is based on Institutions as citing groups:

Figure: Box plots of number of unique citing Institutions by OA status for 2010
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

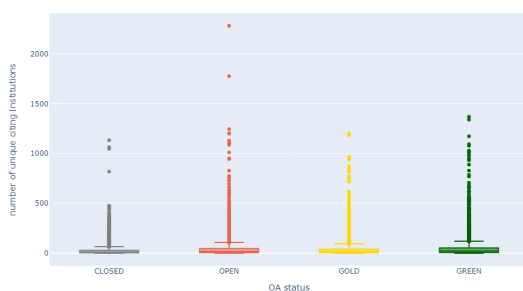


Figure: Box plots of number of unique citing Institutions by OA status for 2011
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

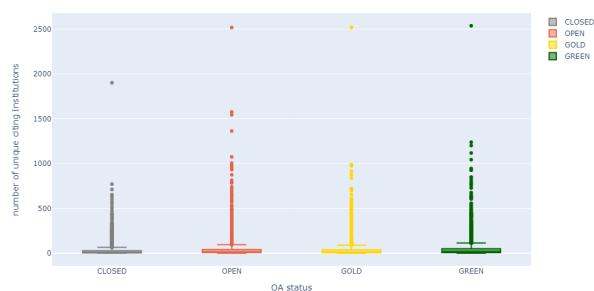


Figure: Box plots of number of unique citing Institutions by OA status for 2012
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

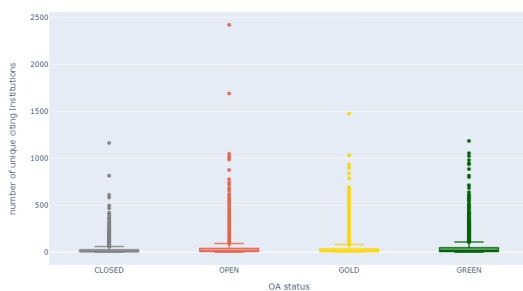


Figure: Box plots of number of unique citing Institutions by OA status for 2013
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

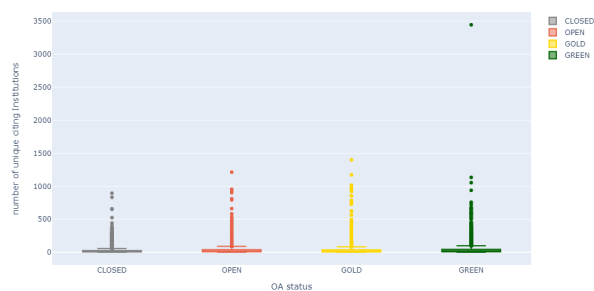


Figure: Box plots of number of unique citing Institutions by OA status for 2014
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

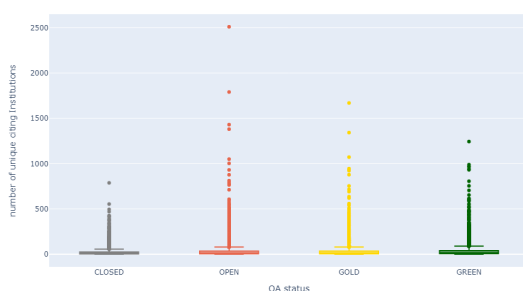


Figure: Box plots of number of unique citing Institutions by OA status for 2015
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

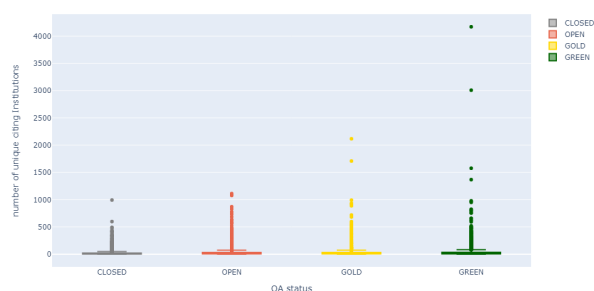


Figure: Box plots of number of unique citing Institutions by OA status for 2016
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

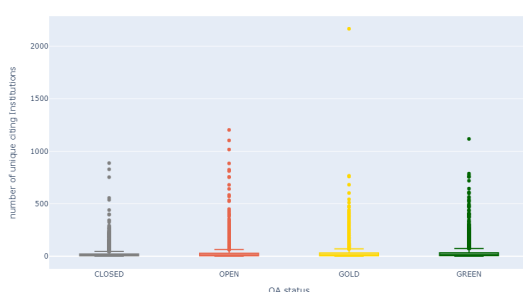


Figure: Box plots of number of unique citing Institutions by OA status for 2017
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

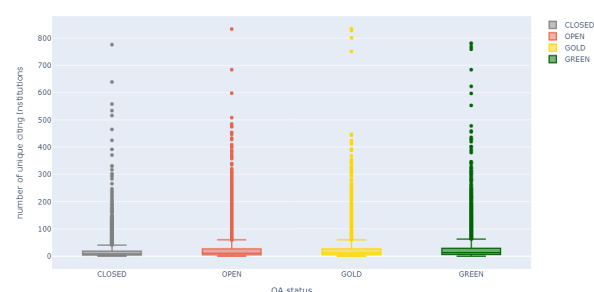


Figure: Box plots of number of unique citing Institutions by OA status for 2018
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

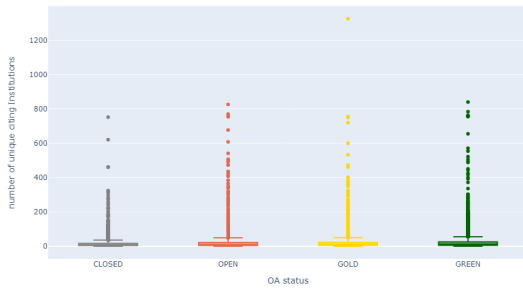
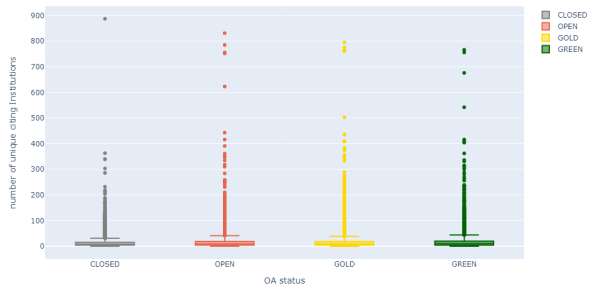


Figure: Box plots of number of unique citing Institutions by OA status for 2019
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)



The next set is based on Countries as citing groups:

Figure: Box plots of number of unique citing Countries by OA status for 2010
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

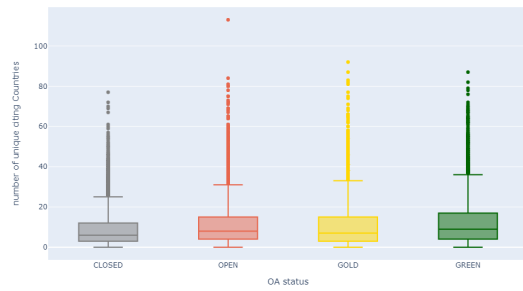


Figure: Box plots of number of unique citing Countries by OA status for 2011
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)



Figure: Box plots of number of unique citing Countries by OA status for 2012
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

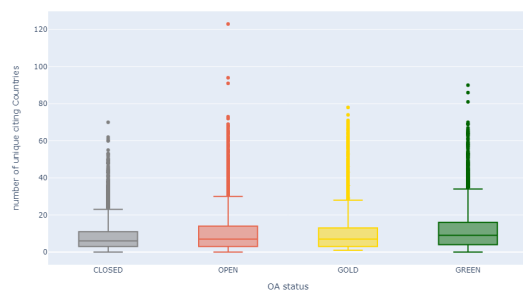


Figure: Box plots of number of unique citing Countries by OA status for 2013
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)



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(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

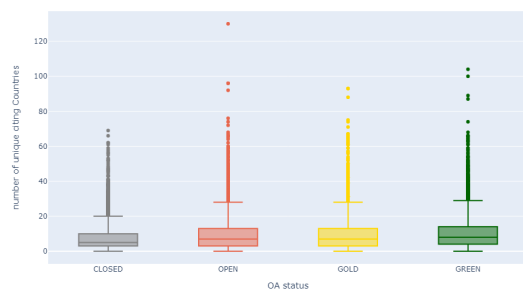


Figure: Box plots of number of unique citing Countries by OA status for 2015
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

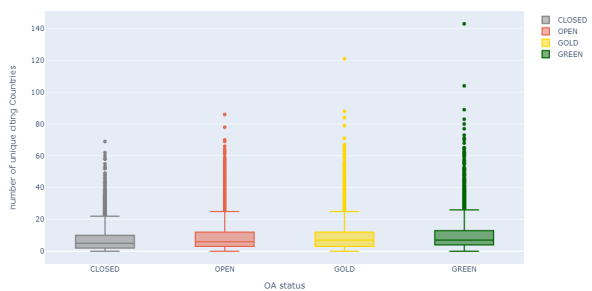


Figure: Box plots of number of unique citing Countries by OA status for 2016
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

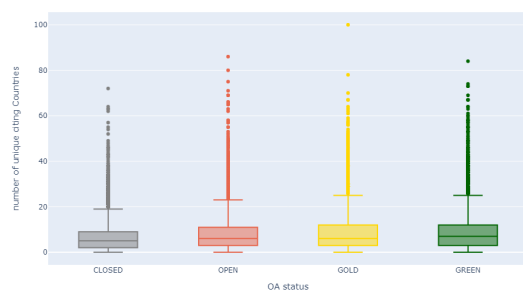
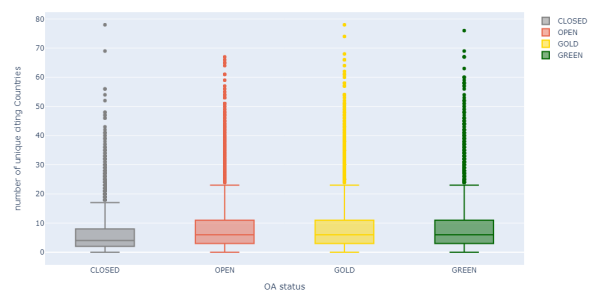


Figure: Box plots of number of unique citing Countries by OA status for 2017
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)



Box plot showing the number of unique citing countries for different OA statuses. The y-axis represents the number of unique citing countries (0 to 100). The x-axis represents the OA status (CLOSED, OPEN, GOLD, GREEN). The plot shows that the number of unique citing countries generally increases with the OA status, with GOLD having the highest median and most outliers, and CLOSED having the lowest median and no outliers.

A box plot showing the distribution of the number of unique string countries for four OA statuses: CLOSED, OPEN, GOLD, and GREEN. The y-axis represents the number of unique string countries, ranging from 0 to 90. The x-axis represents the OA status. Each status has a corresponding color-coded box plot: CLOSED (grey), OPEN (red), GOLD (yellow), and GREEN (dark green). The plot shows that the number of unique string countries is generally higher for the OPEN status compared to the other three statuses, which have similar distributions centered around 5-10 unique string countries. The GREEN status shows a notable outlier at 78.

OA status	Color	Min	Q1	Median	Q3	Max	Outliers
CLOSED	grey	0	2	4	6	15	48, 50, 52, 54, 56, 64, 86
OPEN	red	0	3	4	6	18	45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69
GOLD	yellow	0	3	4	6	20	39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67
GREEN	dark green	0	3	4	6	19	41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78

The next set is based on Subregions as citing groups:

Box plot showing the number of unique citing SUs (Y-axis, 0 to 14) for different OA status categories (X-axis: CLOSED, OPEN, GOLD, GREEN). The plot indicates that the number of unique citing SUs is generally higher for OPEN and GOLD statuses compared to CLOSED and GREEN statuses. The CLOSED status shows a significant outlier at 15.

OA status	Min	Q1	Median	Q3	Max	Outliers
CLOSED	0	2	5	7	14	15
OPEN	0	3	6	9	14	None
GOLD	0	2	5	8	14	None
GREEN	0	3	6	9	14	None

Box plot showing the number of unique citing Silestones for four OA statuses: CLOSED, OPEN, GOLD, and GREEN. The y-axis represents the number of unique citing Silestones, ranging from 0 to 16. The legend indicates: CLOSED (grey), OPEN (red), GOLD (yellow), and GREEN (green).

OA status	Min	Q1	Median	Q3	Max
CLOSED	0	1.5	5.0	7.0	14.0
OPEN	0	2.5	5.0	8.0	15.0
GOLD	0	1.5	5.0	8.0	14.0
GREEN	0	3.0	6.0	9.0	16.0

Box plot showing the number of unique dining subgroups (Y-axis) for different OA status categories (X-axis): CLOSED, OPEN, GOLD, and GREEN. The plot indicates that the number of unique dining subgroups generally increases with OA status.

OA status	Min	Q1	Median	Q3	Max
CLOSED	0	2	3.5	6.5	14
OPEN	0	3	4.5	8	15
GOLD	1	2	4.5	8	15
GREEN	0	3	6	8.5	15

Box plot showing the number of unique dining Salutations for four OA status categories: CLOSED, OPEN, GOLD, and GREEN. The y-axis represents the number of unique dining Salutations, ranging from 0 to 16. The legend indicates: CLOSED (grey), OPEN (red), GOLD (yellow), and GREEN (green).

OA status	Min	Q1	Median	Q3	Max	Outliers
CLOSED	0	2	4	7	14	15
OPEN	0	3	5	8	15	
GOLD	0	2	5	8	15	
GREEN	0	3	6	8	14	16

number of unique citing subregions

OA status

CLOSED OPEN GOLD GREEN

Box plot showing the number of unique citing subregions for four OA statuses: CLOSED, OPEN, GOLD, and GREEN. The y-axis represents the number of unique citing subregions, ranging from 0 to 16. The legend indicates the colors for each status: CLOSED (grey), OPEN (red), GOLD (yellow), and GREEN (green).

OA Status	Min	Q1	Median	Q3	Max	Outliers
CLOSED	0	2	4	7	14	15
OPEN	0	3	5	8	14	None
GOLD	0	3	5	8	15	None
GREEN	0	3	5	8	15	16

A box plot titled 'number of unique citing Scores' on the y-axis and 'OA status' on the x-axis. The y-axis has major ticks at 0, 2, 4, 6, 8, 10, 12, and 14. The x-axis has four categories: CLOSED, OPEN, GOLD, and GREEN. Each category has a box plot with a different color: CLOSED is grey, OPEN is red, GOLD is yellow, and GREEN is green. The boxes represent the interquartile range (IQR), the horizontal line inside each box is the median, and the vertical lines (whiskers) extend to the minimum and maximum values within 1.5 times the IQR. Outliers are shown as individual points above the whiskers. The median score increases from approximately 4.5 for CLOSED to approximately 5.0 for OPEN, GOLD, and GREEN. The IQR also increases slightly from approximately 2.5 for CLOSED to approximately 3.0 for OPEN, GOLD, and GREEN. The number of outliers increases significantly for the GREEN status, with several points above 12.

OA status	Min	Q1	Median	Q3	Max	Outliers
CLOSED	0	2.5	4.5	5.5	12	13, 14
OPEN	0	3.5	4.5	6.5	13	14
GOLD	0	3.5	4.5	6.5	13	14
GREEN	0	3.5	5.0	8.0	15	16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726

Box plot showing the number of unique citing Sulejters for four OA statuses: CLOSED, OPEN, GOLD, and GREEN. The y-axis represents the number of unique citing Sulejters, ranging from 0 to 14. The legend indicates: CLOSED (grey), OPEN (red), GOLD (yellow), and GREEN (green).

OA status	Min	Q1	Median	Q3	Max	Outliers
CLOSED	0	2	3.5	6	12	13, 14
OPEN	0	2	4	7	14	15
GOLD	0	2	4.5	7	14	15
GREEN	0	3	4.5	7	13	14

Box plot showing the number of unique subregions (Y-axis, 0 to 14) for four OA status categories (X-axis): CLOSED, OPEN, GOLD, and GREEN. The plot indicates that the number of unique subregions generally increases with OA status, with GREEN having the highest median and most outliers.

OA status	Median	Q1	Q3	Min	Max	Outliers
CLOSED	4.0	2.0	6.0	0.0	12.0	12.5, 13.0, 13.5
OPEN	4.0	2.0	6.0	0.0	12.0	13.0, 13.5, 14.0, 14.5
GOLD	4.0	2.0	7.0	0.0	14.0	14.5
GREEN	4.0	3.0	7.0	0.0	13.0	13.5, 14.0, 14.5

Box plot showing the number of unique string subregions for four OA status categories: CLOSED, OPEN, GOLD, and GREEN. The y-axis represents the number of unique string subregions, ranging from 0 to 14. The x-axis represents the OA status. The legend indicates: CLOSED (grey), OPEN (red), GOLD (yellow), and GREEN (green). Each box plot shows the median, quartiles, and range of the data.

OA status	Min	Q1	Median	Q3	Max
CLOSED	0	2	3	5	9
OPEN	0	2	4	6	12
GOLD	0	2	4	6	12
GREEN	0	2	4	6	12

The next set is based on Regions as citing groups:

Box plot showing the number of unique citing regions (Y-axis, 0 to 5) for four OA statuses (X-axis): CLOSED, OPEN, GOLD, and GREEN. The plot indicates that the number of unique citing regions is generally higher for OPEN and GOLD statuses compared to CLOSED and GREEN statuses.

OA Status	Min	Q1	Median	Q3	Max	Outliers
CLOSED	0	2.0	3.0	4.0	5.0	None
OPEN	0	2.0	3.0	4.0	5.0	None
GOLD	0	2.0	3.0	4.0	5.0	None
GREEN	2.0	3.0	3.0	4.0	5.0	0.0, 1.0

Box plot showing the number of unique citing regions for four OA statuses: CLOSED, OPEN, GOLD, and GREEN. The y-axis represents the number of unique citing regions, ranging from 0 to 5. The legend indicates that the colors correspond to the OA status: CLOSED (grey), OPEN (red), GOLD (yellow), and GREEN (green).

OA status	Min	Q1	Median	Q3	Max
CLOSED	0	2.0	3.0	4.0	5.0
OPEN	0	2.0	3.0	4.0	5.0
GOLD	0	2.0	3.0	4.0	5.0
GREEN	0	2.0	3.0	4.0	5.0

number of unique citing regions

OA status

OA status	min	Q1	Median	Q3	max
CLOSED	0	2	3	4	5
OPEN	0	2	3	4	5
GOLD	1	2	3	4	5
GREEN	0	2	3	4	5

Box plot showing the number of unique citing regions for four OA statuses: CLOSED, OPEN, GOLD, and GREEN. The y-axis represents the number of unique citing regions (0 to 5). The legend indicates: CLOSED (grey), OPEN (red), GOLD (yellow), and GREEN (green).

OA Status	Min	Q1	Median	Q3	Max
CLOSED	0	2.0	3.0	4.0	5.0
OPEN	0	2.0	3.0	4.0	5.0
GOLD	0	2.0	3.0	4.0	5.0
GREEN	0	2.0	3.0	4.0	5.0

number of unique citing regions

OA status

CLOSED OPEN GOLD GREEN

Box plot showing the number of unique citing regions for four OA statuses: CLOSED, OPEN, GOLD, and GREEN. The y-axis represents the number of unique citing regions from 0 to 5. The legend indicates: CLOSED (grey), OPEN (red), GOLD (yellow), and GREEN (green).

OA Status	Min	Q1	Median	Q3	Max
CLOSED	0	2.0	3.0	4.0	5.0
OPEN	0	2.0	3.0	4.0	5.0
GOLD	0	2.0	3.0	4.0	5.0
GREEN	0	2.0	3.0	4.0	5.0

number of arcade sitting regions

OA status

OA status	min	Q1	Median	Q3	max
CLOSED	0	2.0	3.0	4.0	5.0
OPEN	0	2.0	3.0	4.0	5.0
GOLD	0	2.0	3.0	4.0	5.0
GREEN	0	2.0	3.0	4.0	5.0

Box plot showing the number of unique citing regions for four OA statuses: CLOSED, OPEN, GOLD, and GREEN. The y-axis represents the number of unique citing regions, ranging from 0 to 5. The legend indicates: CLOSED (grey), OPEN (red), GOLD (yellow), and GREEN (green).

OA Status	Min	Q1	Median	Q3	Max
CLOSED	1	2	2.5	3	4
OPEN	0	2	3	4	5
GOLD	0	2	3	4	5
GREEN	0	2	3	4	5

Figure: Box plots of number of unique citing Regions by OA status for 2018
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

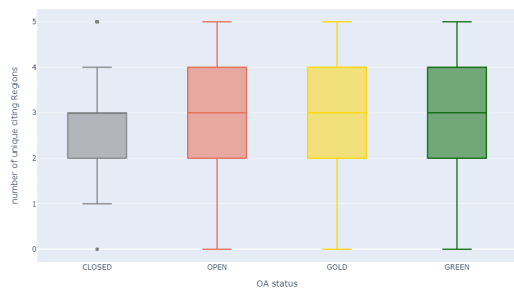


Figure: Box plots of number of unique citing Regions by OA status for 2019
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)



The next set is based on the Fields as citing groups:

Figure: Box plots of number of unique citing Fields by OA status for 2010
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

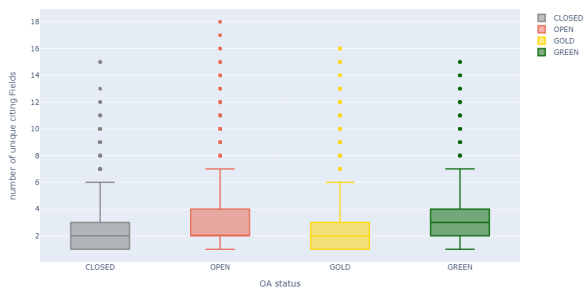


Figure: Box plots of number of unique citing Fields by OA status for 2011
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

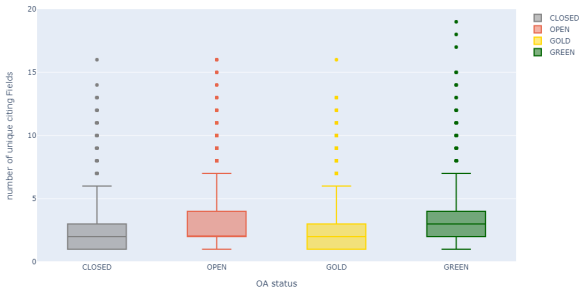


Figure: Box plots of number of unique citing Fields by OA status for 2012
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

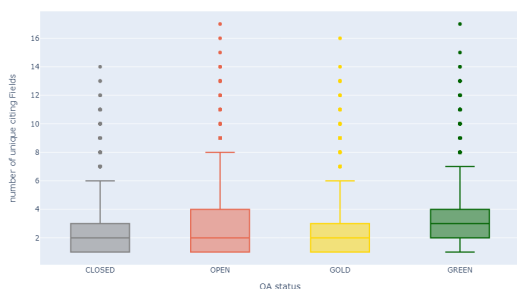


Figure: Box plots of number of unique citing Fields by OA status for 2013
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

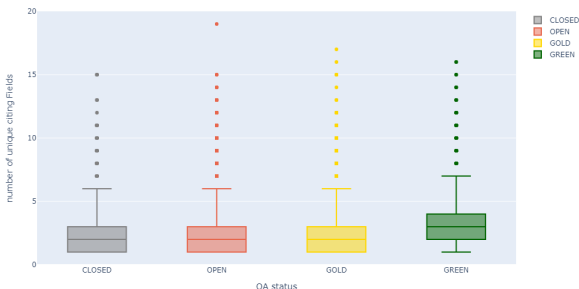


Figure: Box plots of number of unique citing Fields by OA status for 2014
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

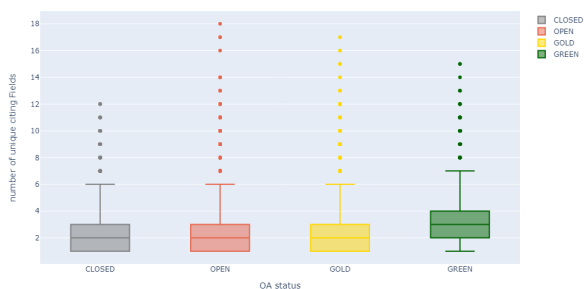


Figure: Box plots of number of unique citing Fields by OA status for 2015
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

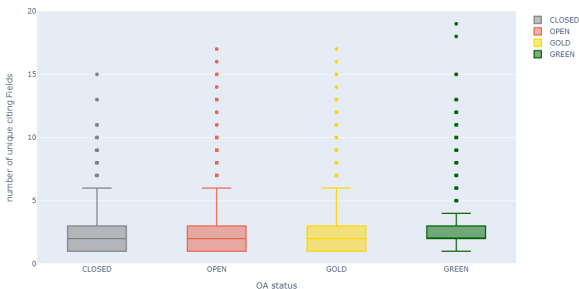


Figure: Box plots of number of unique citing Fields by OA status for 2016
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

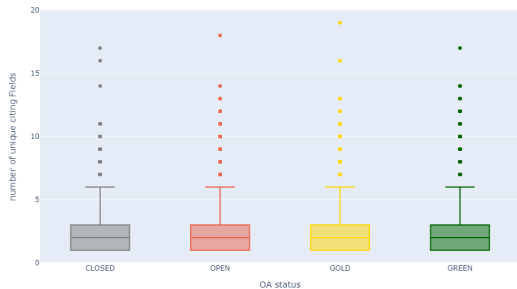


Figure: Box plots of number of unique citing Fields by OA status for 2017
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

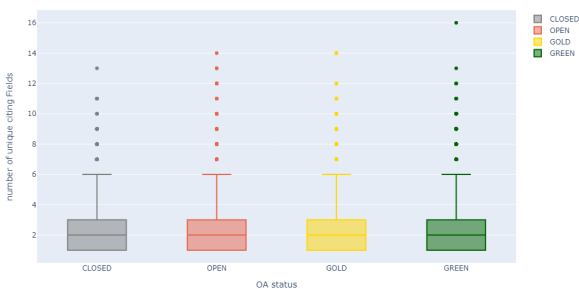


Figure: Box plots of number of unique citing Fields by OA status for 2018
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

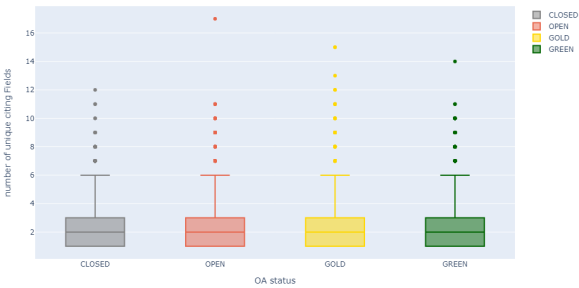
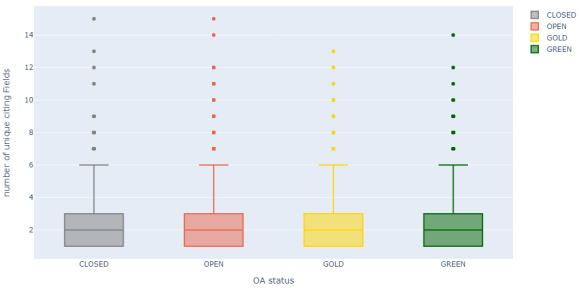


Figure: Box plots of number of unique citing Fields by OA status for 2019
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)



Section D: Citation diversity scores - mean and median

In this section, we present the summary results of the diversity scores for papers in the various OA categories. Here, we include all papers in our study. In the following figures, mean and median diversity scores are tracked over ten years. This is plotted for various combinations of diversity measure and citing group. Throughout the different measures across different citing groups, we find OA papers to score higher in diversity. This is also consistently observed for all years included in the analysis. Green OA seems to lead in the diversity scores, which is also consistent with earlier comparisons on numbers of unique citing groups.

The first set of these is based on the Gini-Simpson index:

Figure: The mean GiniSim index of citing Institutions

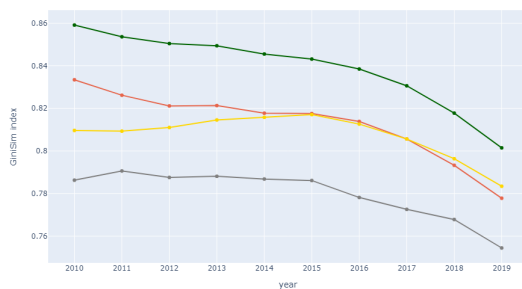


Figure: The median GiniSim index of citing Institutions

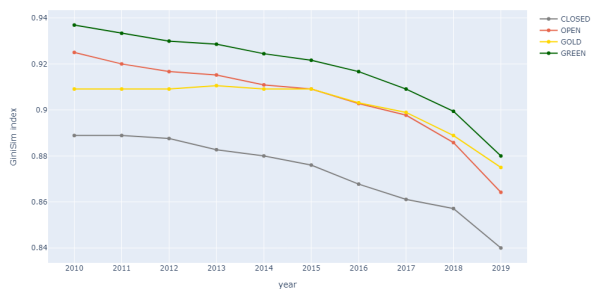


Figure: The mean GiniSim index of citing Countries

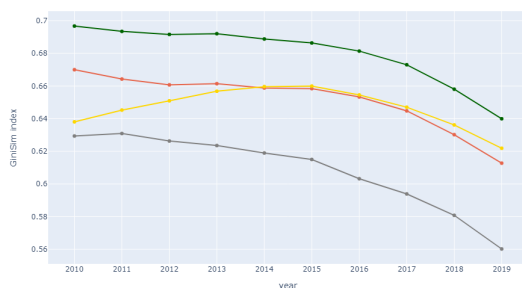


Figure: The median GiniSim index of citing Countries

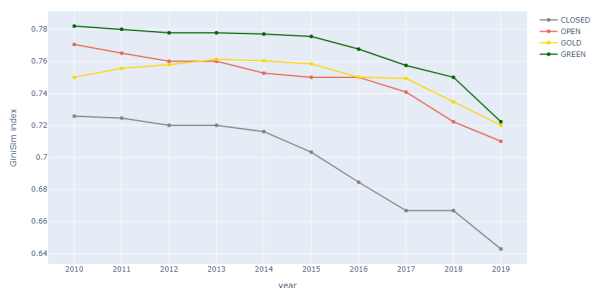


Figure: The mean GiniSim index of citing Subregions

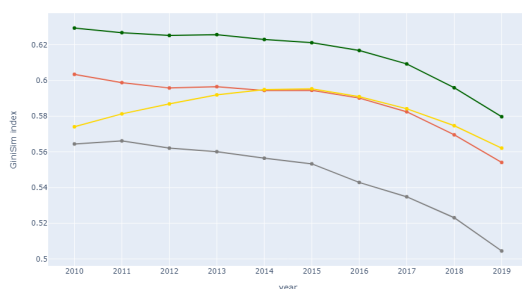


Figure: The median GiniSim index of citing Subregions

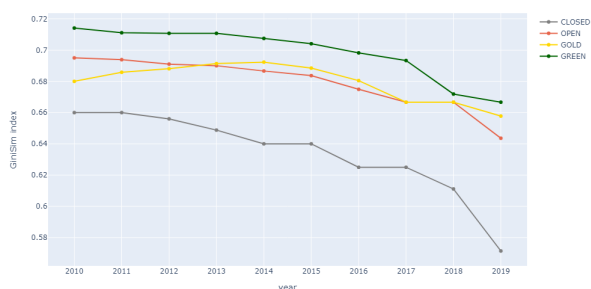


Figure: The mean GiniSim index of citing Regions

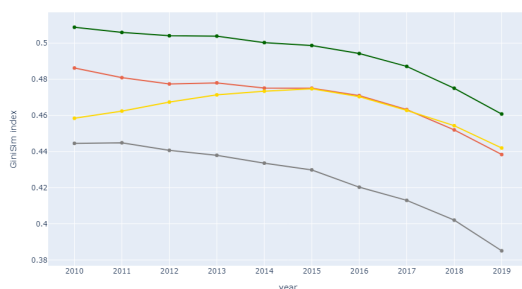


Figure: The median GiniSim index of citing Regions

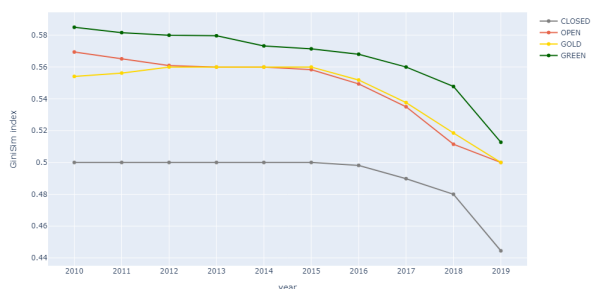


Figure: The mean GiniSim index of citing Fields

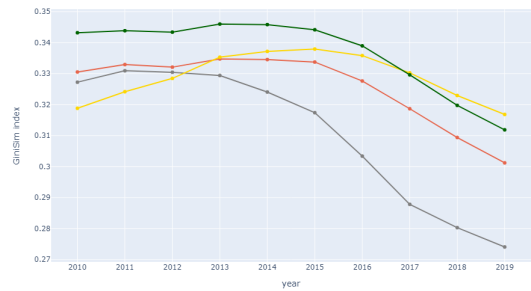
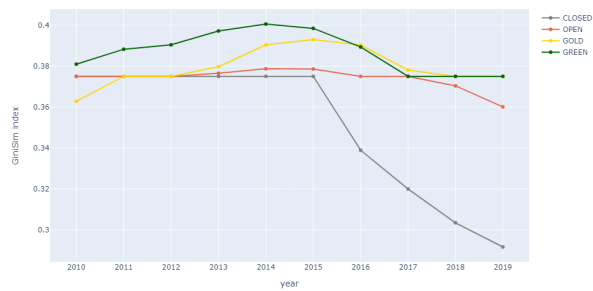


Figure: The median GiniSim index of citing Fields



The next set is based on the Shannon index:

Figure: The mean Shannon index of citing Institutions

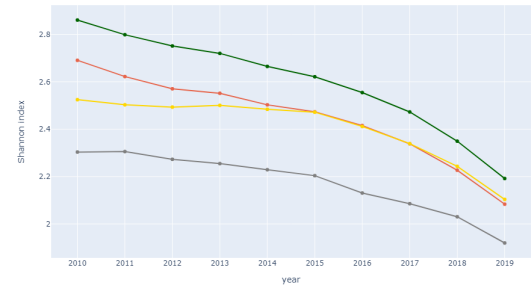


Figure: The median Shannon index of citing Institutions

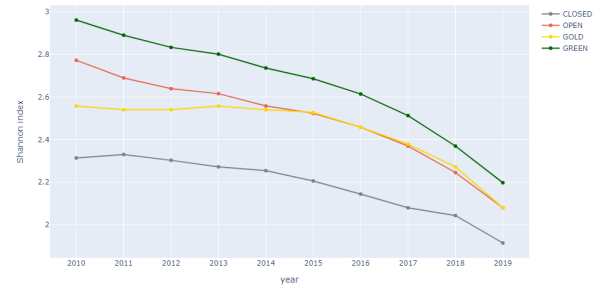


Figure: The mean Shannon index of citing Countries

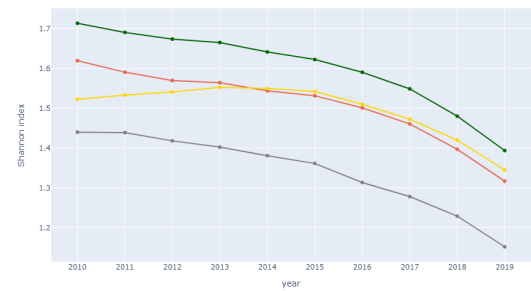


Figure: The median Shannon index of citing Countries

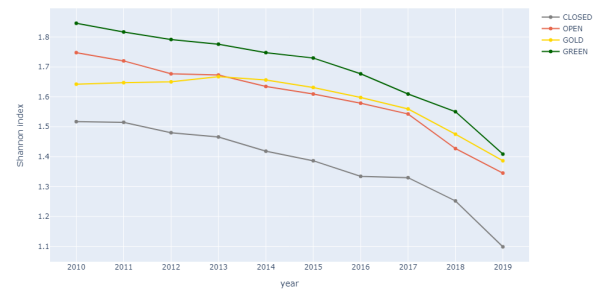


Figure: The mean Shannon index of citing Subregions

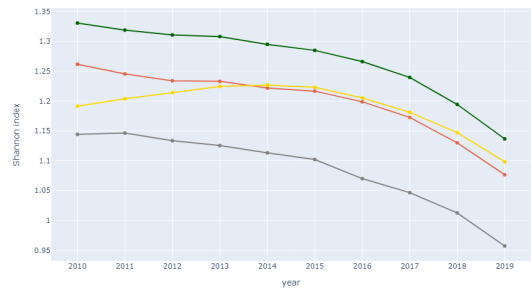


Figure: The median Shannon index of citing Subregions

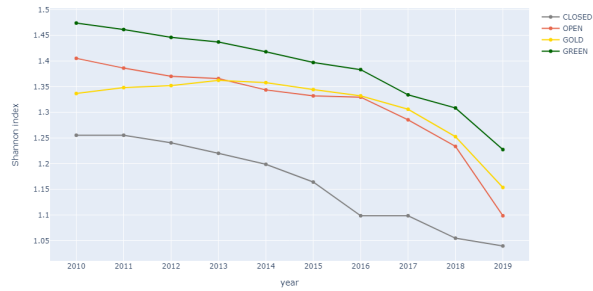


Figure: The mean Shannon index of citing Regions

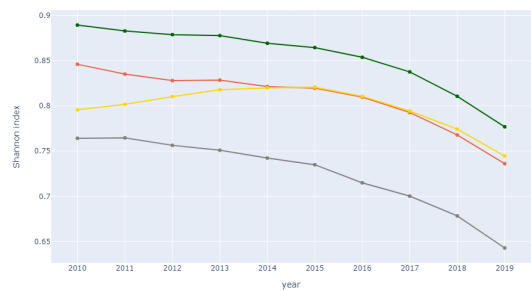


Figure: The median Shannon index of citing Regions

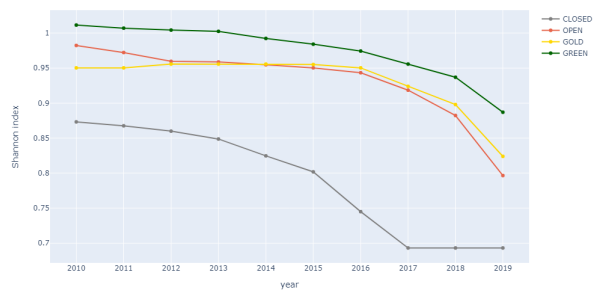


Figure: The mean Shannon index of citing Fields

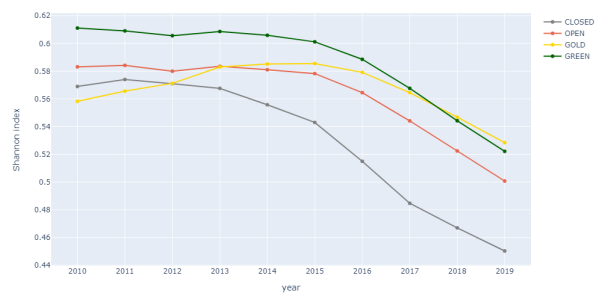
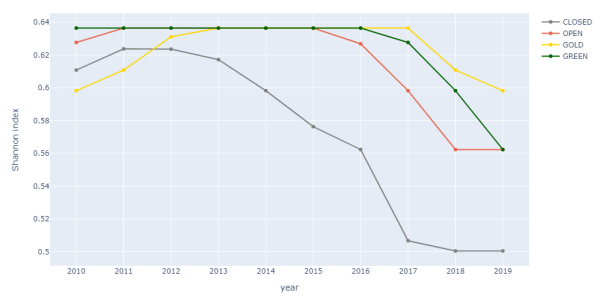


Figure: The median Shannon index of citing Fields



Section E: Citation diversity scores - box plots

In the following figures, the distributions of diversity scores of papers (as per citing group) of different OA categories are compared. Random samples of 10,000 papers from each OA category and 10,000 closed papers are used in this comparison. The skewness towards the lower tails in the case of Gini-Simpson index scores is driven by the high number of papers that receives low number of citations (hence low diversity scores). In line with earlier findings, OA papers produce higher diversity scores. Again, it is interesting to note the raised distribution of Green OA compared to other categories. The non-OA category consistently have a longer lower tail in the Gini-Simpson scores, while Green OA papers often have the shortest lower tail. For the Shannon index, a parallel observation can be made with non-OA papers producing shorter upper tails. We note again the small number effect on some figures.

The first set of these is based on the Gini-Simpson index and institutions as citing groups:

Figure: Box plots of GiniSim index on citing Institutions by OA status for 2010
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

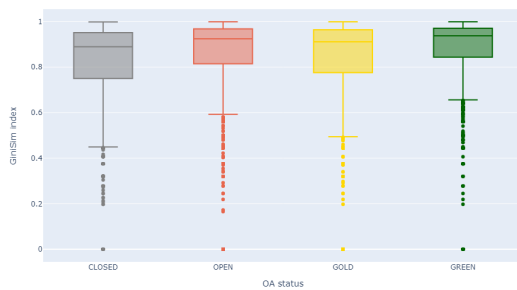


Figure: Box plots of GiniSim index on citing Institutions by OA status for 2011
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

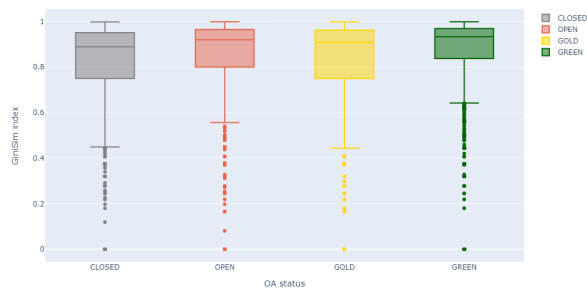


Figure: Box plots of GiniSim index on citing Institutions by OA status for 2012
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

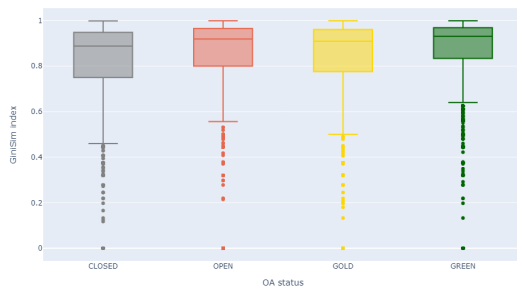


Figure: Box plots of GiniSim index on citing Institutions by OA status for 2013
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

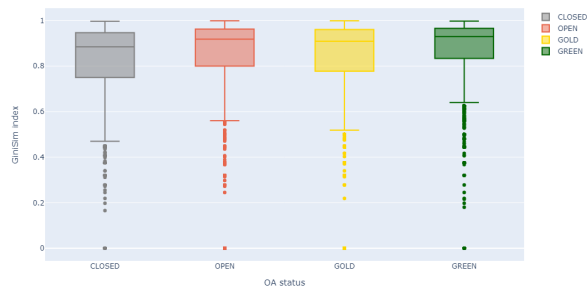


Figure: Box plots of GiniSim index on citing Institutions by OA status for 2014
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

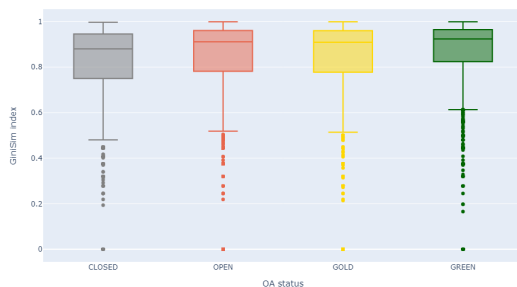


Figure: Box plots of GiniSim index on citing Institutions by OA status for 2015
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

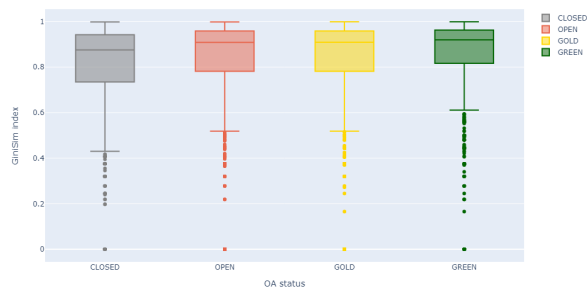


Figure: Box plots of GiniSim index on citing Institutions by OA status for 2016
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

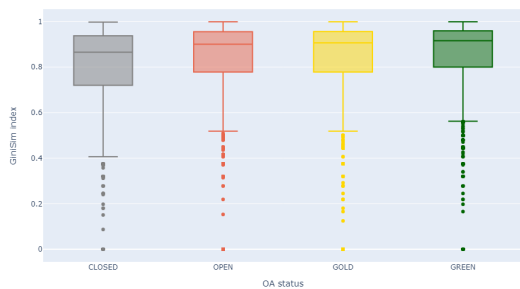


Figure: Box plots of GiniSim index on citing Institutions by OA status for 2017
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

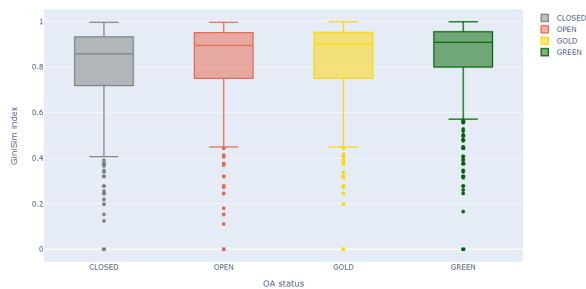


Figure: Box plots of GiniSim index on citing Institutions by OA status for 2018
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

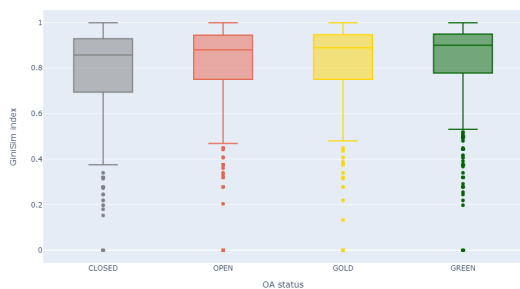
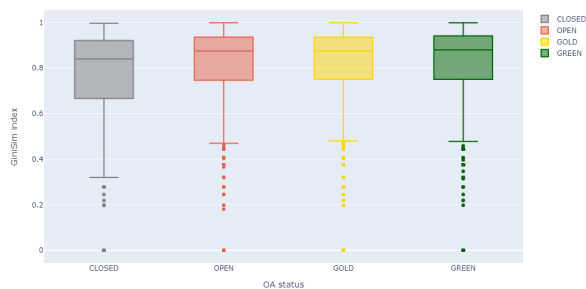


Figure: Box plots of GiniSim index on citing Institutions by OA status for 2019
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)



The next set is based on the Gini-Simpson index and countries as citing groups:

Figure: Box plots of GiniSim index on citing Countries by OA status for 2010
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

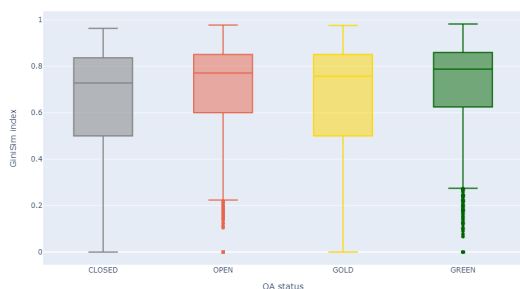


Figure: Box plots of GiniSim index on citing Countries by OA status for 2011
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

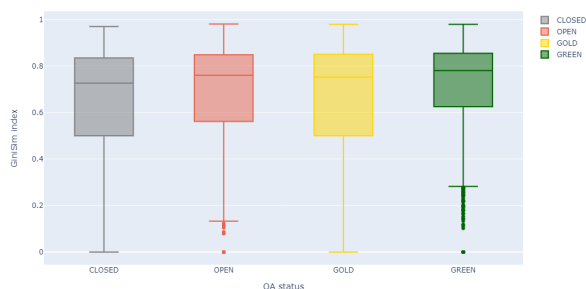


Figure: Box plots of GiniSim index on citing Countries by OA status for 2012
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

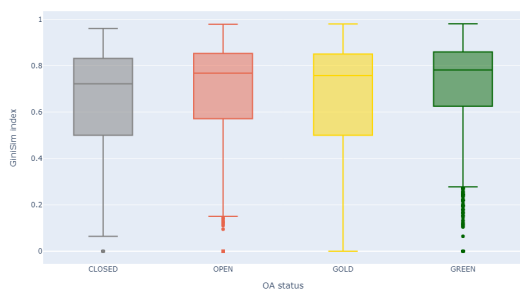


Figure: Box plots of GiniSim index on citing Countries by OA status for 2013
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

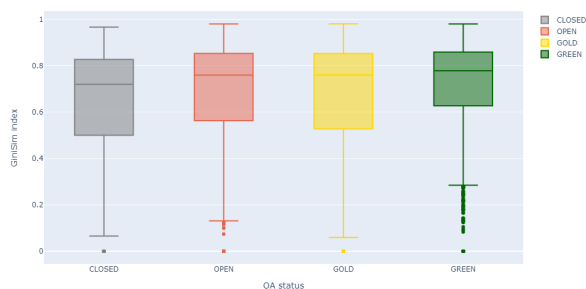


Figure: Box plots of GiniSim index on citing Countries by OA status for 2014
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

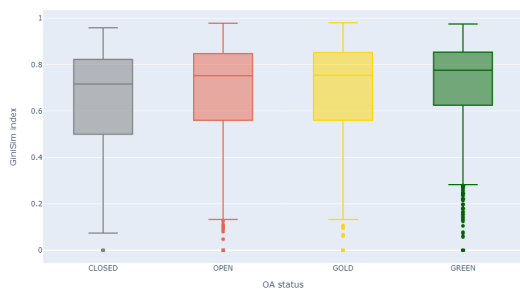
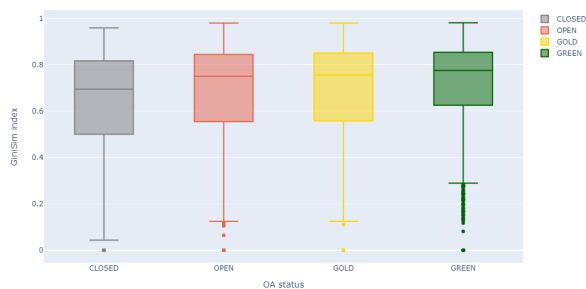


Figure: Box plots of GiniSim index on citing Countries by OA status for 2015
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)



Box plot showing the distribution of GenSim index for four OA status categories: CLOSED, OPEN, GOLD, and GREEN. The y-axis represents the GenSim index from 0 to 1. The x-axis represents the OA status. The distributions are roughly similar, with medians around 0.7-0.8 and some outliers for the GOLD and GREEN groups.

Box plot showing the Genism index for four OA status categories: CLOSED, OPEN, GOLD, and GREEN. The y-axis represents the Genism index from 0 to 1. The legend indicates: CLOSED (grey), OPEN (red), GOLD (yellow), and GREEN (green). The CLOSED group has a median around 0.68, OPEN around 0.75, GOLD around 0.78, and GREEN around 0.78. The GREEN group shows several outliers below the lower whisker.

OA status	Min	Q1	Median	Q3	Max	Outliers
CLOSED	0.05	0.50	0.68	0.80	0.98	0.00
OPEN	0.00	0.52	0.75	0.85	0.98	None
GOLD	0.00	0.50	0.78	0.85	0.98	None
GREEN	0.00	0.58	0.78	0.85	0.98	0.00, 0.05, 0.10, 0.15

Box plot showing the distribution of GenSim index for four OA status categories: CLOSED, OPEN, GOLD, and GREEN. The y-axis represents the GenSim index from 0 to 1. The x-axis represents the OA status. The distributions are roughly similar, with medians around 0.7. The OPEN category has a small outlier near 0.

OA status	Min	Q1	Median	Q3	Max	Outliers
CLOSED	0.00	0.48	0.68	0.78	0.98	None
OPEN	0.00	0.50	0.72	0.83	0.98	0.00
GOLD	0.00	0.50	0.73	0.84	0.98	None
GREEN	0.13	0.57	0.75	0.84	0.98	0.00

Box plot showing the distribution of GenSim Index for four OA status categories: CLOSED, OPEN, GOLD, and GREEN. The y-axis represents the GenSim Index from 0 to 1. The legend indicates the colors for each status: CLOSED (grey), OPEN (red), GOLD (yellow), and GREEN (green).

OA status	Min	Q1	Median	Q3	Max
CLOSED	0.00	0.44	0.64	0.78	0.96
OPEN	0.00	0.50	0.71	0.82	0.98
GOLD	0.10	0.50	0.71	0.82	0.98
GREEN	0.10	0.50	0.71	0.82	0.98

The next set is based on the Gini-Simpson index and Subregions as citing groups:

Box plot showing the distribution of GSIsm index for four OA status categories: CLOSED, OPEN, GOLD, and GREEN. The y-axis represents the GSIsm index from 0 to 0.8. The x-axis represents the OA status. The distributions are roughly similar, with medians around 0.65-0.75 and significant overlap in the interquartile ranges.

Box plot showing the distribution of GSIsm index for four oak status categories: CLOSED, OPEN, GOLD, and GREEN. The y-axis represents the GSIsm index from 0 to 1.0. The legend indicates: CLOSED (grey), OPEN (red), GOLD (yellow), and GREEN (green). Each category has a box plot showing the median, quartiles, and range. The GREEN category shows a significant outlier near 0.

Oak Status	Min	Q1	Median	Q3	Max	Outliers
CLOSED	0.05	0.45	0.65	0.78	0.90	0.00
OPEN	0.00	0.50	0.68	0.78	0.90	0.00
GOLD	0.00	0.48	0.68	0.78	0.90	0.00
GREEN	0.00	0.55	0.72	0.78	0.90	0.00, 0.15, 0.18, 0.19, 0.20, 0.21, 0.22, 0.23, 0.24, 0.25, 0.26, 0.27, 0.28, 0.29, 0.30, 0.31, 0.32, 0.33, 0.34, 0.35, 0.36, 0.37, 0.38, 0.39, 0.40, 0.41, 0.42, 0.43, 0.44, 0.45, 0.46, 0.47, 0.48, 0.49, 0.50, 0.51, 0.52, 0.53, 0.54, 0.55, 0.56, 0.57, 0.58, 0.59, 0.60, 0.61, 0.62, 0.63, 0.64, 0.65, 0.66, 0.67, 0.68, 0.69, 0.70, 0.71, 0.72, 0.73, 0.74, 0.75, 0.76, 0.77, 0.78, 0.79, 0.80, 0.81, 0.82, 0.83, 0.84, 0.85, 0.86, 0.87, 0.88, 0.89, 0.90, 0.91, 0.92, 0.93, 0.94, 0.95, 0.96, 0.97, 0.98, 0.99, 1.00

Box plot showing the distribution of GenSim index for four OA status categories: CLOSED, OPEN, GOLD, and GREEN. The y-axis represents the GenSim index from 0 to 1.0. The x-axis represents the OA status. The distributions are roughly similar, with medians around 0.65-0.75 and significant variability indicated by the whiskers and outliers.

OA status	Min (whisker)	Q1	Median	Q3	Max (whisker)	Outliers
CLOSED	0.00	0.44	0.65	0.76	0.90	None
OPEN	0.10	0.50	0.70	0.78	0.90	0.00
GOLD	0.08	0.50	0.68	0.78	0.90	0.00
GREEN	0.00	0.55	0.73	0.79	0.90	0.00, 0.05

Box plot showing the distribution of GenSim index for four OA status categories: CLOSED, OPEN, GOLD, and GREEN. The y-axis represents the GenSim index from 0 to 1.0. The legend indicates that the colors correspond to the OA status: CLOSED (grey), OPEN (red), GOLD (yellow), and GREEN (green). The plot shows that the GenSim index generally increases with OA status, with the GREEN group having the highest median and the OPEN group having the lowest median.

OA status	Min	Q1	Median	Q3	Max
CLOSED	0.00	0.44	0.65	0.76	0.92
OPEN	0.00	0.50	0.68	0.78	0.92
GOLD	0.08	0.50	0.68	0.78	0.92
GREEN	0.00	0.55	0.73	0.79	0.92

Box plot showing the distribution of GenSim index across four QA status categories: CLOSED, OPEN, GOLD, and GREEN. The y-axis represents the GenSim index from 0 to 1.0. The x-axis represents the QA status. The distributions are: CLOSED (median ~0.65, IQR ~0.45-0.75), OPEN (median ~0.68, IQR ~0.52-0.78), GOLD (median ~0.68, IQR ~0.52-0.78), and GREEN (median ~0.72, IQR ~0.52-0.78).

Box plot showing the distribution of GiniSim index for four OA status categories: CLOSED, OPEN, GOLD, and GREEN. The y-axis represents the GiniSim index from 0 to 1.0. The legend indicates: CLOSED (grey), OPEN (red), GOLD (yellow), and GREEN (green). The plot shows that the GiniSim index generally increases with OA status, with GREEN having the highest median and most outliers.

OA status	Min	Q1	Median	Q3	Max	Outliers
CLOSED	0.00	0.44	0.64	0.75	0.90	None
OPEN	0.00	0.50	0.68	0.78	0.90	0.00
GOLD	0.00	0.50	0.68	0.78	0.90	0.00
GREEN	0.00	0.52	0.72	0.78	0.90	0.00, 0.05, 0.08, 0.10, 0.12, 0.15

Box plot showing the distribution of GenSim index across four OA status categories: CLOSED, OPEN, GOLD, and GREEN. The y-axis represents the GenSim index from 0 to 1.0. The x-axis represents the OA status. The distributions are roughly similar, with medians around 0.6-0.7 and significant variability indicated by long whiskers and outliers.

OA status	Min	Q1	Median	Q3	Max	Outliers
CLOSED	0.00	0.44	0.62	0.76	0.92	None
OPEN	0.00	0.51	0.67	0.78	0.92	0.05, 0.08
GOLD	0.00	0.51	0.68	0.79	0.92	0.05, 0.08
GREEN	0.00	0.51	0.72	0.79	0.92	0.00, 0.05

Box plot showing the Genism index for four OA status categories: CLOSED, OPEN, GOLD, and GREEN. The y-axis represents the Genism index from 0 to 1.0. The legend indicates the colors for each status: CLOSED (grey), OPEN (red), GOLD (yellow), and GREEN (green).

OA status	Min	Q1	Median	Q3	Max
CLOSED	0.00	0.44	0.62	0.74	0.92
OPEN	0.00	0.50	0.67	0.78	0.92
GOLD	0.00	0.50	0.67	0.78	0.92
GREEN	0.00	0.50	0.67	0.78	0.92

Box plot showing the distribution of the GiniSim index for four OA statuses: CLOSED, OPEN, GOLD, and GREEN. The y-axis represents the GiniSim index from 0 to 1.0. The x-axis represents the OA status. The distributions are: CLOSED (median ~0.6, IQR ~0.45-0.75), OPEN (median ~0.65, IQR ~0.5-0.78), GOLD (median ~0.65, IQR ~0.5-0.78), and GREEN (median ~0.65, IQR ~0.5-0.78).

Box plot showing the Genism index for four OA status categories: CLOSED, OPEN, GOLD, and GREEN. The y-axis represents the Genism index from 0 to 1.0. The legend indicates: CLOSED (grey), OPEN (red), GOLD (yellow), and GREEN (green). The CLOSED group has a median around 0.55. The OPEN group has a median around 0.65. The GOLD group has a median around 0.68. The GREEN group has a median around 0.68 and shows several outliers below the lower whisker.

The next set is based on the Gini-Simpson index and Regions as citing groups:

Box plot showing the distribution of the GiniSim index for four OA statuses: CLOSED, OPEN, GOLD, and GREEN. The y-axis represents the GiniSim index from 0 to 0.8. The x-axis represents the OA status. The distributions are: CLOSED (grey box, median ~0.5, IQR ~0.32-0.62), OPEN (red box, median ~0.57, IQR ~0.41-0.64), GOLD (yellow box, median ~0.56, IQR ~0.38-0.64), and GREEN (green box, median ~0.58, IQR ~0.45-0.65). Outliers are present for OPEN and GREEN.

Box plot showing the distribution of GiniSim index for four OA status categories: CLOSED, OPEN, GOLD, and GREEN. The y-axis represents the GiniSim index from 0 to 0.8. The legend indicates: CLOSED (grey), OPEN (red), GOLD (yellow), and GREEN (green). The plot shows that the GiniSim index generally increases with OA status, with GREEN having the highest median and most outliers.

OA status	Min	Q1	Median	Q3	Max	Outliers
CLOSED	0.00	0.34	0.50	0.62	0.79	None
OPEN	0.00	0.41	0.57	0.65	0.79	0.00
GOLD	0.00	0.38	0.56	0.65	0.80	None
GREEN	0.00	0.45	0.58	0.65	0.80	0.00, 0.02, 0.05, 0.10, 0.12

Box plot showing the Genism index for four OA status categories: CLOSED, OPEN, GOLD, and GREEN. The y-axis represents the Genism index from 0 to 0.8. The legend indicates the colors for each status: CLOSED (grey), OPEN (red), GOLD (yellow), and GREEN (green). The plot shows that the Genism index generally increases with OA status, with the GREEN group having the highest median and the OPEN group having the lowest median. The OPEN group also shows a significant outlier near zero.

OA status	Min	Q1	Median	Q3	Max	Outliers
CLOSED	0.00	0.29	0.50	0.62	0.80	None
OPEN	0.00	0.40	0.56	0.64	0.79	0.00
GOLD	0.00	0.39	0.56	0.64	0.79	None
GREEN	0.00	0.45	0.58	0.65	0.80	0.00, 0.05, 0.10, 0.12

A box plot titled 'Gini index' on the y-axis and 'OA status' on the x-axis. The y-axis ranges from 0 to 0.8 with increments of 0.1. The x-axis has four categories: CLOSED, OPEN, GOLD, and GREEN. Each category has a box plot of a different color: CLOSED is grey, OPEN is red, GOLD is yellow, and GREEN is green. The boxes represent the interquartile range (IQR), the horizontal line inside each box is the median, and the whiskers extend to the minimum and maximum values (excluding outliers). The GREEN category has a single outlier point near 0.

OA status	Min	Q1	Median	Q3	Max	Outliers
CLOSED	0.00	0.29	0.50	0.61	0.80	None
OPEN	0.00	0.38	0.55	0.64	0.80	None
GOLD	0.00	0.39	0.55	0.64	0.80	0.00
GREEN	0.00	0.44	0.56	0.64	0.80	0.00, 0.11

Box plot showing the distribution of the Gini index for four OA status categories: CLOSED, OPEN, GOLD, and GREEN. The y-axis represents the Gini index from 0 to 0.8. The legend indicates: CLOSED (grey), OPEN (red), GOLD (yellow), and GREEN (green). The plot shows that the Gini index generally increases with OA status, with the GREEN category having the highest median and most outliers.

OA status	Min	Q1	Median	Q3	Max	Outliers
CLOSED	0.00	0.28	0.49	0.61	0.80	None
OPEN	0.00	0.38	0.54	0.64	0.79	None
GOLD	0.00	0.38	0.54	0.64	0.80	None
GREEN	0.00	0.43	0.57	0.65	0.80	0.00, 0.05, 0.08, 0.10

A box plot showing the distribution of the Genism index across four OA status categories: CLOSED, OPEN, GOLD, and GREEN. The y-axis represents the Genism index, ranging from 0 to 0.8. The x-axis represents the OA status. The distributions are roughly similar, with medians around 0.45-0.55 and significant variability indicated by the whiskers.

OA status	Min	Q1	Median	Q3	Max
CLOSED	0.00	0.25	0.48	0.61	0.80
OPEN	0.00	0.38	0.51	0.63	0.80
GOLD	0.00	0.38	0.53	0.64	0.80
GREEN	0.00	0.40	0.56	0.64	0.80

Box plot showing the Genism index for four OA status categories: CLOSED, OPEN, GOLD, and GREEN. The y-axis represents the Genism index from 0 to 0.8. The legend indicates: CLOSED (grey), OPEN (red), GOLD (yellow), and GREEN (green). The CLOSED group has the highest median (approx. 0.45) and range (approx. 0.2 to 0.8). The OPEN group has a median of approx. 0.5 and range of approx. 0.3 to 0.8. The GOLD group has a median of approx. 0.5 and range of approx. 0.35 to 0.8. The GREEN group has a median of approx. 0.5 and range of approx. 0.35 to 0.8.

The next set is based on the Gini-Simpson index and Fields as citing groups:

A box plot showing the distribution of the gingivitis index for four O&A status categories: CLOSED, OPEN, GOLD, and GREEN. The y-axis represents the gingivitis index, ranging from 0 to 0.9. The x-axis represents the O&A status. The plot shows that the gingivitis index is generally higher for the OPEN and GREEN categories compared to the CLOSED and GOLD categories.

O&A status	Min	Q1	Median	Q3	Max
CLOSED	0.00	0.00	0.38	0.53	0.88
OPEN	0.00	0.05	0.38	0.54	0.88
GOLD	0.00	0.00	0.38	0.52	0.87
GREEN	0.00	0.08	0.39	0.55	0.88

Box plot showing the distribution of GmSim index for four OA status categories: CLOSED, OPEN, GOLD, and GREEN. The y-axis represents the GmSim index from 0 to 0.9. The legend indicates: CLOSED (grey), OPEN (red), GOLD (yellow), and GREEN (green).

OA status	Min	Q1	Median	Q3	Max
CLOSED	0.00	0.00	0.38	0.53	0.85
OPEN	0.00	0.02	0.38	0.53	0.89
GOLD	0.00	0.00	0.38	0.53	0.88
GREEN	0.00	0.08	0.40	0.55	0.87

Box plot showing the distribution of the GiniSim index for four OA status categories: CLOSED, OPEN, GOLD, and GREEN. The y-axis represents the GiniSim index from 0 to 0.9. The x-axis represents the OA status. The distributions are roughly similar, with medians around 0.38-0.40 and ranges from approximately 0.0 to 0.88.

OA status	Min	Q1	Median	Q3	Max
CLOSED	0.00	0.00	0.38	0.52	0.87
OPEN	0.00	0.00	0.38	0.54	0.88
GOLD	0.00	0.00	0.38	0.53	0.88
GREEN	0.00	0.08	0.40	0.55	0.88

Box plot showing the distribution of GiniSim index for four OA status categories: CLOSED, OPEN, GOLD, and GREEN. The y-axis represents the GiniSim index from 0 to 0.9. The legend indicates the colors for each status: CLOSED (grey), OPEN (red), GOLD (yellow), and GREEN (green).

OA status	Min	Q1	Median	Q3	Max
CLOSED	0.00	0.00	0.38	0.54	0.89
OPEN	0.00	0.00	0.38	0.54	0.87
GOLD	0.00	0.00	0.38	0.54	0.89
GREEN	0.00	0.06	0.38	0.54	0.88

Box plot showing the distribution of GenSm index for four OA status categories: CLOSED, OPEN, GOLD, and GREEN. The y-axis represents the GenSm index from 0 to 0.9. The x-axis represents the OA status. The distributions show a general increase in the median GenSm index from CLOSED to GREEN, with GREEN having the highest median and the most spread.

OA status	Min	Q1	Median	Q3	Max
CLOSED	0.00	0.00	0.38	0.52	0.87
OPEN	0.00	0.00	0.38	0.55	0.87
GOLD	0.00	0.00	0.39	0.55	0.87
GREEN	0.00	0.08	0.41	0.56	0.88

Box plot showing the distribution of GenSim index for four OA status categories: CLOSED, OPEN, GOLD, and GREEN. The y-axis represents the GenSim index from 0 to 0.9. The legend indicates: CLOSED (grey), OPEN (red), GOLD (yellow), and GREEN (green).

OA status	Min	Q1	Median	Q3	Max
CLOSED	0.00	0.00	0.37	0.50	0.88
OPEN	0.00	0.00	0.38	0.54	0.88
GOLD	0.00	0.00	0.40	0.55	0.87
GREEN	0.00	0.05	0.40	0.55	0.86

Figure: Box plots of GiniSim index on citing Fields by OA status for 2016
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

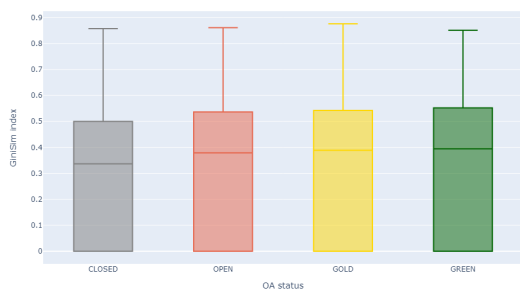


Figure: Box plots of GiniSim index on citing Fields by OA status for 2017
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

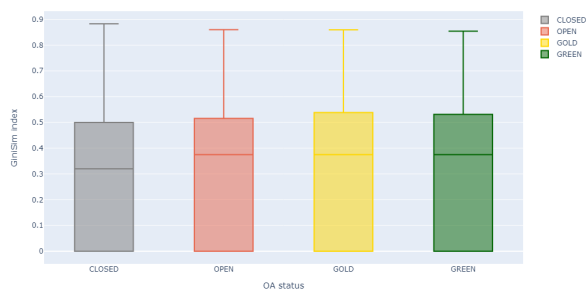


Figure: Box plots of GiniSim index on citing Fields by OA status for 2018
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

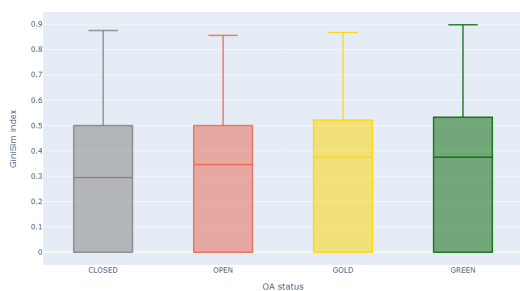
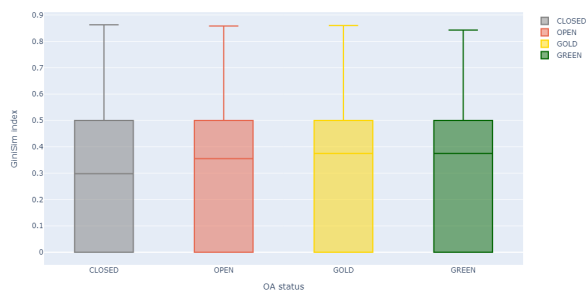


Figure: Box plots of GiniSim index on citing Fields by OA status for 2019
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)



The next set is based on the Shannon index and institutions as citing groups:

Figure: Box plots of Shannon index on citing Institutions by OA status for 2010
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

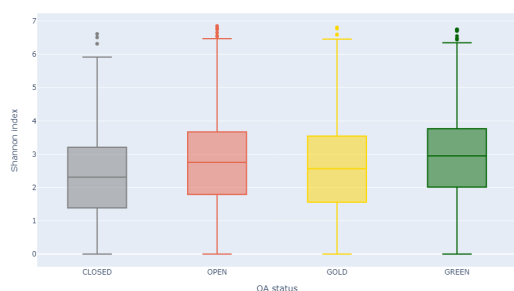


Figure: Box plots of Shannon index on citing Institutions by OA status for 2011
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

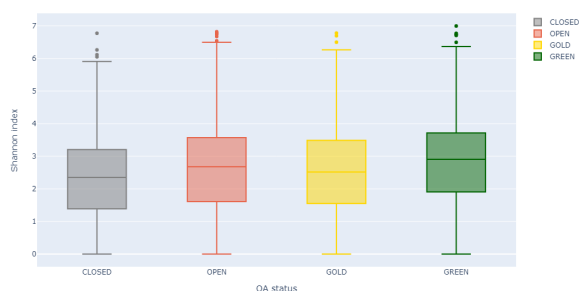


Figure: Box plots of Shannon index on citing Institutions by OA status for 2012
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

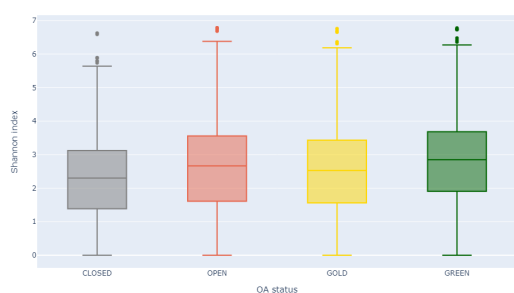


Figure: Box plots of Shannon index on citing Institutions by OA status for 2013
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

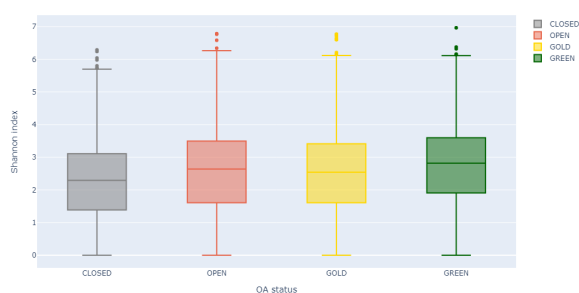


Figure: Box plots of Shannon index on citing Institutions by OA status for 2014
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

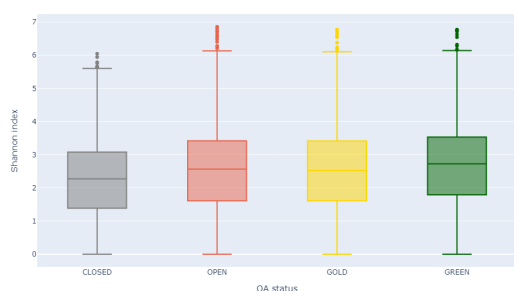


Figure: Box plots of Shannon index on citing Institutions by OA status for 2015
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

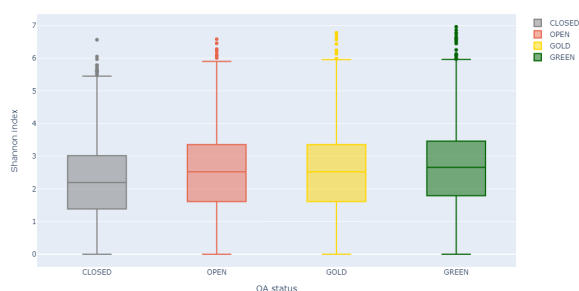


Figure: Box plots of Shannon index on citing Institutions by OA status for 2016
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

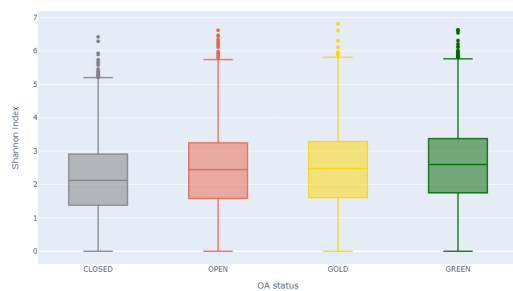


Figure: Box plots of Shannon index on citing Institutions by OA status for 2017
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

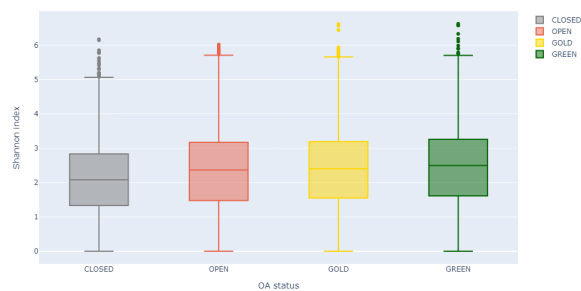


Figure: Box plots of Shannon index on citing Institutions by OA status for 2018
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

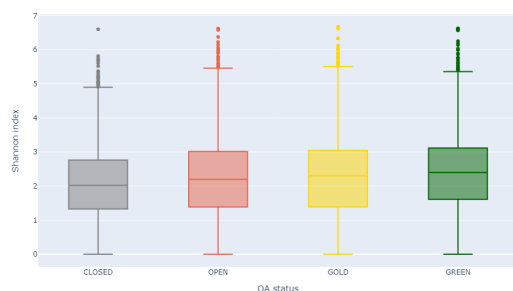
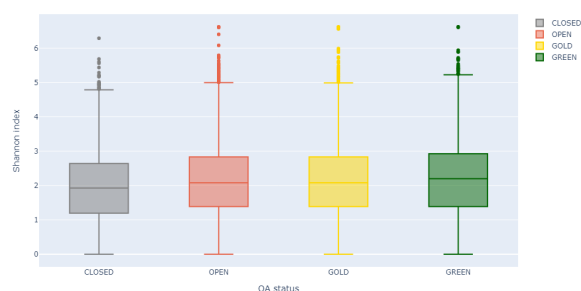


Figure: Box plots of Shannon index on citing Institutions by OA status for 2019
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)



The next set is based on the Shannon index and countries as citing groups:

Figure: Box plots of Shannon index on citing Countries by OA status for 2010
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

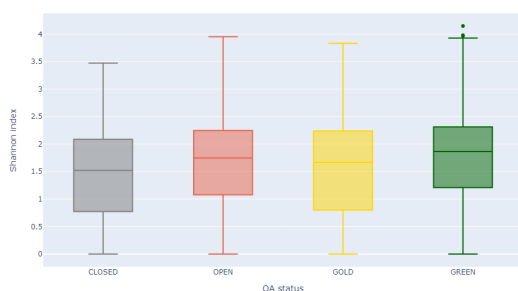


Figure: Box plots of Shannon index on citing Countries by OA status for 2011
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

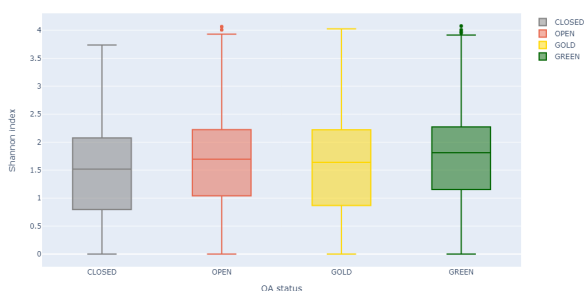


Figure: Box plots of Shannon index on citing Countries by OA status for 2012
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

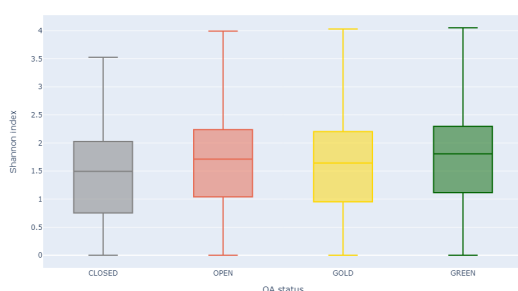


Figure: Box plots of Shannon index on citing Countries by OA status for 2013
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

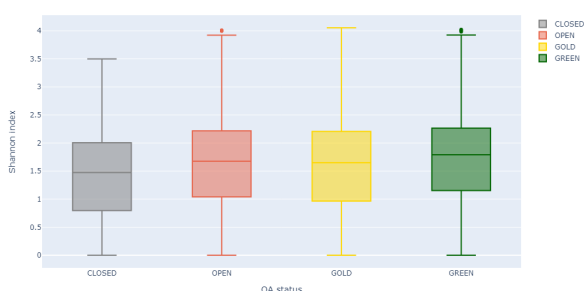


Figure: Box plots of Shannon index on citing Countries by OA status for 2014
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

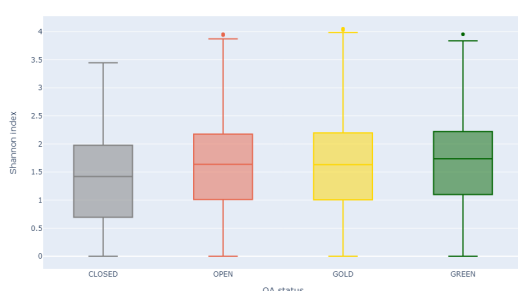


Figure: Box plots of Shannon index on citing Countries by OA status for 2015
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

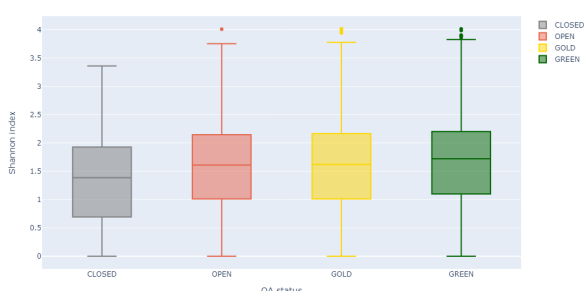


Figure: Box plots of Shannon index on citing Countries by OA status for 2016
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

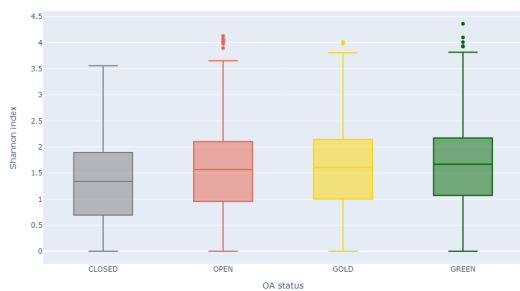


Figure: Box plots of Shannon index on citing Countries by OA status for 2017
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)



Figure: Box plots of Shannon index on citing Countries by OA status for 2018
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

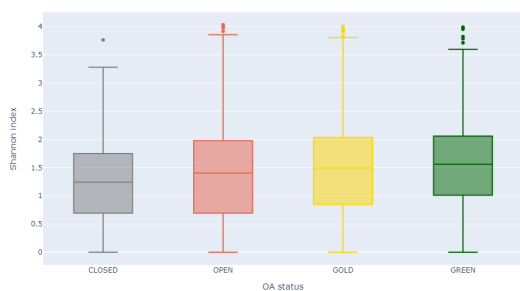
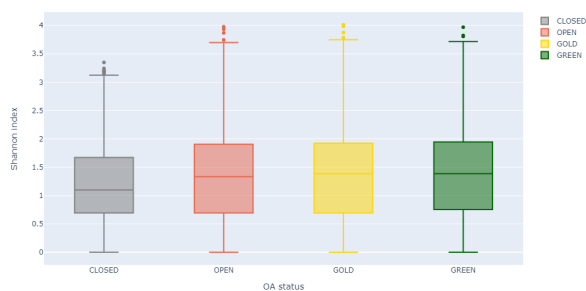


Figure: Box plots of Shannon index on citing Countries by OA status for 2019
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)



The next set is based on the Shannon index and Subregions as citing groups:

Figure: Box plots of Shannon index on citing Subregions by OA status for 2010
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

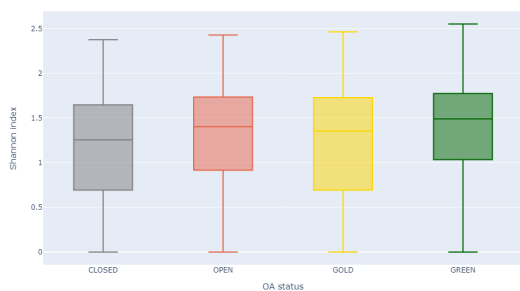


Figure: Box plots of Shannon index on citing Subregions by OA status for 2011
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

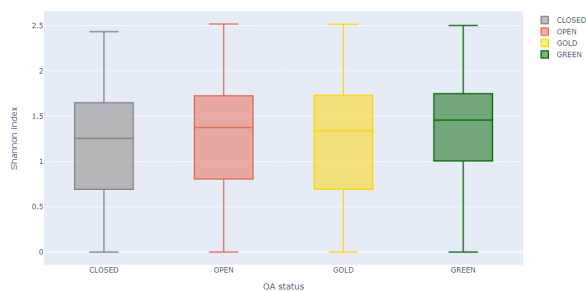


Figure: Box plots of Shannon index on citing Subregions by OA status for 2012
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

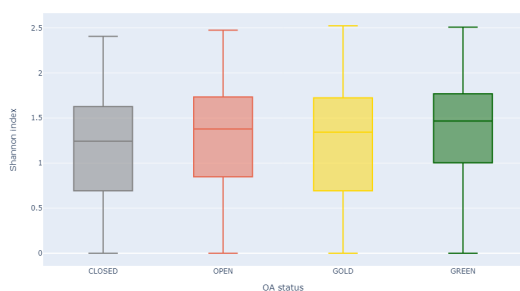


Figure: Box plots of Shannon index on citing Subregions by OA status for 2013
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

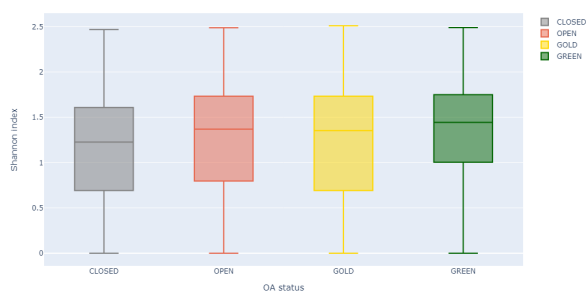


Figure: Box plots of Shannon index on citing Subregions by OA status for 2014
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

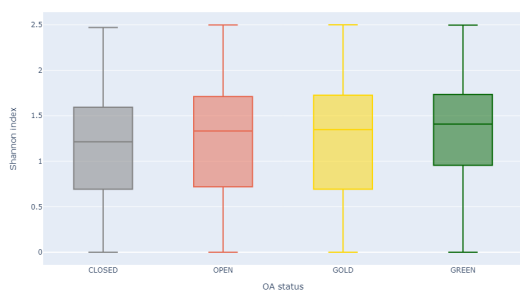


Figure: Box plots of Shannon index on citing Subregions by OA status for 2015
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

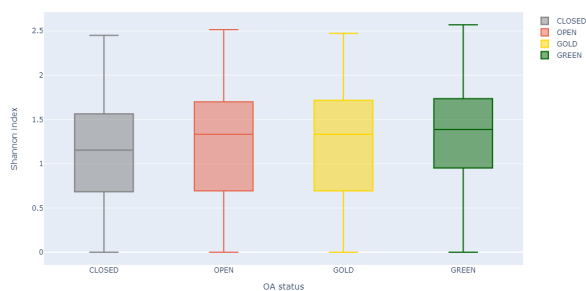


Figure: Box plots of Shannon index on citing Subregions by OA status for 2016
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

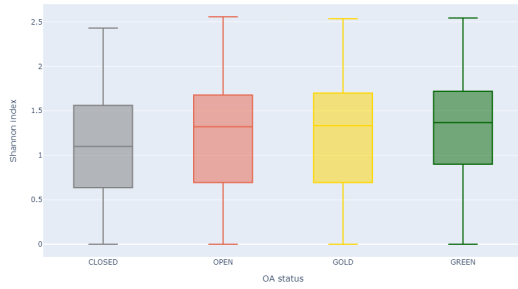


Figure: Box plots of Shannon index on citing Subregions by OA status for 2017
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

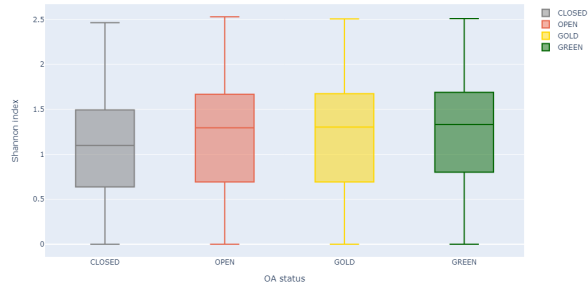


Figure: Box plots of Shannon index on citing Subregions by OA status for 2018
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

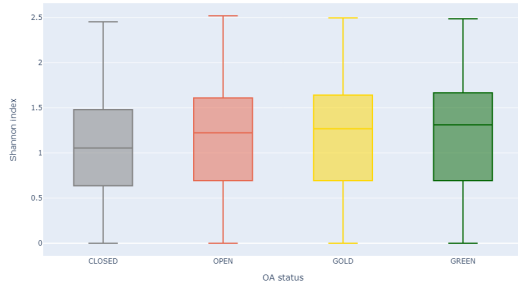
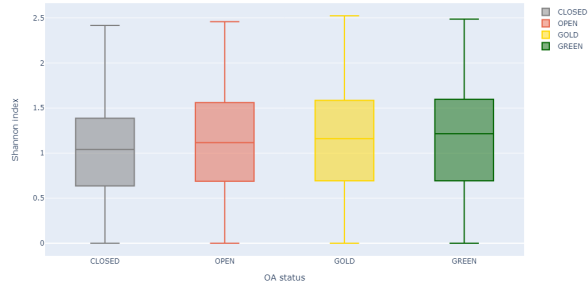


Figure: Box plots of Shannon index on citing Subregions by OA status for 2019
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)



The next set is based on the Shannon index and Regions as citing groups:

Figure: Box plots of Shannon index on citing Regions by OA status for 2010
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

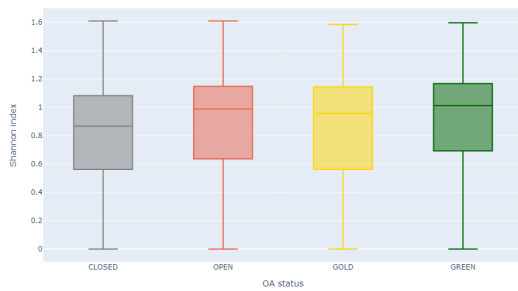


Figure: Box plots of Shannon index on citing Regions by OA status for 2011
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

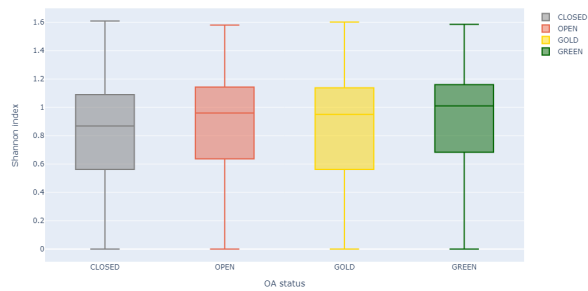


Figure: Box plots of Shannon index on citing Regions by OA status for 2012
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)



Figure: Box plots of Shannon index on citing Regions by OA status for 2013
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

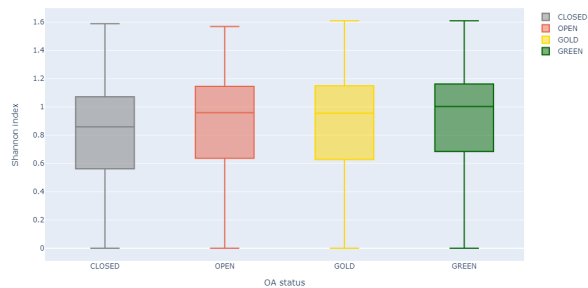


Figure: Box plots of Shannon index on citing Regions by OA status for 2014
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

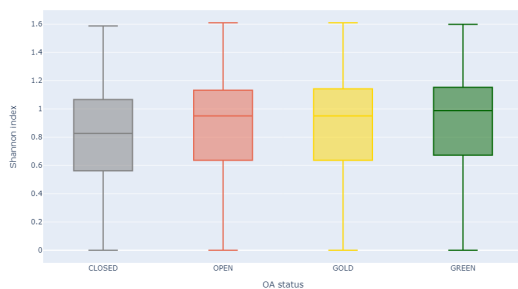
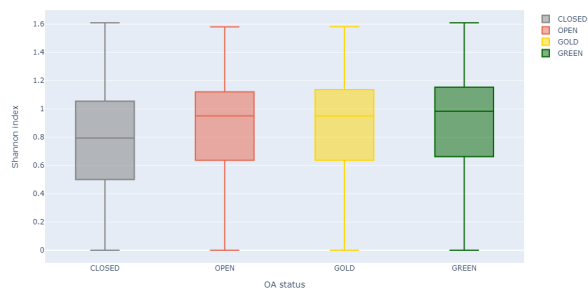
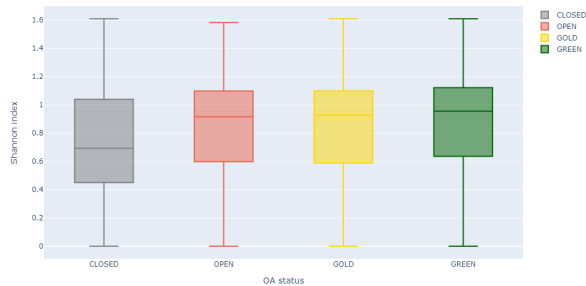


Figure: Box plots of Shannon index on citing Regions by OA status for 2015
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)



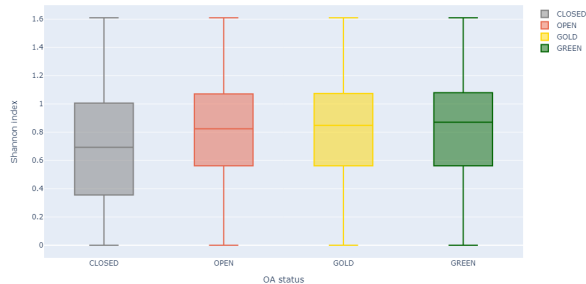
Box plot showing the Shannon index (Y-axis, ranging from 0 to 1.6) across four OA status categories (X-axis): CLOSED, OPEN, GOLD, and GREEN. The plot indicates that the Shannon index generally increases with OA status, with GREEN having the highest median and OPEN having the highest range.

OA status	Median	Q1	Q3	Min	Max
CLOSED	~0.72	~0.50	~1.05	~0.00	~1.60
OPEN	~0.95	~0.65	~1.10	~0.00	~1.60
GOLD	~0.95	~0.65	~1.10	~0.00	~1.60
GREEN	~0.98	~0.65	~1.15	~0.00	~1.60



Box plot showing the Shannon index (Y-axis, 0 to 1.6) for four OA status categories (X-axis): CLOSED, OPEN, GOLD, and GREEN. The plot indicates that the OPEN category has the highest median Shannon index, followed by GOLD, GREEN, and CLOSED.

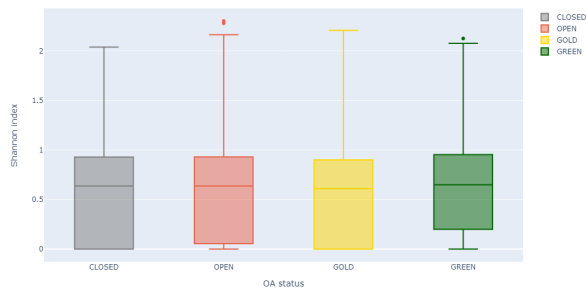
OA status	Median	Q1	Q3	Min	Max
CLOSED	~0.68	~0.45	~1.05	~0.00	~1.60
OPEN	~0.88	~0.55	~1.08	~0.00	~1.60
GOLD	~0.92	~0.58	~1.10	~0.00	~1.60
GREEN	~0.95	~0.65	~1.10	~0.00	~1.60



The next set is based on the Shannon index and Fields as citing groups:

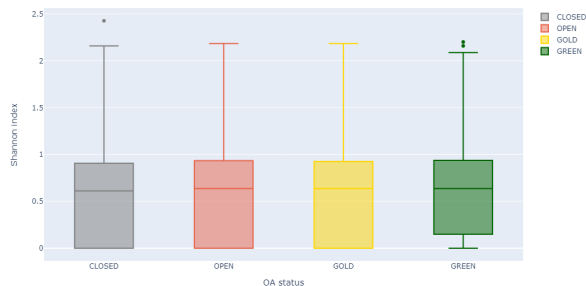
Box plot showing the Shannon index (Y-axis, 0 to 2.5) for four OA status categories (X-axis): CLOSED, OPEN, GOLD, and GREEN. The plot indicates that the Shannon index generally increases with the degree of OA, with GREEN having the highest median and most outliers.

OA status	Median	Q1	Q3	Min	Max	Outliers
CLOSED	~0.6	~0.0	~0.9	~0.0	~2.2	None
OPEN	~0.6	~0.1	~0.9	~0.0	~2.2	~2.3
GOLD	~0.6	~0.0	~0.9	~0.0	~2.2	None
GREEN	~0.6	~0.2	~0.9	~0.0	~2.2	~2.3, ~2.4, ~2.5



Box plot showing the Shannon index (Y-axis, 0 to 2) for four OA status categories (X-axis): CLOSED, OPEN, GOLD, and GREEN. The plot indicates that the Shannon index generally increases with OA status, with GREEN having the highest median and most outliers.

OA status	Median	Q1	Q3	Min	Max	Outliers
CLOSED	~0.65	~0.0	~0.9	~0.0	~2.1	None
OPEN	~0.65	~0.0	~0.95	~0.0	~2.2	None
GOLD	~0.65	~0.0	~0.95	~0.0	~2.3	None
GREEN	~0.65	~0.2	~0.95	~0.0	~2.2	~2.3, ~2.4, ~2.5



Box plot showing the Shannon index (Y-axis, ranging from 0 to 2) for four OA status categories (X-axis): CLOSED, OPEN, GOLD, and GREEN. The plot indicates that the Shannon index generally increases with OA status, with GREEN having the highest median and a significant outlier.

OA status	Median	Q1	Q3	Min	Max	Outliers
CLOSED	~0.6	~0.0	~0.9	~0.0	~2.1	None
OPEN	~0.65	~0.0	~0.95	~0.0	~2.2	None
GOLD	~0.65	~0.0	~0.95	~0.0	~2.2	None
GREEN	~0.65	~0.2	~1.0	~0.0	~2.1	~2.3

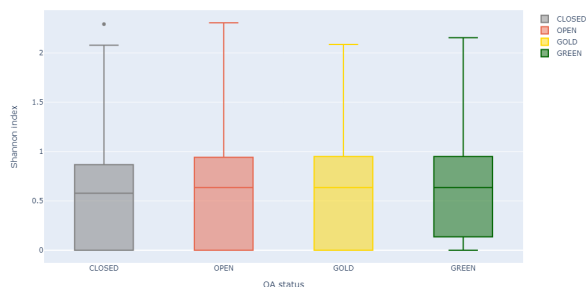


Figure: Box plots of Shannon index on citing Fields by OA status for 2016
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

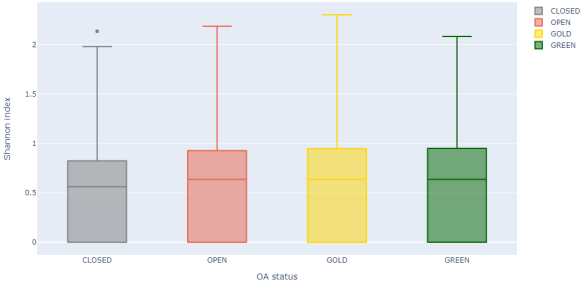


Figure: Box plots of Shannon index on citing Fields by OA status for 2017
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

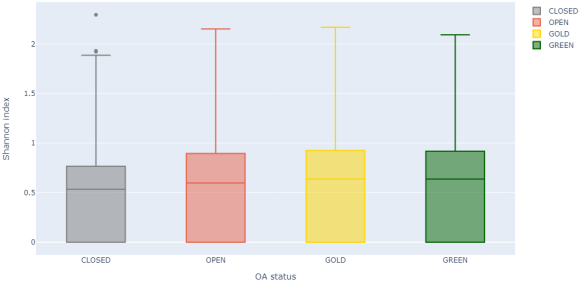


Figure: Box plots of Shannon index on citing Fields by OA status for 2018
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)

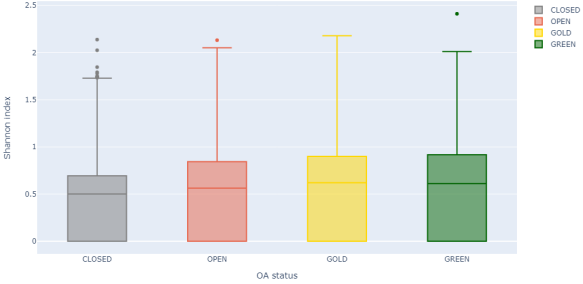
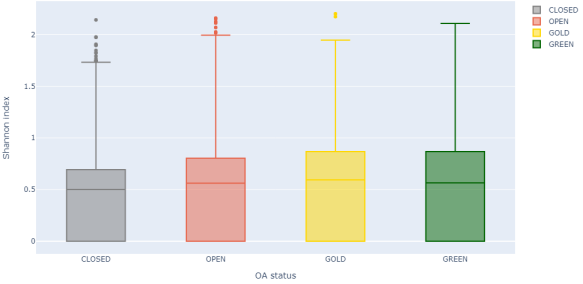


Figure: Box plots of Shannon index on citing Fields by OA status for 2019
(samples of 10000 non-OA, 10000 OA, 10000 gold and 10000 green papers.)



Section F: Citation diversity scores - density estimation

We apply kernel density estimation (KDE) to citation diversity scores for each year, type of citing group, and diversity measure. These are paired with the corresponding histograms. Samples used contain 10,000 OA papers and 10,000 non-OA papers for each publication year. These graphs provide overviews of the distributions of citation diversity scores. The clusters around zero, and around 0.5 for Gini-Simpson index and around 0.6 for Shannon index, are results of large portions of low-citation papers. The most important signal from these graphs is the consistently better performance of the OA papers. This can be seen from the upward shifts of the distributions, decreases of proportions of papers with low scores (including the cluster around zero), and the heavier upper tails, for the OA papers.

The first set of these is based on the Gini-Simpson index and institutions as citing groups:

Figure: KDE of GiniSim scores on citing Institutions for 2010

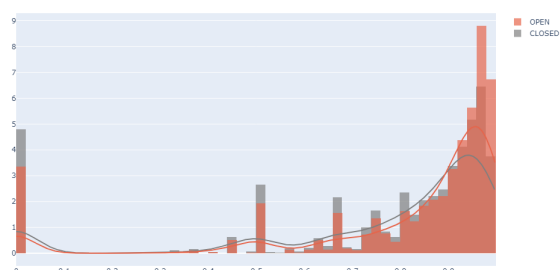


Figure: KDE of GiniSim scores on citing Institutions for 2011

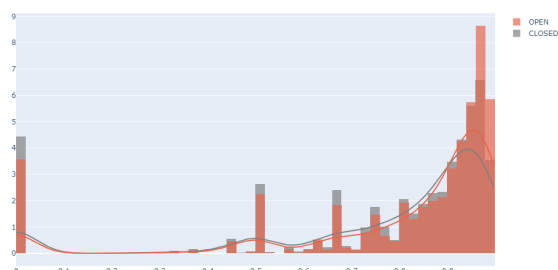


Figure: KDE of GiniSim scores on citing Institutions for 2012

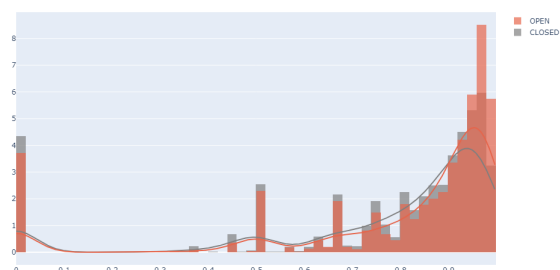


Figure: KDE of GiniSim scores on citing Institutions for 2013

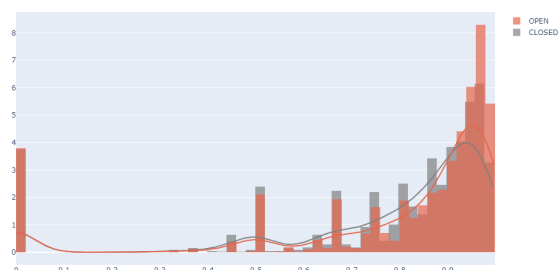


Figure: KDE of GiniSim scores on citing Institutions for 2014

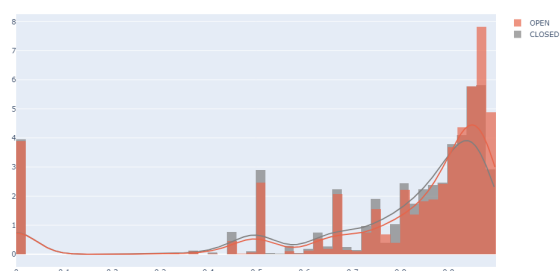


Figure: KDE of GiniSim scores on citing Institutions for 2015

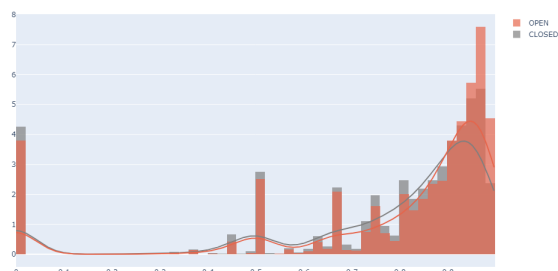


Figure: KDE of GiniSim scores on citing Institutions for 2016

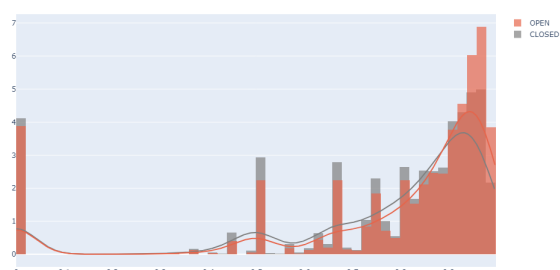


Figure: KDE of GiniSim scores on citing Institutions for 2017

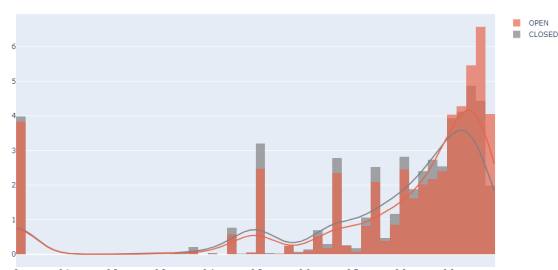


Figure: KDE of GiniSim scores on citing Institutions for 2018

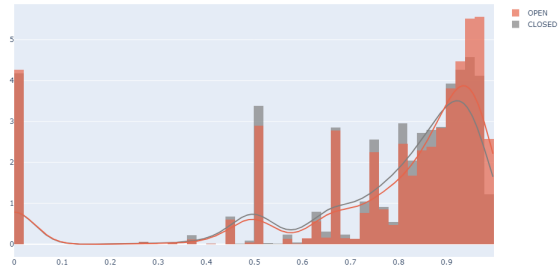
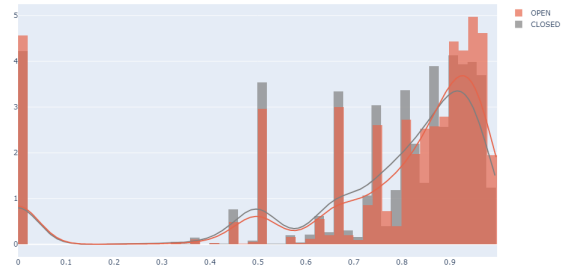


Figure: KDE of GiniSim scores on citing Institutions for 2019



The first set of these is based on the Gini-Simpson index and countries as citing groups:

Figure: KDE of GiniSim scores on citing Countries for 2010

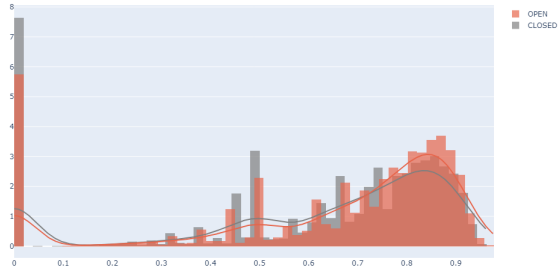


Figure: KDE of GiniSim scores on citing Countries for 2011

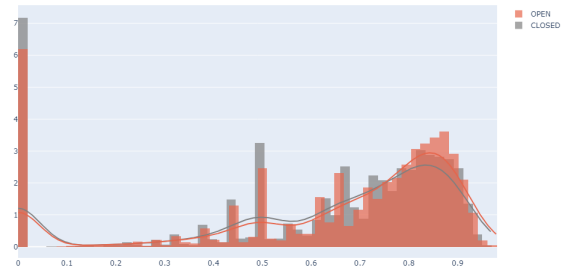


Figure: KDE of GiniSim scores on citing Countries for 2012

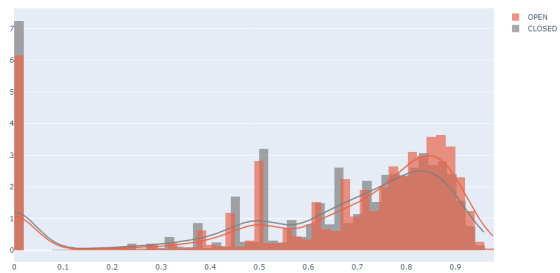


Figure: KDE of GiniSim scores on citing Countries for 2013

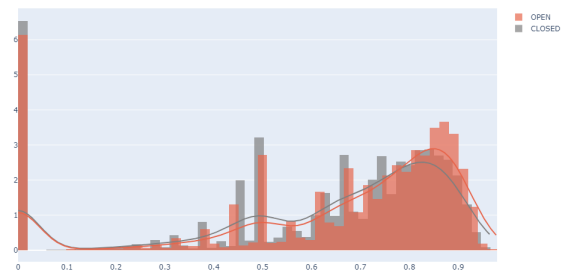


Figure: KDE of GiniSim scores on citing Countries for 2014

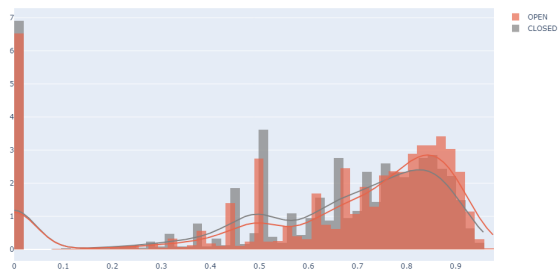


Figure: KDE of GiniSim scores on citing Countries for 2015

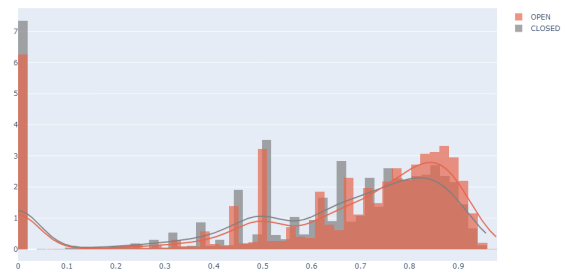


Figure: KDE of GiniSim scores on citing Countries for 2016

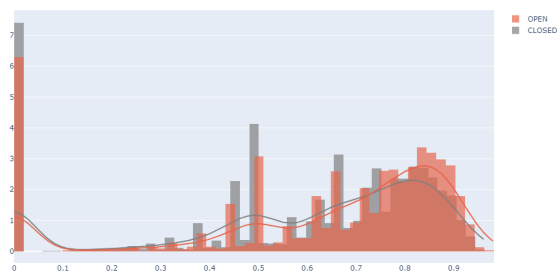


Figure: KDE of GiniSim scores on citing Countries for 2017

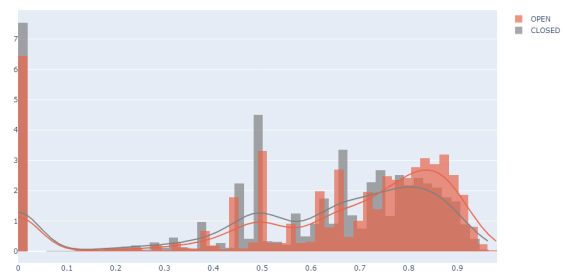


Figure: KDE of GiniSim scores on citing Countries for 2018

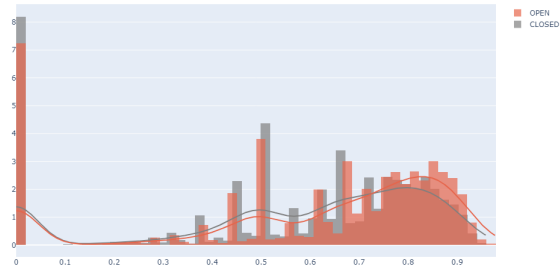
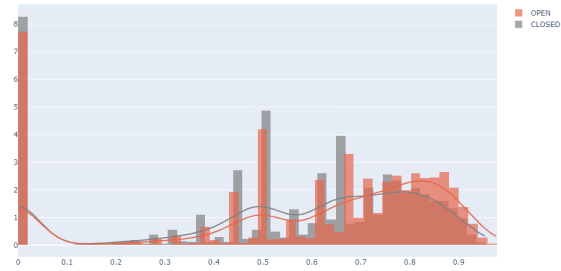


Figure: KDE of GiniSim scores on citing Countries for 2019



The first set of these is based on the Gini-Simpson index and subregions as citing groups:

Figure: KDE of GiniSim scores on citing Subregions for 2010

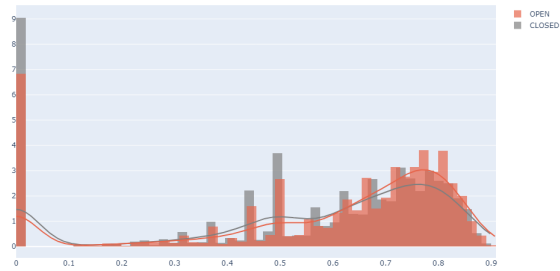


Figure: KDE of GiniSim scores on citing Subregions for 2011

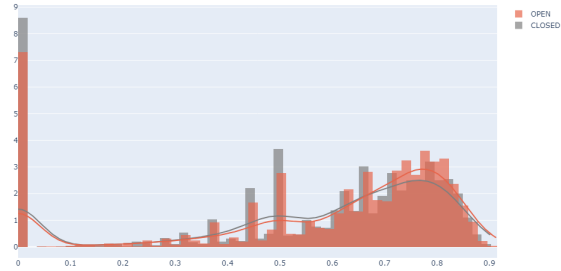


Figure: KDE of GiniSim scores on citing Subregions for 2012

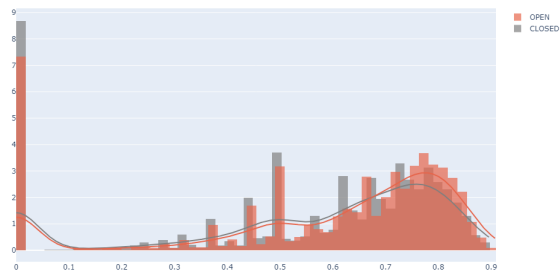


Figure: KDE of GiniSim scores on citing Subregions for 2013

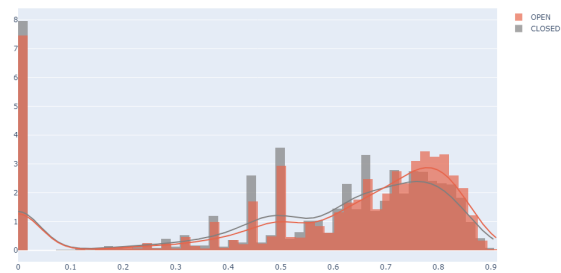


Figure: KDE of GiniSim scores on citing Subregions for 2014

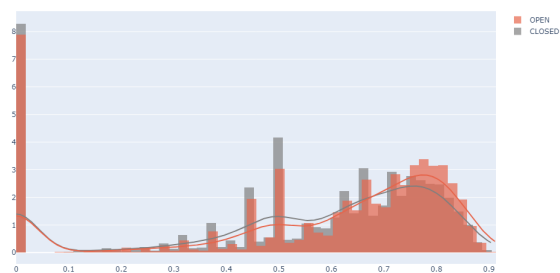


Figure: KDE of GiniSim scores on citing Subregions for 2015

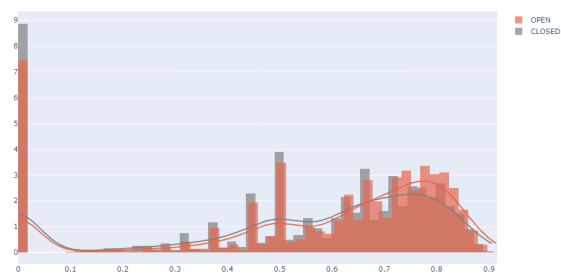


Figure: KDE of GiniSim scores on citing Subregions for 2016

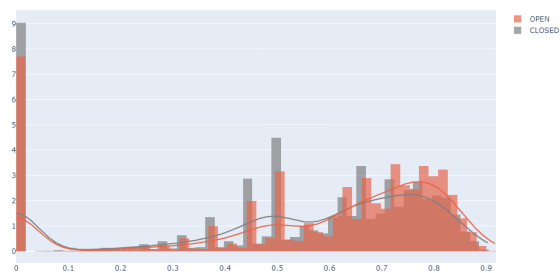


Figure: KDE of GiniSim scores on citing Subregions for 2017

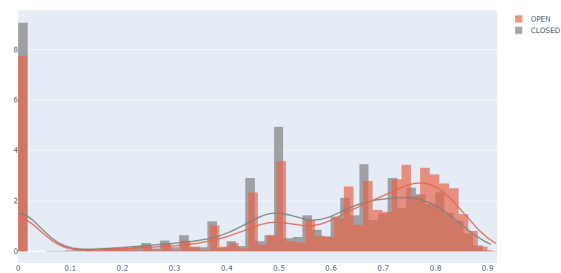


Figure: KDE of GiniSim scores on citing Subregions for 2018

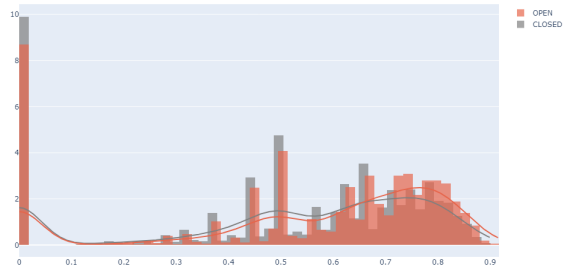
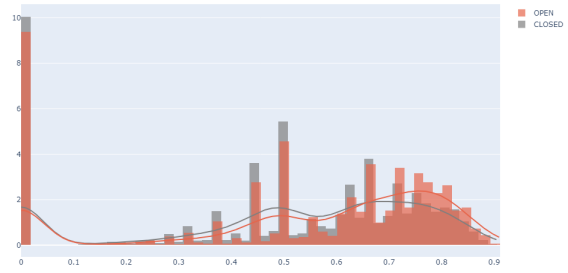


Figure: KDE of GiniSim scores on citing Subregions for 2019



The first set of these is based on the Gini-Simpson index and regions as citing groups:

Figure: KDE of GiniSim scores on citing Regions for 2010

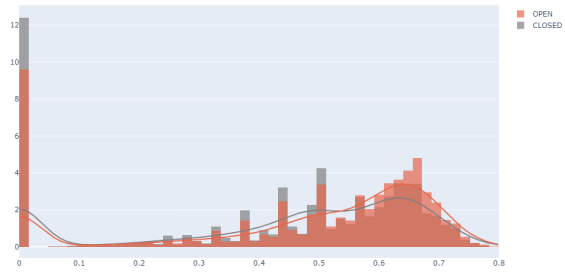


Figure: KDE of GiniSim scores on citing Regions for 2011

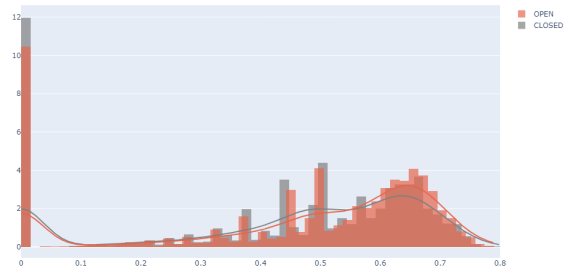


Figure: KDE of GiniSim scores on citing Regions for 2012

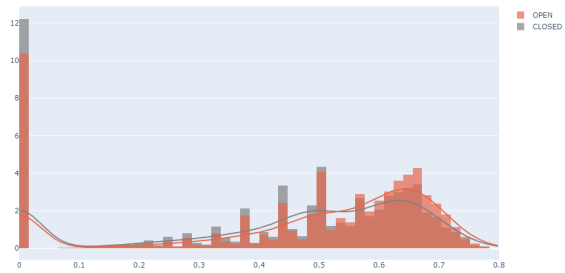


Figure: KDE of GiniSim scores on citing Regions for 2013

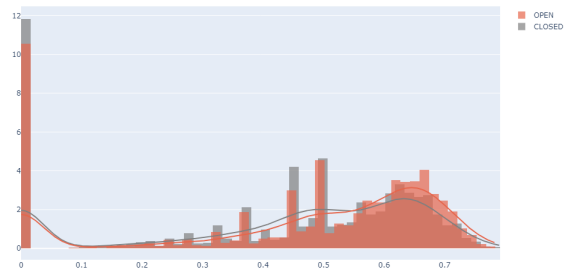


Figure: KDE of GiniSim scores on citing Regions for 2014

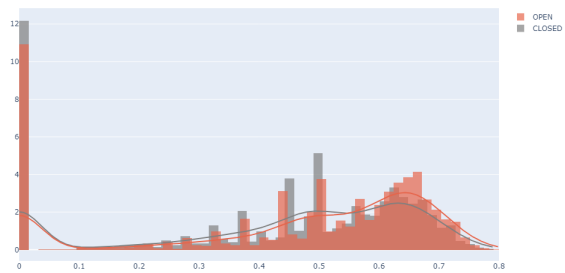


Figure: KDE of GiniSim scores on citing Regions for 2015

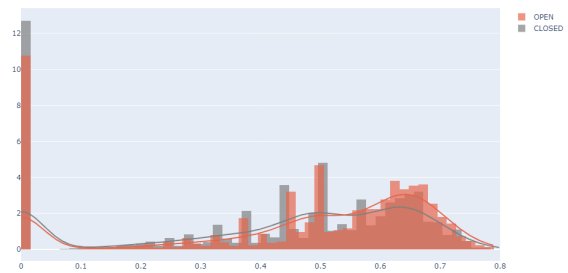


Figure: KDE of GiniSim scores on citing Regions for 2016

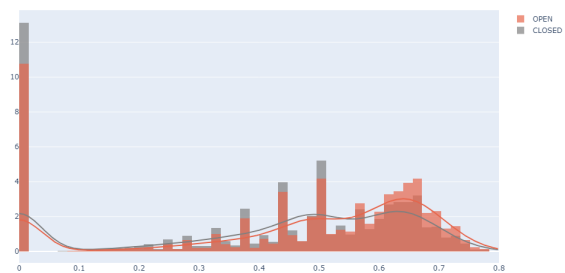
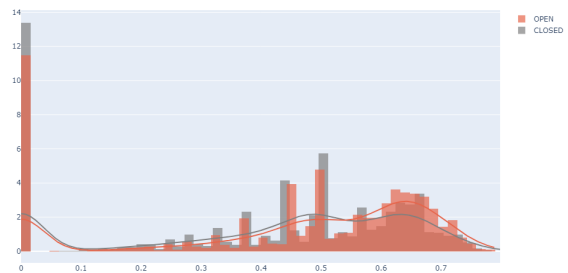
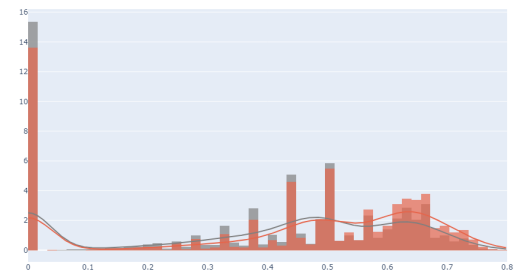


Figure: KDE of GiniSim scores on citing Regions for 2017





The first set of these is based on the Gini-Simpson index and fields as citing groups:

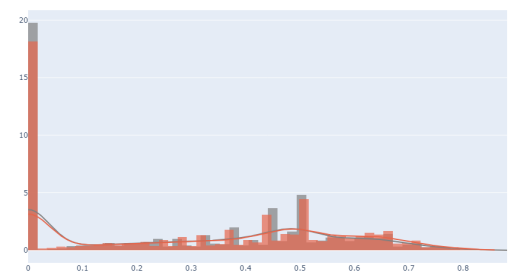
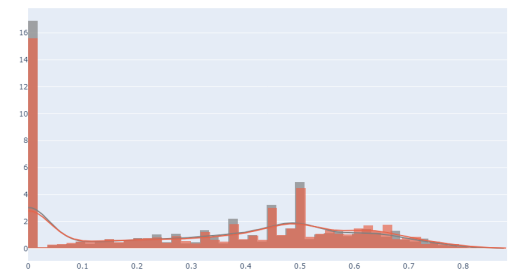
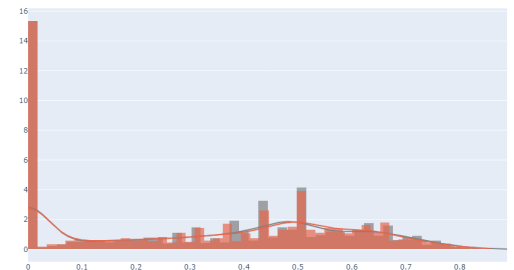
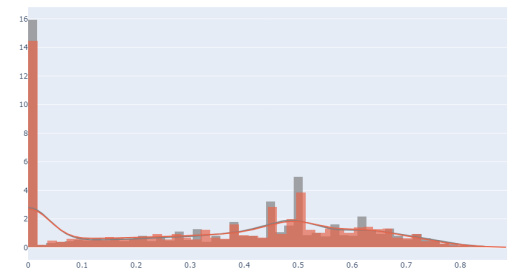


Figure: KDE of GiniSim scores on citing Fields for 2018

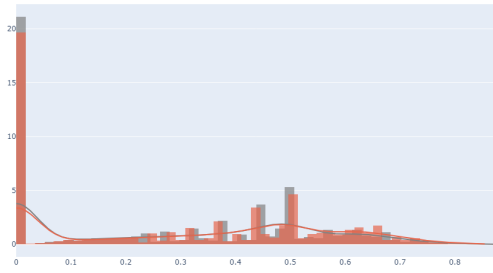
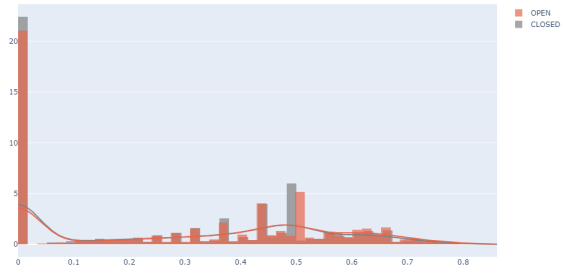


Figure: KDE of GiniSim scores on citing Fields for 2019



The first set of these is based on the Shannon index and institutions as citing groups:

Figure: KDE of Shannon scores on citing Institutions for 2010

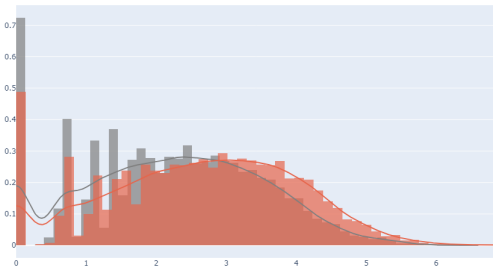


Figure: KDE of Shannon scores on citing Institutions for 2011

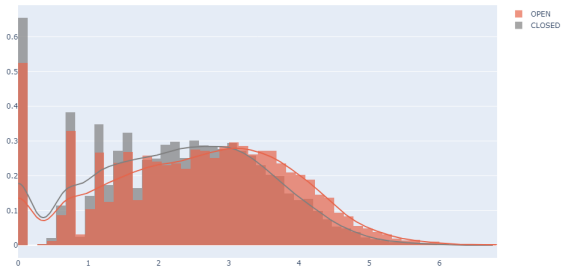


Figure: KDE of Shannon scores on citing Institutions for 2012

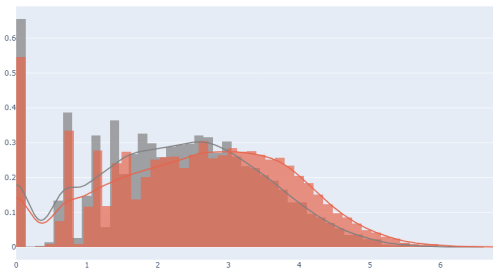


Figure: KDE of Shannon scores on citing Institutions for 2013

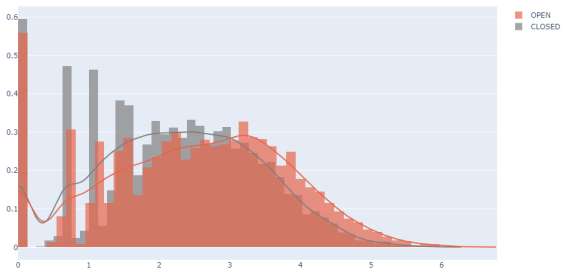


Figure: KDE of Shannon scores on citing Institutions for 2014

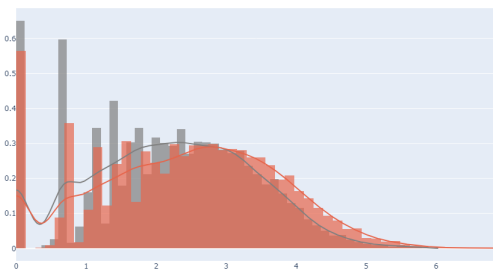


Figure: KDE of Shannon scores on citing Institutions for 2015

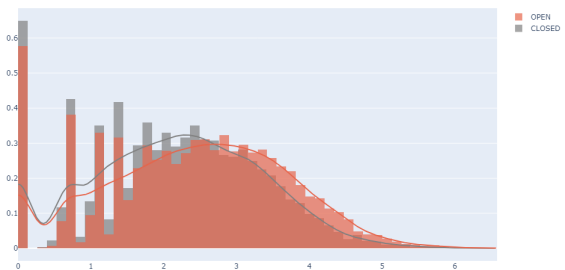


Figure: KDE of Shannon scores on citing Institutions for 2016

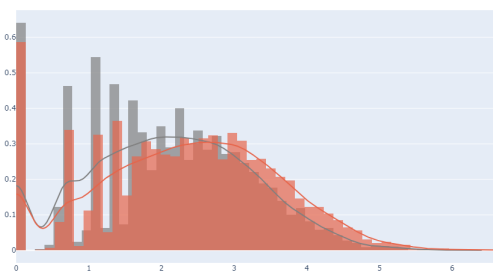


Figure: KDE of Shannon scores on citing Institutions for 2017

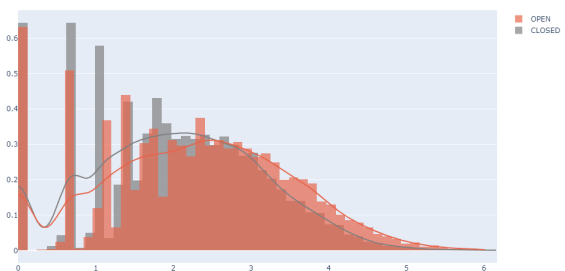


Figure: KDE of Shannon scores on citing Institutions for 2018

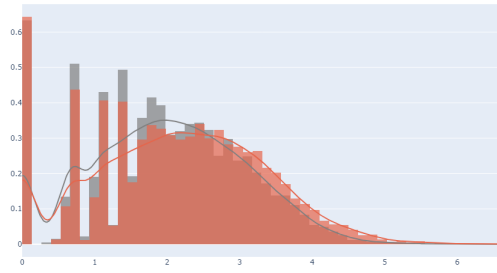
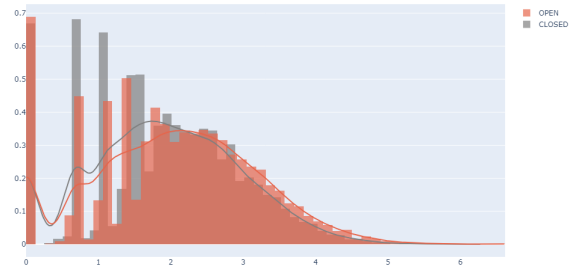


Figure: KDE of Shannon scores on citing Institutions for 2019



The first set of these is based on the Shannon index and countries as citing groups:

Figure: KDE of Shannon scores on citing Countries for 2010

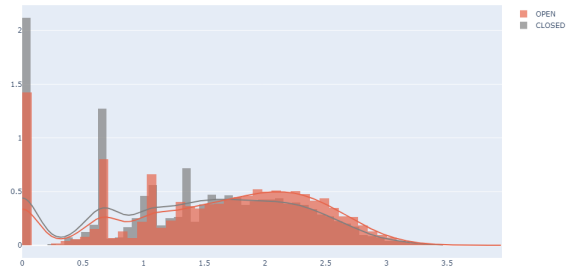


Figure: KDE of Shannon scores on citing Countries for 2011

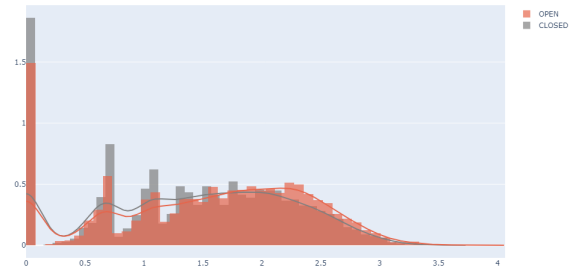


Figure: KDE of Shannon scores on citing Countries for 2012

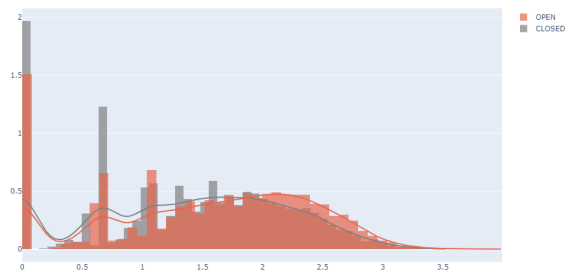


Figure: KDE of Shannon scores on citing Countries for 2013

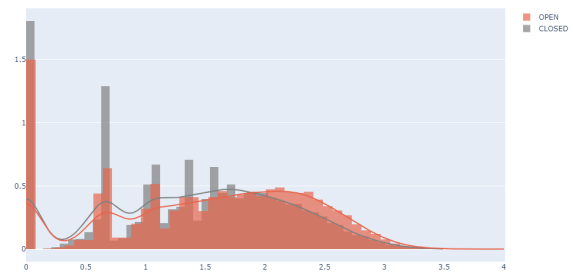


Figure: KDE of Shannon scores on citing Countries for 2014

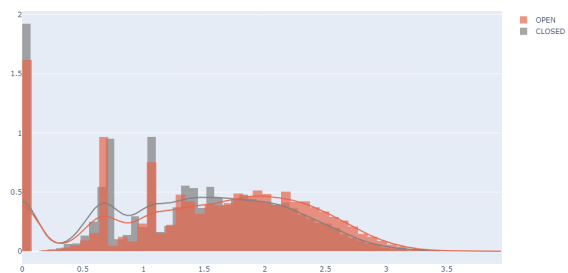


Figure: KDE of Shannon scores on citing Countries for 2015

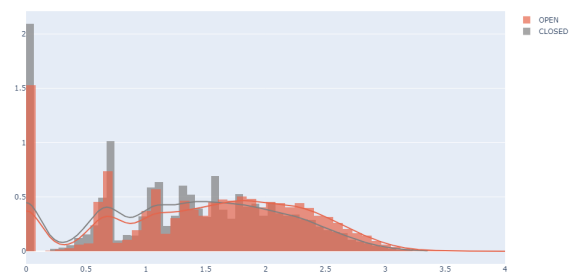


Figure: KDE of Shannon scores on citing Countries for 2016

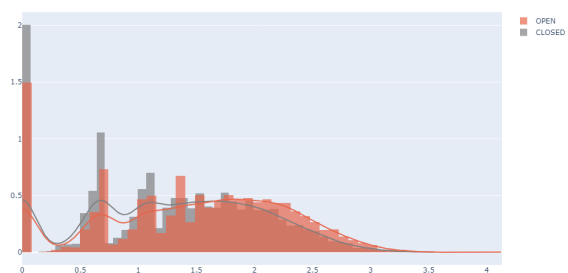


Figure: KDE of Shannon scores on citing Countries for 2017

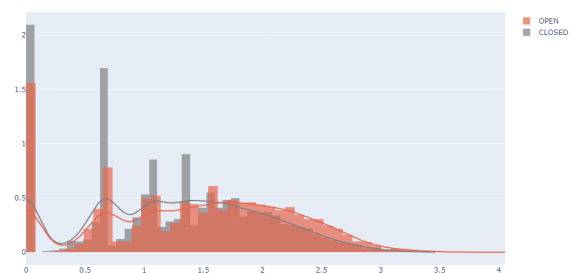


Figure: KDE of Shannon scores on citing Countries for 2018

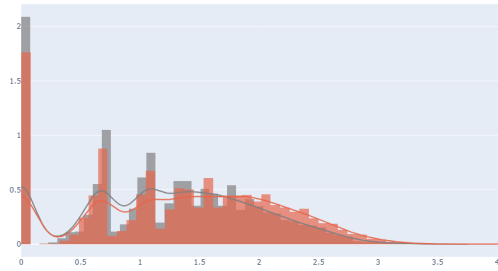
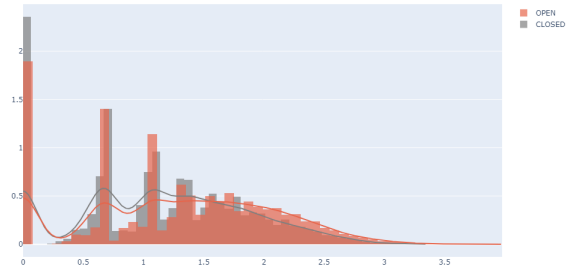


Figure: KDE of Shannon scores on citing Countries for 2019



The first set of these is based on the Shannon index and subregions as citing groups:

Figure: KDE of Shannon scores on citing Subregions for 2010

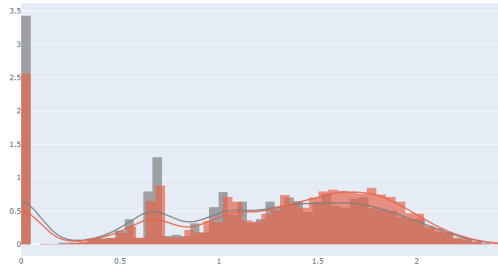


Figure: KDE of Shannon scores on citing Subregions for 2011

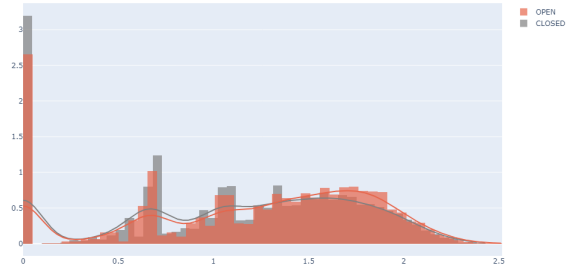


Figure: KDE of Shannon scores on citing Subregions for 2012

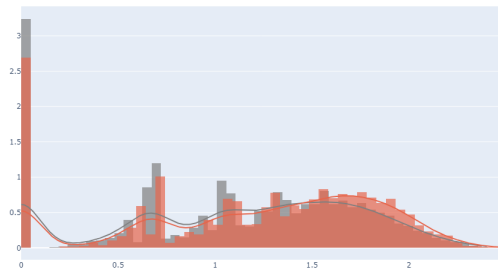


Figure: KDE of Shannon scores on citing Subregions for 2013

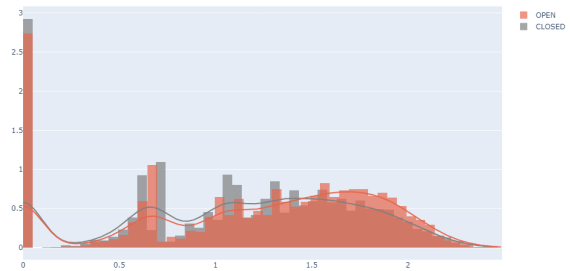


Figure: KDE of Shannon scores on citing Subregions for 2014

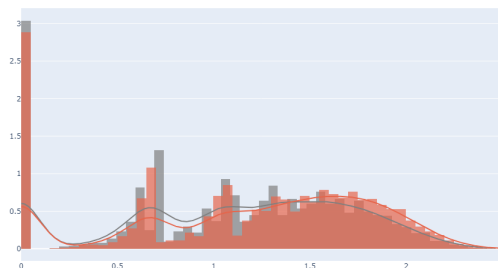


Figure: KDE of Shannon scores on citing Subregions for 2015

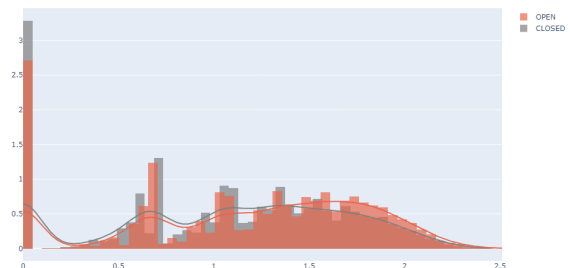


Figure: KDE of Shannon scores on citing Subregions for 2016

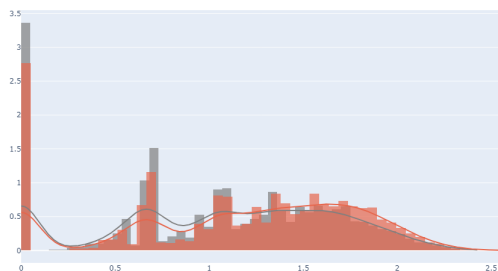
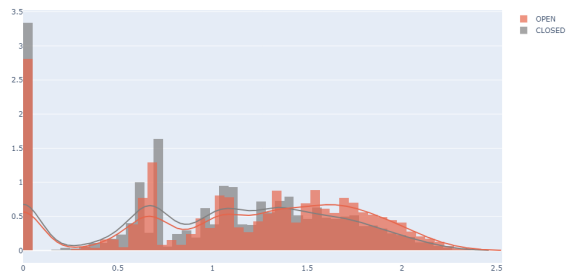


Figure: KDE of Shannon scores on citing Subregions for 2017



The first set of these is based on the Shannon index and regions as citing groups:

A histogram showing the distribution of the number of open and closed cases in the United Kingdom. The x-axis represents the number of cases, ranging from 0 to 1.6. The y-axis represents frequency, ranging from 0 to 6. The legend indicates that red bars represent 'OPEN' cases and grey bars represent 'CLOSED' cases. Overlaid on the histogram are two normal distribution curves: a red curve for 'OPEN' cases and a grey curve for 'CLOSED' cases. The 'OPEN' distribution is centered around 1.1, while the 'CLOSED' distribution is centered around 0.7.

Figure 1 is a histogram showing the frequency distribution of the number of open and closed cases in the United Kingdom. The x-axis represents the number of cases, ranging from 0 to 1.6. The y-axis represents the frequency, ranging from 0 to 7. The legend indicates that red bars represent 'OPEN' cases and grey bars represent 'CLOSED' cases. The distribution shows a high frequency of 0 cases (mostly open) and a secondary peak around 0.7 cases.

Figure: KDE of Shannon scores on citing Regions for 2018

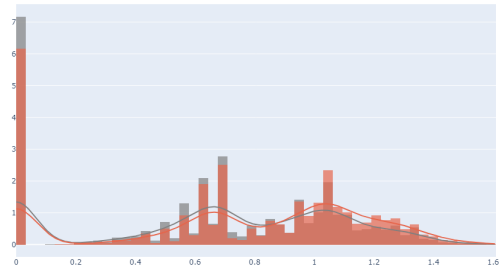
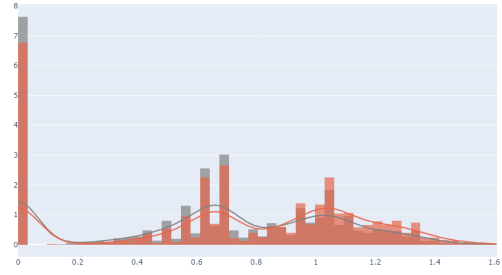


Figure: KDE of Shannon scores on citing Regions for 2019



The first set of these is based on the Shannon index and fields as citing groups:

Figure: KDE of Shannon scores on citing Fields for 2010

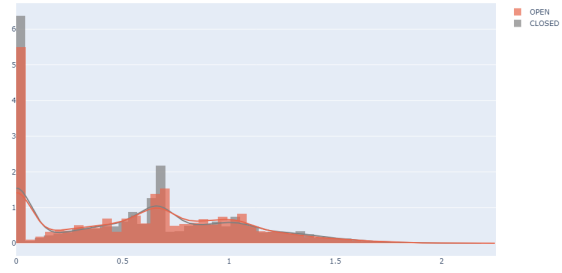


Figure: KDE of Shannon scores on citing Fields for 2011

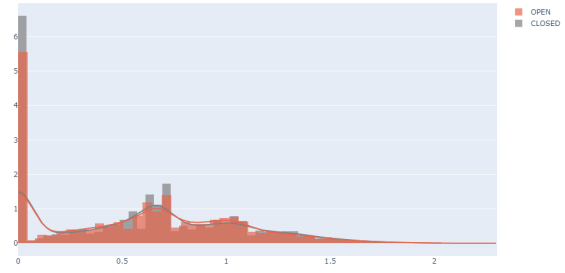


Figure: KDE of Shannon scores on citing Fields for 2012

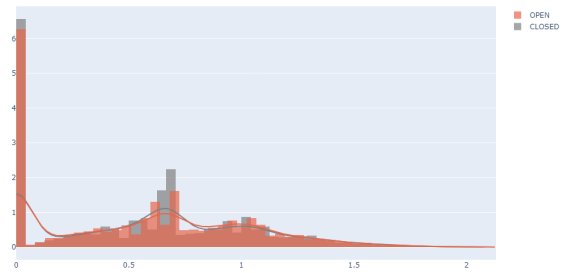


Figure: KDE of Shannon scores on citing Fields for 2013

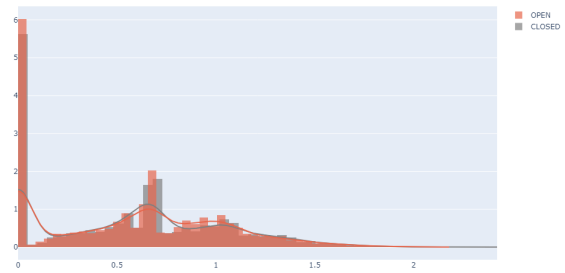


Figure: KDE of Shannon scores on citing Fields for 2014

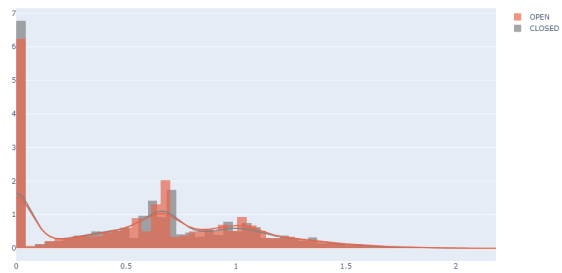


Figure: KDE of Shannon scores on citing Fields for 2015

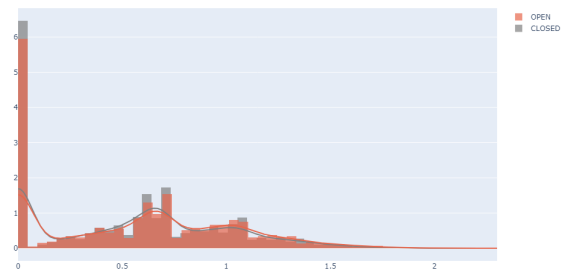


Figure: KDE of Shannon scores on citing Fields for 2016

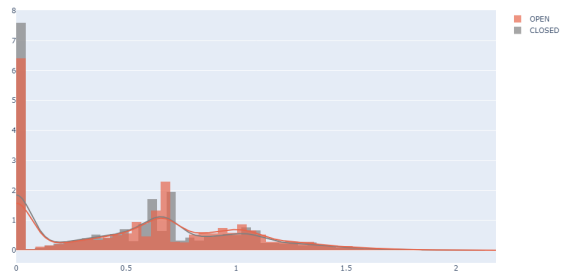


Figure: KDE of Shannon scores on citing Fields for 2017

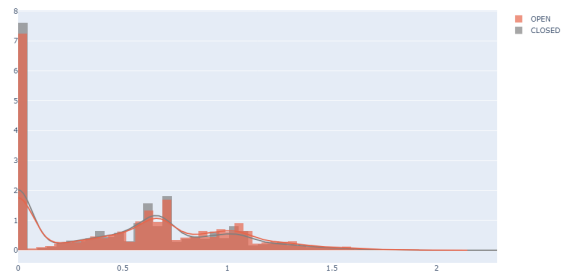


Figure: KDE of Shannon scores on citing Fields for 2018

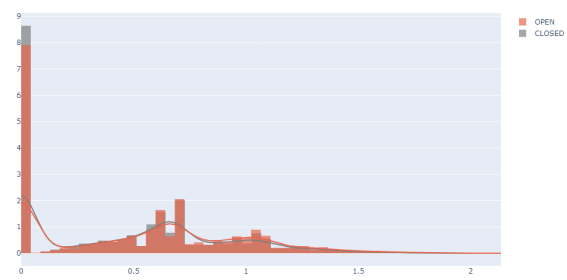
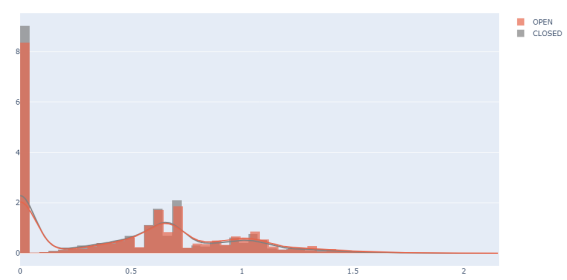


Figure: KDE of Shannon scores on citing Fields for 2019



Section G: Citation diversity scores - comparing fields of research

This section explores the OA effect on citation diversity as per field of research. For each field of research (as defined by the MAG Level 0 fields), we track the mean and median Shannon and Gini-Simpson scores for the OA categories and for closed papers, as per type of citing group. For most fields of research, we find Green OA as the standout performer. Performance of overall OA and Gold OA varies widely for selected fields.

For Gini-Simpson scores on citing institutions:

Figure: Comparing mean GiniSim on citing Institutions for Art

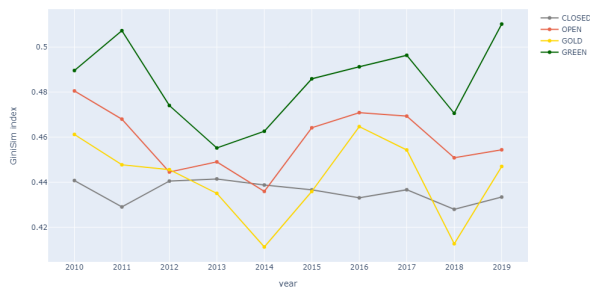


Figure: Comparing median GiniSim on citing Institutions for Art

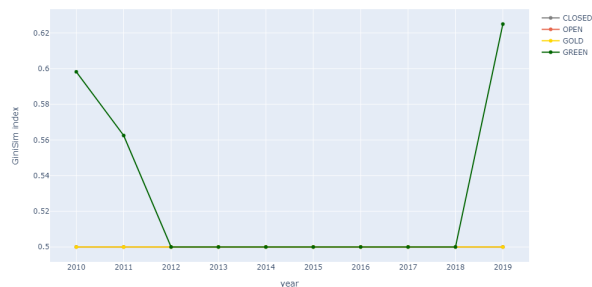


Figure: Comparing mean GiniSim on citing Institutions for Biology

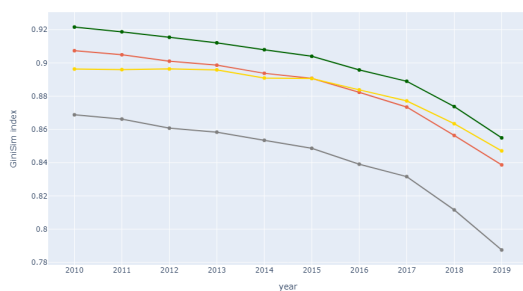


Figure: Comparing median GiniSim on citing Institutions for Biology

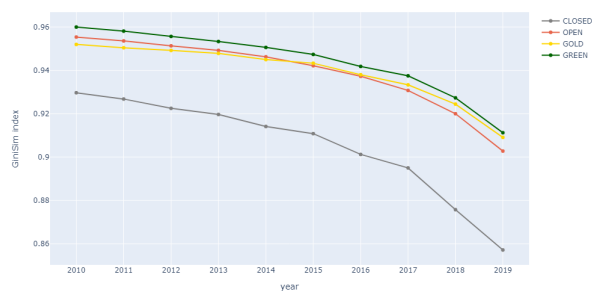


Figure: Comparing mean GiniSim on citing Institutions for Business

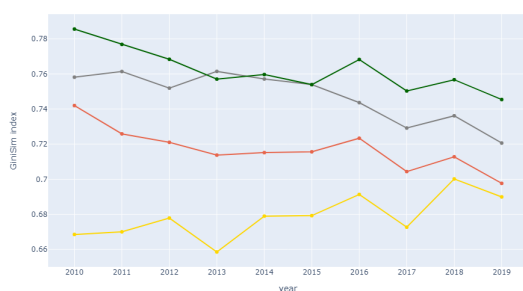


Figure: Comparing median GiniSim on citing Institutions for Business

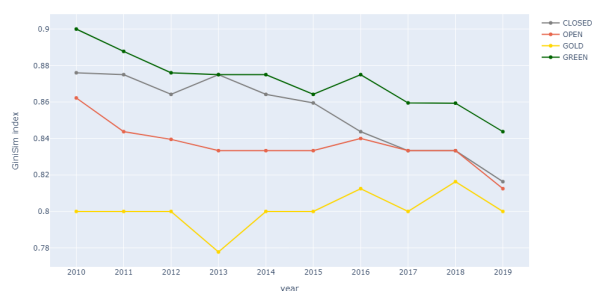


Figure: Comparing mean GiniSim on citing Institutions for Chemistry

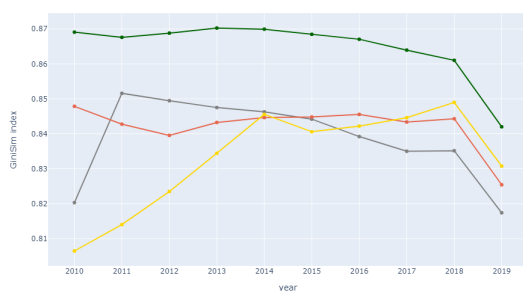


Figure: Comparing median GiniSim on citing Institutions for Chemistry

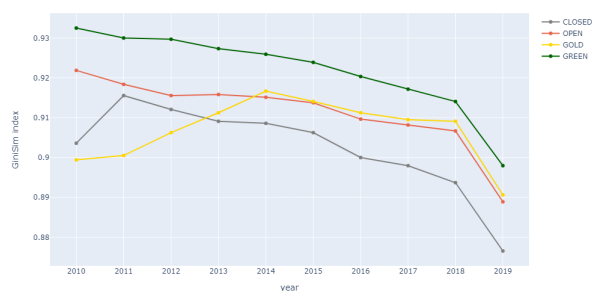


Figure: Comparing mean GiniSim on citing Institutions for Computer science

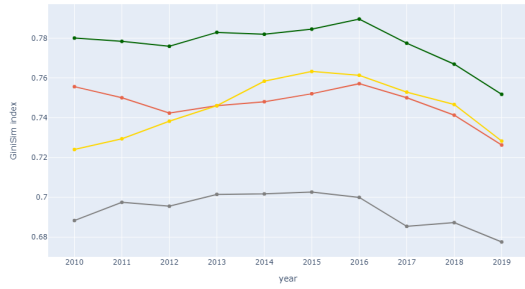


Figure: Comparing median GiniSim on citing Institutions for Computer science

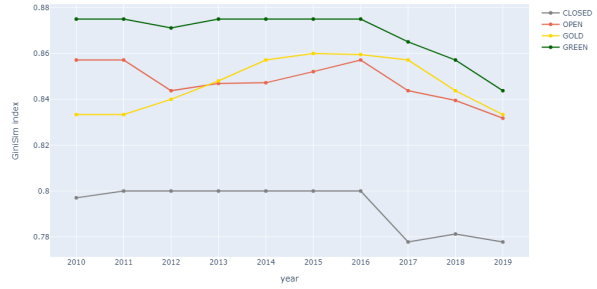


Figure: Comparing mean GiniSim on citing Institutions for Economics

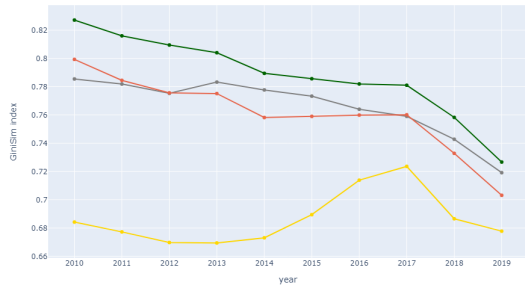


Figure: Comparing median GiniSim on citing Institutions for Economics

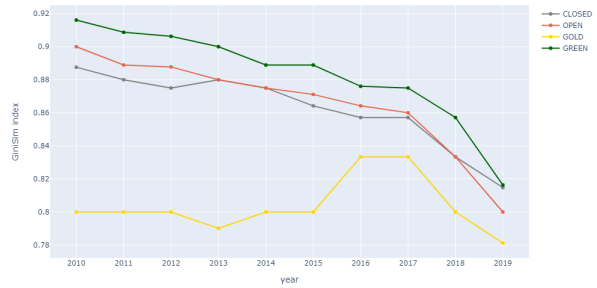


Figure: Comparing mean GiniSim on citing Institutions for Engineering

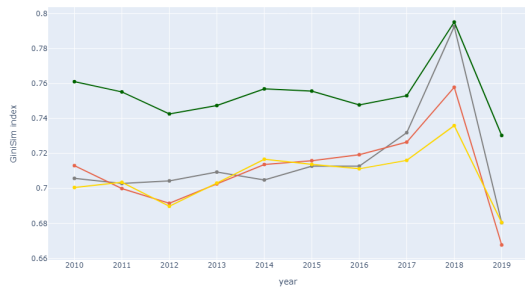


Figure: Comparing median GiniSim on citing Institutions for Engineering

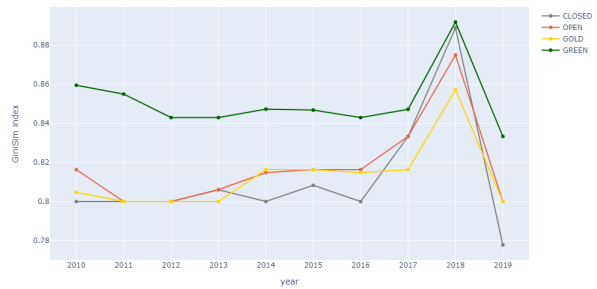


Figure: Comparing mean GiniSim on citing Institutions for Environmental science

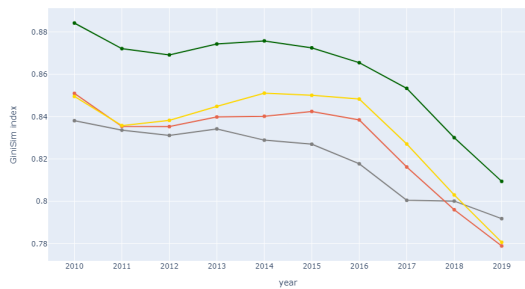


Figure: Comparing median GiniSim on citing Institutions for Environmental science

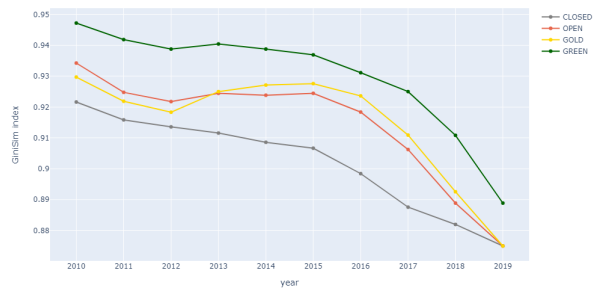


Figure: Comparing mean GiniSim on citing Institutions for Geography

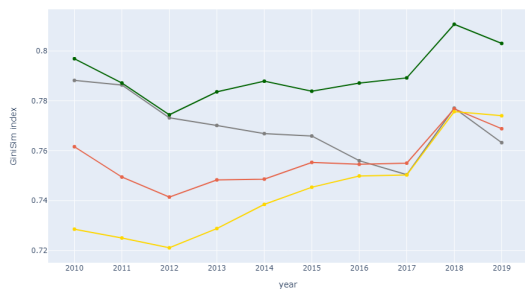


Figure: Comparing median GiniSim on citing Institutions for Geography

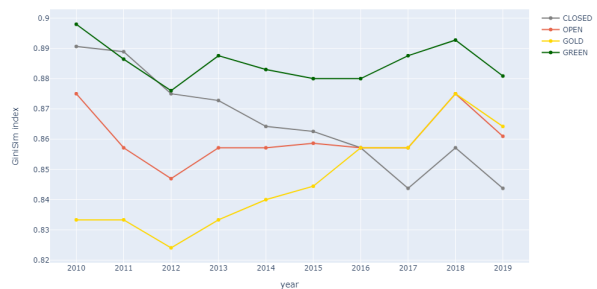


Figure: Comparing mean GiniSim on citing Institutions for Geology

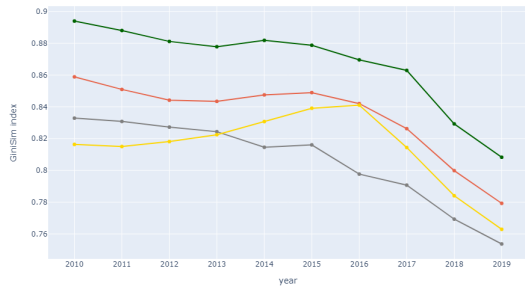


Figure: Comparing median GiniSim on citing Institutions for Geology

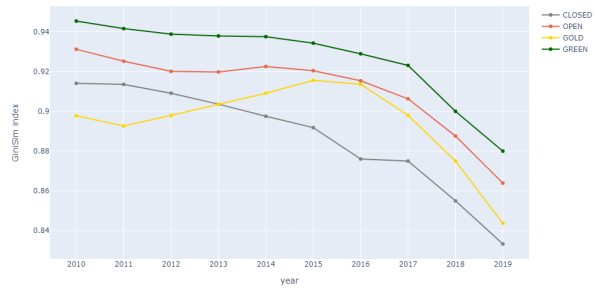


Figure: Comparing mean GiniSim on citing Institutions for History

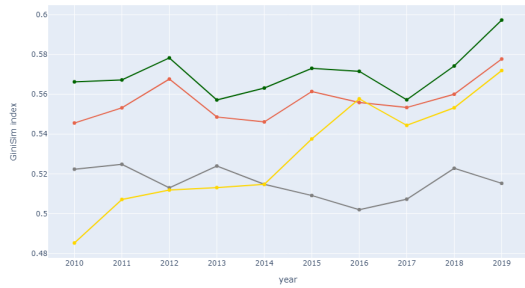


Figure: Comparing median GiniSim on citing Institutions for History

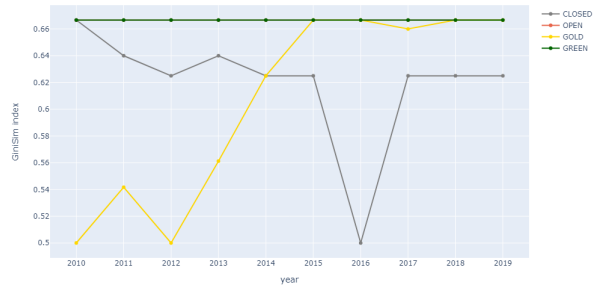


Figure: Comparing mean GiniSim on citing Institutions for Materials science

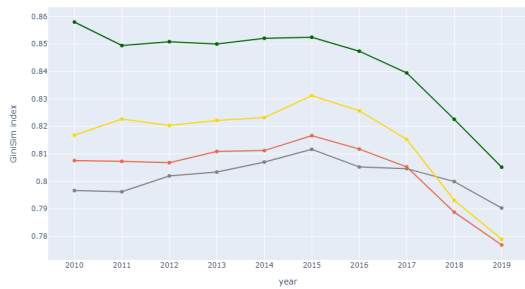


Figure: Comparing median GiniSim on citing Institutions for Materials science

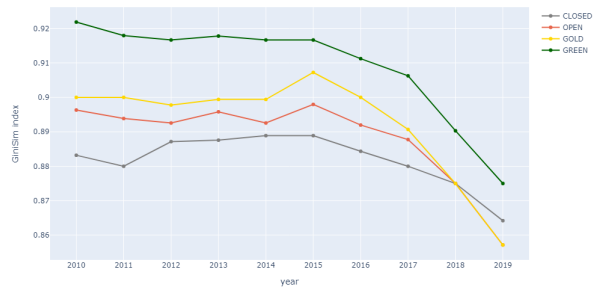


Figure: Comparing mean GiniSim on citing Institutions for Mathematics

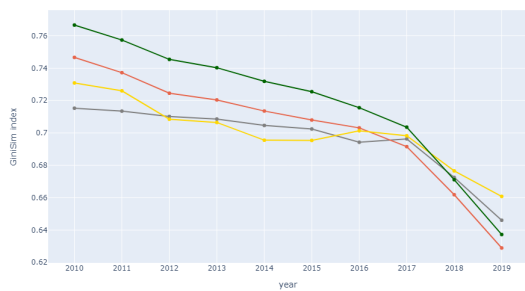


Figure: Comparing median GiniSim on citing Institutions for Mathematics

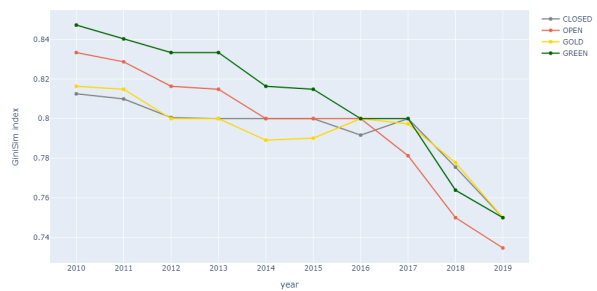


Figure: Comparing mean GiniSim on citing Institutions for Medicine

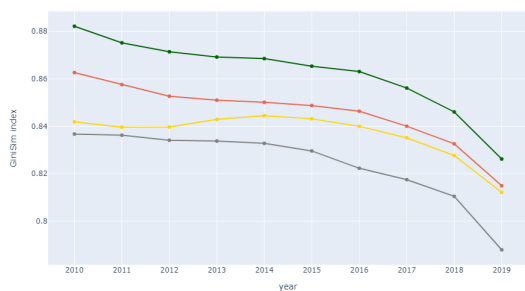


Figure: Comparing median GiniSim on citing Institutions for Medicine

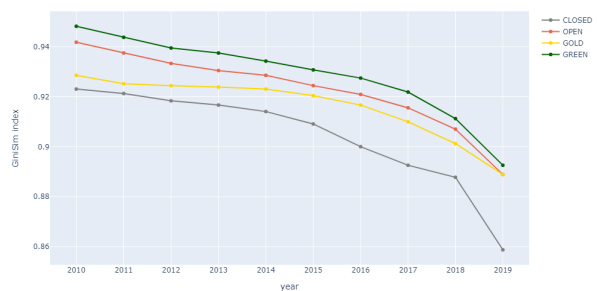


Figure: Comparing mean GiniSim on citing Institutions for Philosophy

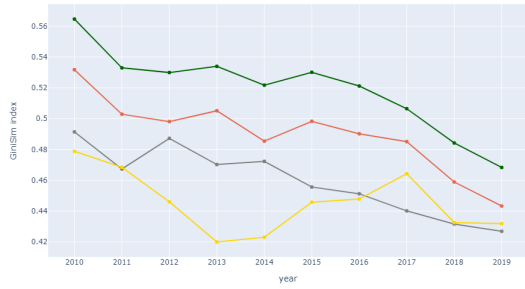


Figure: Comparing median GiniSim on citing Institutions for Philosophy

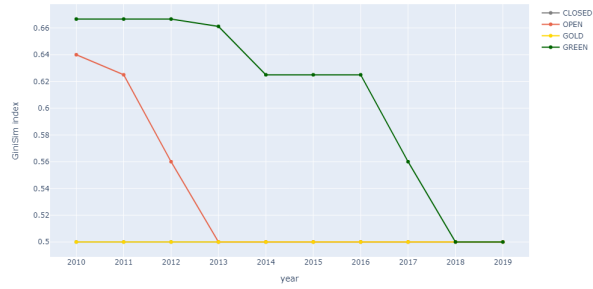


Figure: Comparing mean GiniSim on citing Institutions for Physics

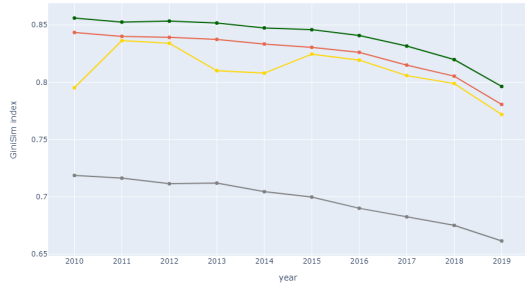


Figure: Comparing median GiniSim on citing Institutions for Physics

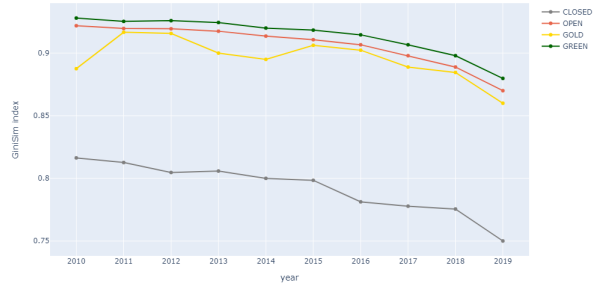


Figure: Comparing mean GiniSim on citing Institutions for Political science

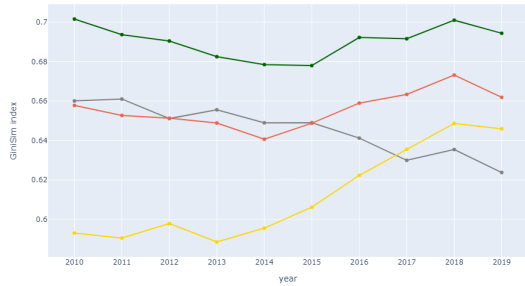


Figure: Comparing median GiniSim on citing Institutions for Political science

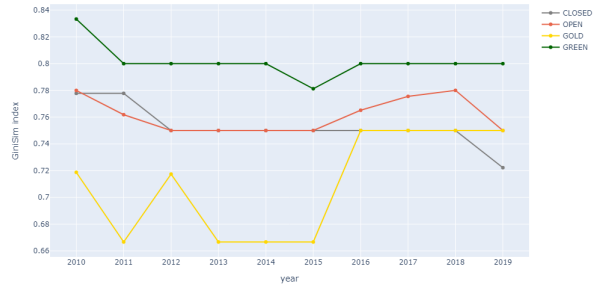


Figure: Comparing mean GiniSim on citing Institutions for Psychology

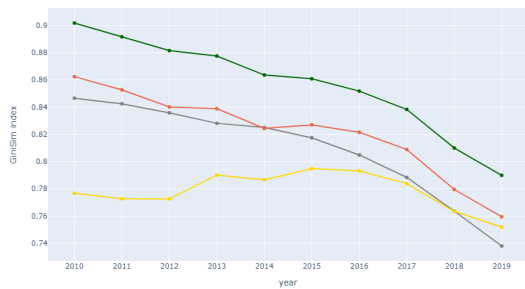


Figure: Comparing median GiniSim on citing Institutions for Psychology

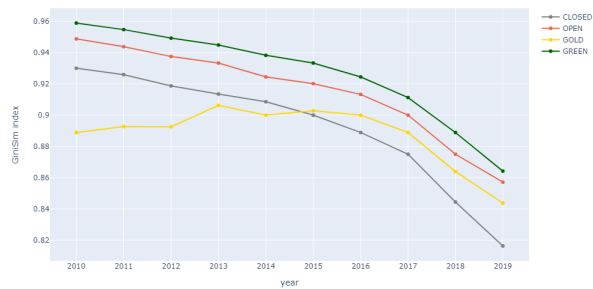


Figure: Comparing mean GiniSim on citing Institutions for Sociology

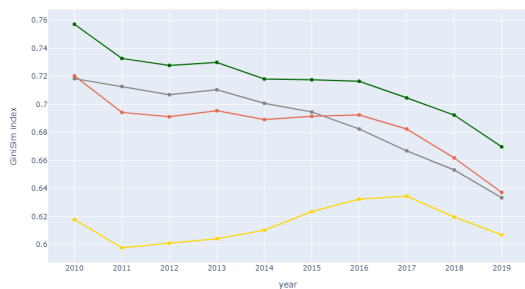
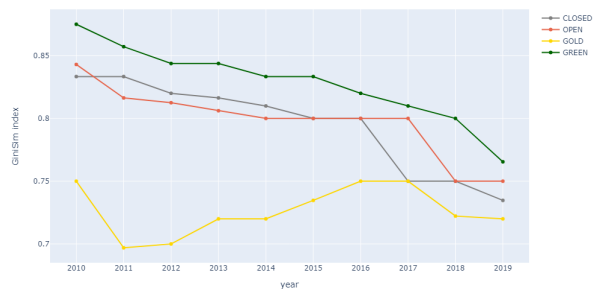


Figure: Comparing median GiniSim on citing Institutions for Sociology



For Shannon scores on citing institutions:

Figure: Comparing mean Shannon on citing Institutions for Art

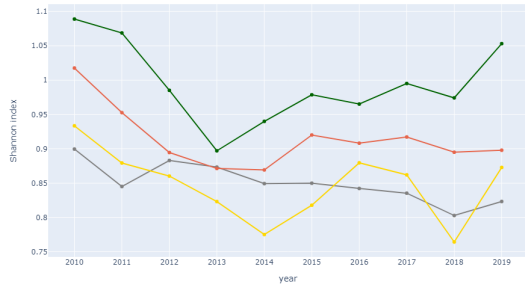


Figure: Comparing median Shannon on citing Institutions for Art

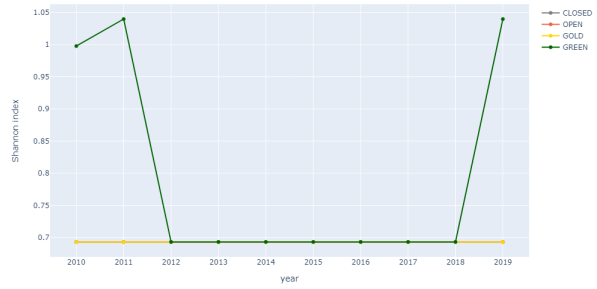


Figure: Comparing mean Shannon on citing Institutions for Biology

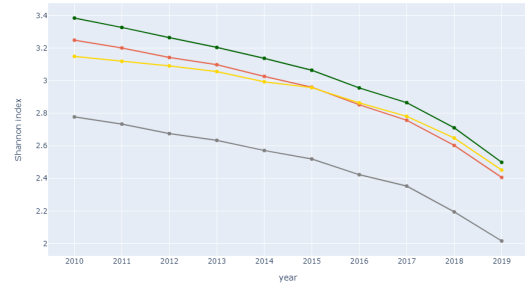


Figure: Comparing median Shannon on citing Institutions for Biology

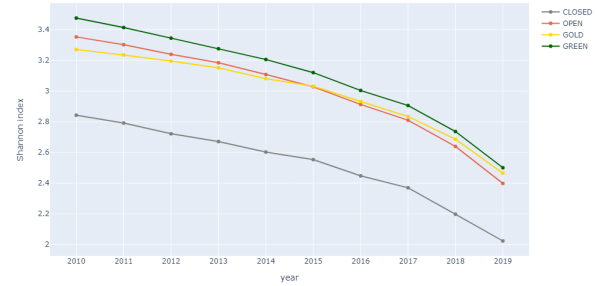


Figure: Comparing mean Shannon on citing Institutions for Business

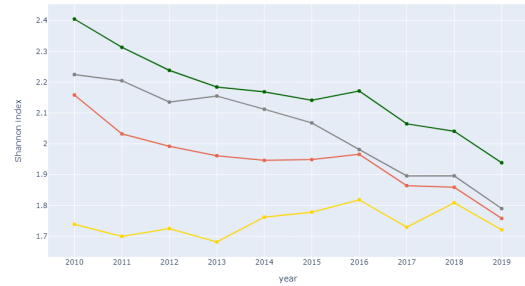


Figure: Comparing median Shannon on citing Institutions for Business

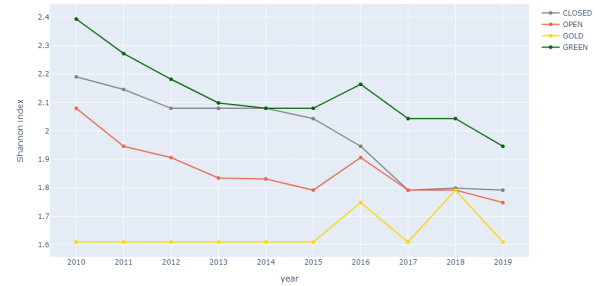


Figure: Comparing mean Shannon on citing Institutions for Chemistry

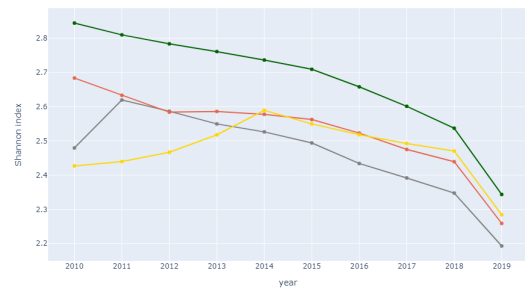


Figure: Comparing median Shannon on citing Institutions for Chemistry

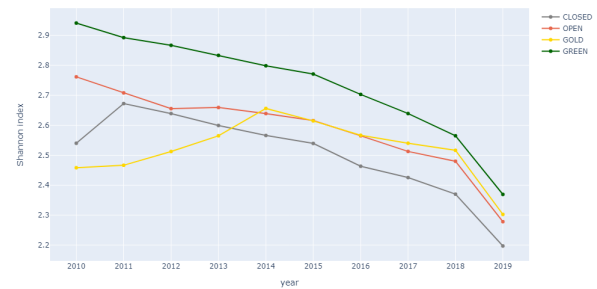


Figure: Comparing mean Shannon on citing Institutions for Computer science

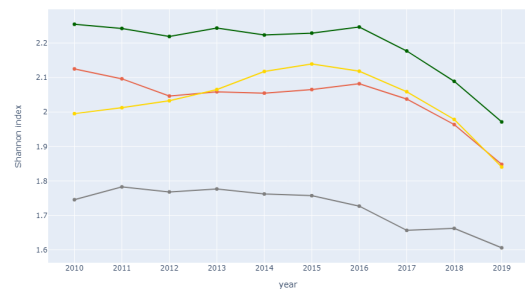


Figure: Comparing median Shannon on citing Institutions for Computer science

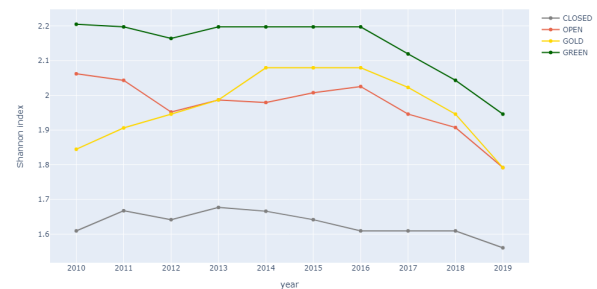


Figure: Comparing mean Shannon on citing Institutions for Economics

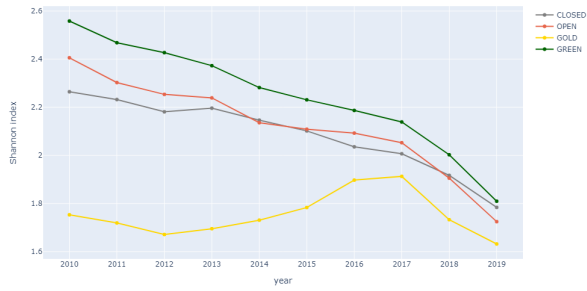


Figure: Comparing median Shannon on citing Institutions for Economics

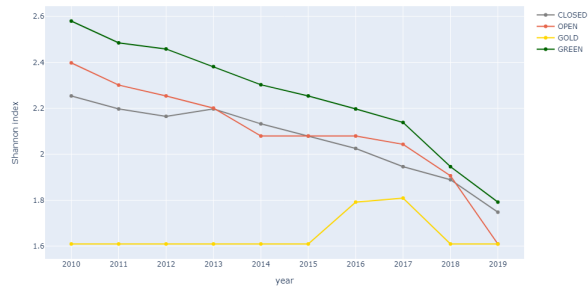


Figure: Comparing mean Shannon on citing Institutions for Engineering

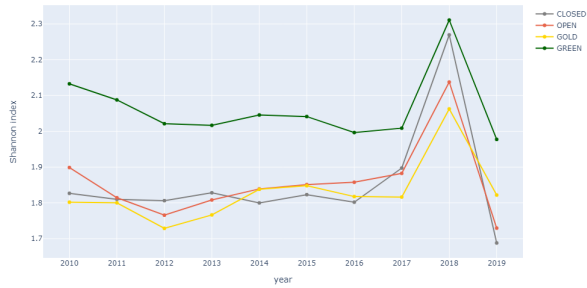


Figure: Comparing median Shannon on citing Institutions for Engineering

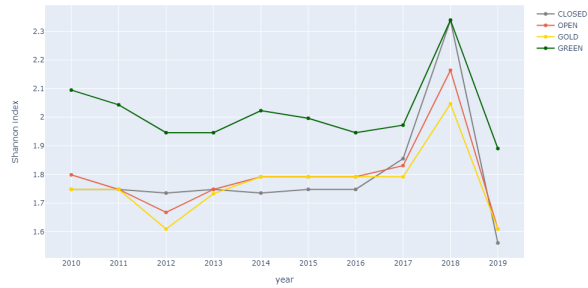


Figure: Comparing mean Shannon on citing Institutions for Environmental science

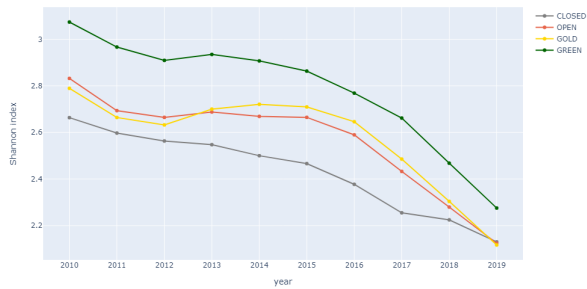


Figure: Comparing median Shannon on citing Institutions for Environmental science

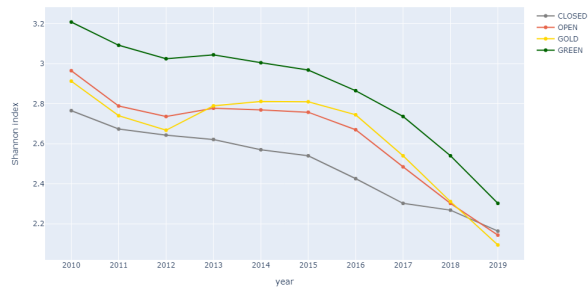


Figure: Comparing mean Shannon on citing Institutions for Geography

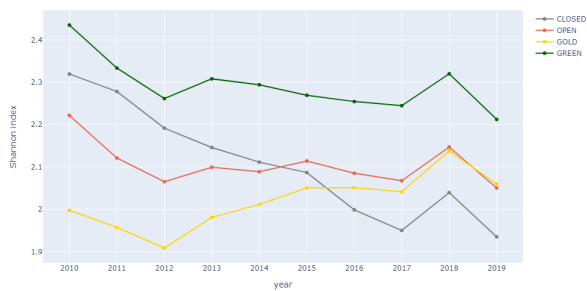


Figure: Comparing median Shannon on citing Institutions for Geography

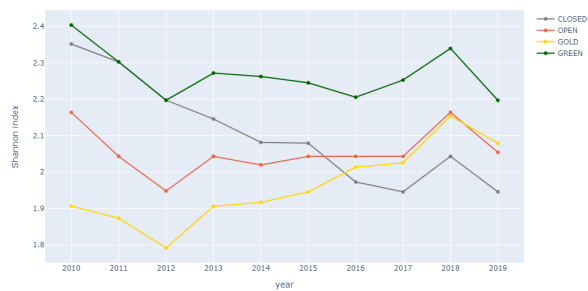


Figure: Comparing mean Shannon on citing Institutions for Geology

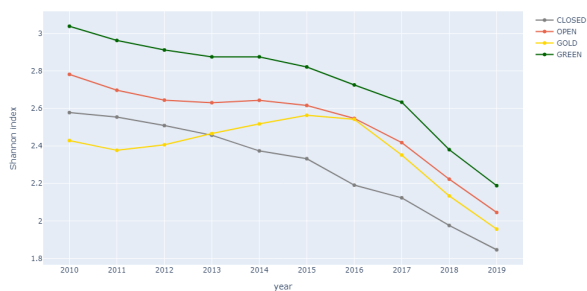


Figure: Comparing median Shannon on citing Institutions for Geology

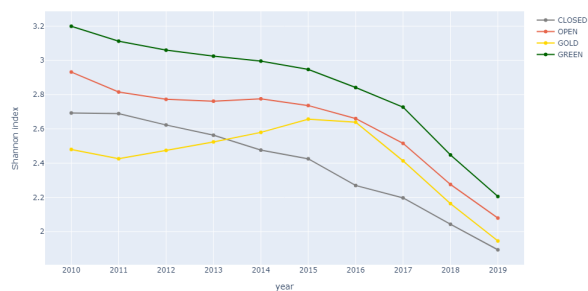


Figure: Comparing mean Shannon on citing Institutions for History

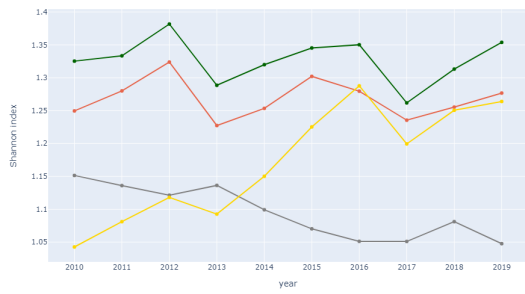


Figure: Comparing median Shannon on citing Institutions for History

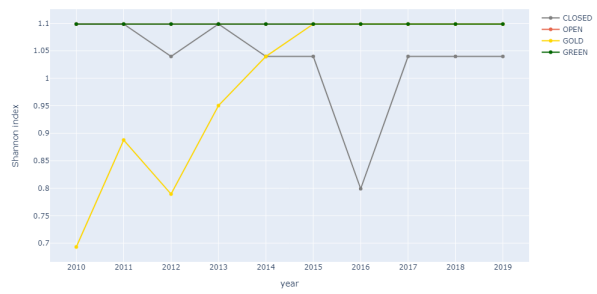


Figure: Comparing mean Shannon on citing Institutions for Materials science

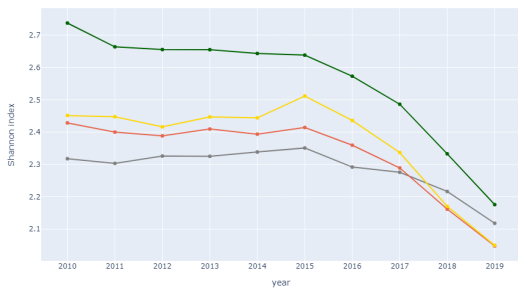


Figure: Comparing median Shannon on citing Institutions for Materials science

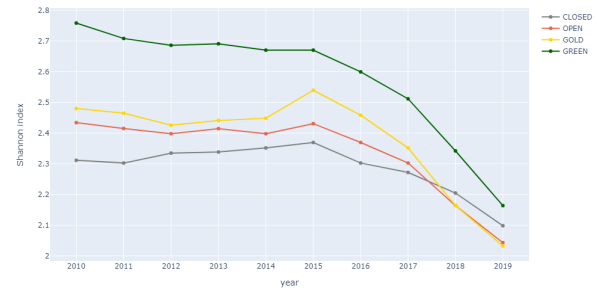


Figure: Comparing mean Shannon on citing Institutions for Mathematics

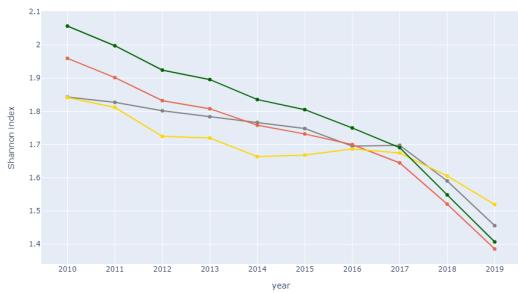


Figure: Comparing median Shannon on citing Institutions for Mathematics

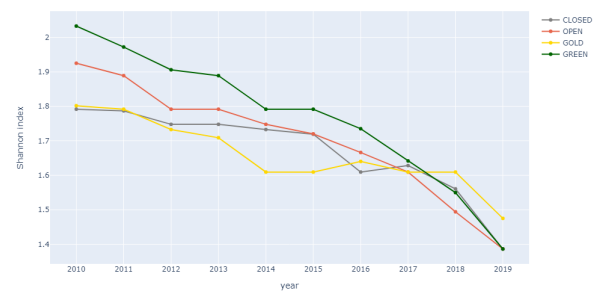


Figure: Comparing mean Shannon on citing Institutions for Medicine

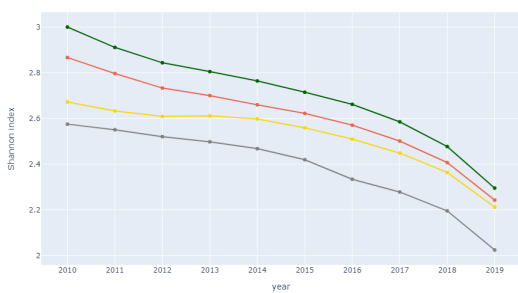


Figure: Comparing median Shannon on citing Institutions for Medicine

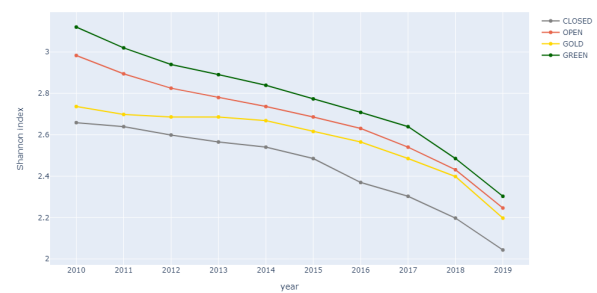


Figure: Comparing mean Shannon on citing Institutions for Philosophy

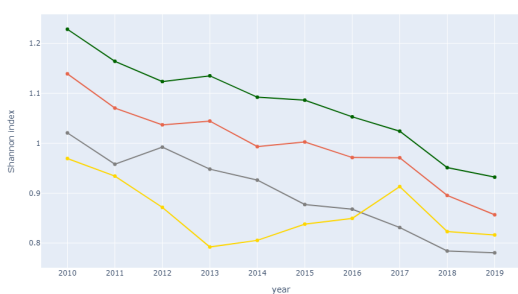


Figure: Comparing median Shannon on citing Institutions for Philosophy

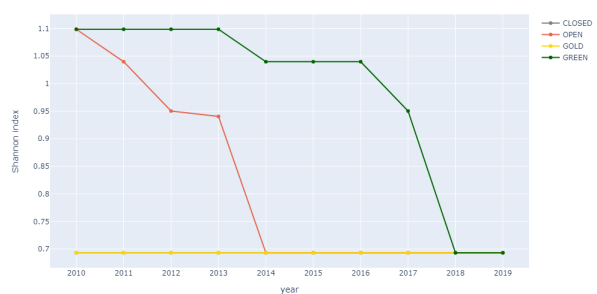


Figure: Comparing mean Shannon on citing Institutions for Physics

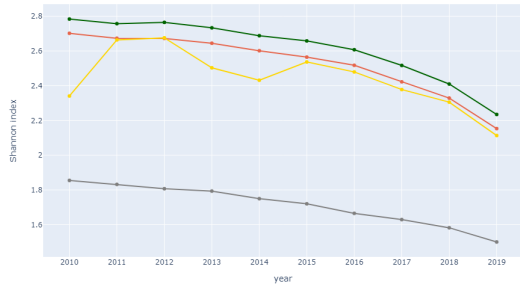


Figure: Comparing median Shannon on citing Institutions for Physics

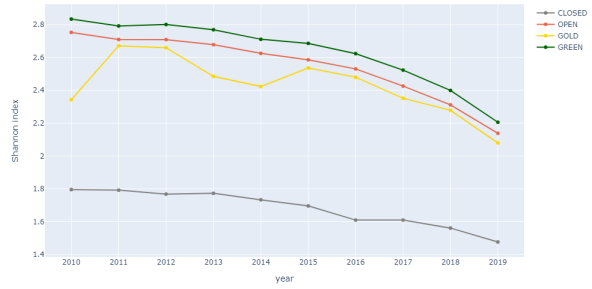


Figure: Comparing mean Shannon on citing Institutions for Political science

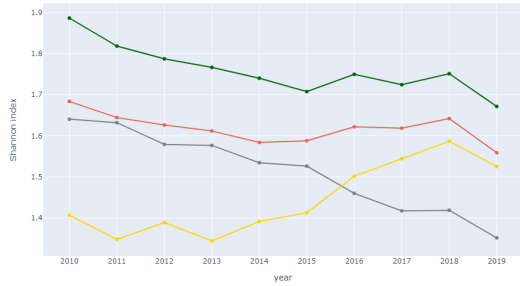


Figure: Comparing median Shannon on citing Institutions for Political science

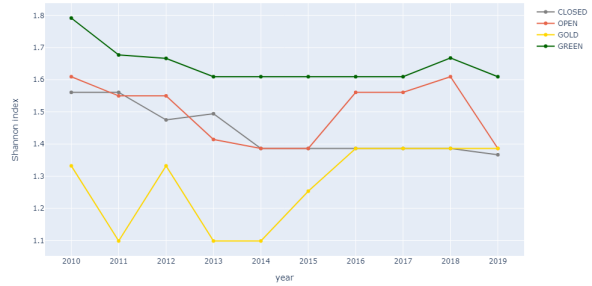


Figure: Comparing mean Shannon on citing Institutions for Psychology

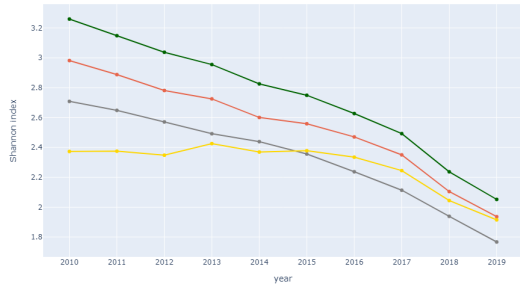


Figure: Comparing median Shannon on citing Institutions for Psychology

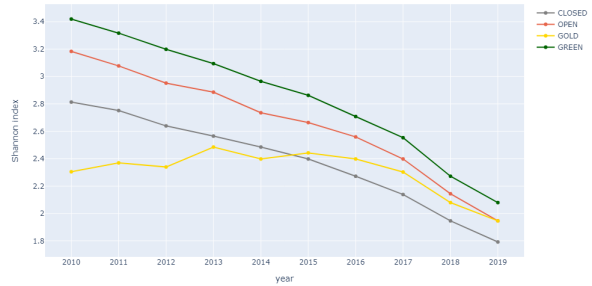


Figure: Comparing mean Shannon on citing Institutions for Sociology

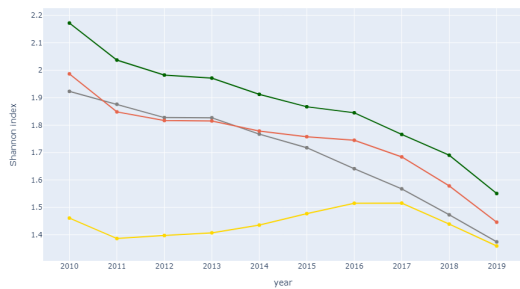
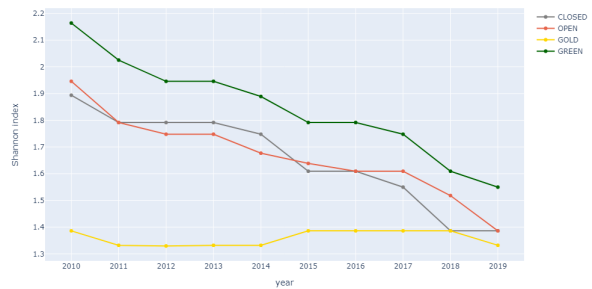


Figure: Comparing median Shannon on citing Institutions for Sociology



For Gini-Simpson scores on citing countries:

Figure: Comparing mean GiniSim on citing Countries for Art

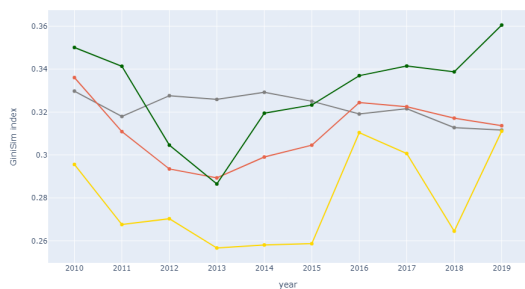


Figure: Comparing median GiniSim on citing Countries for Art

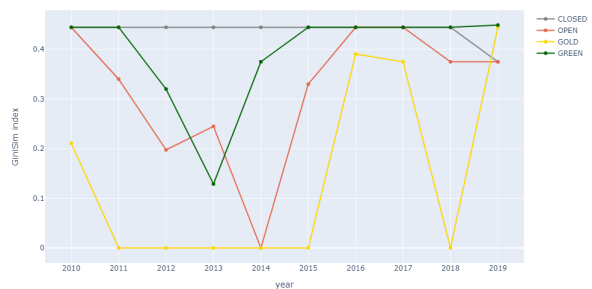


Figure: Comparing mean GiniSim on citing Countries for Biology

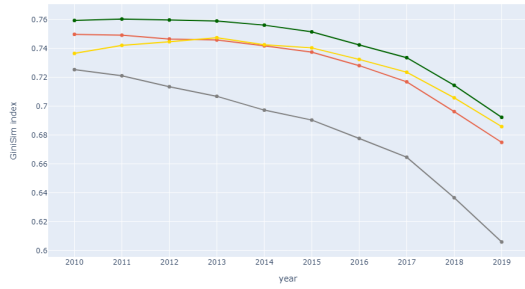


Figure: Comparing median GiniSim on citing Countries for Biology

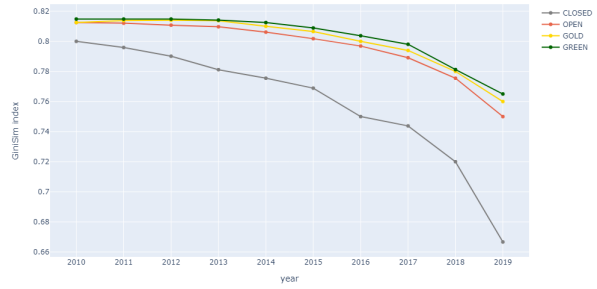


Figure: Comparing mean GiniSim on citing Countries for Business

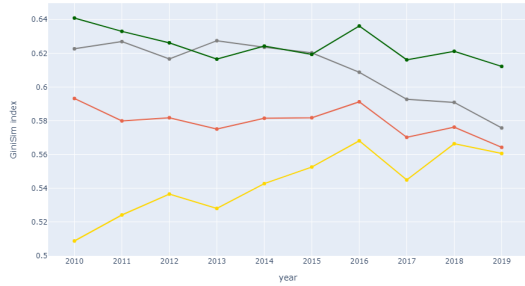


Figure: Comparing median GiniSim on citing Countries for Business

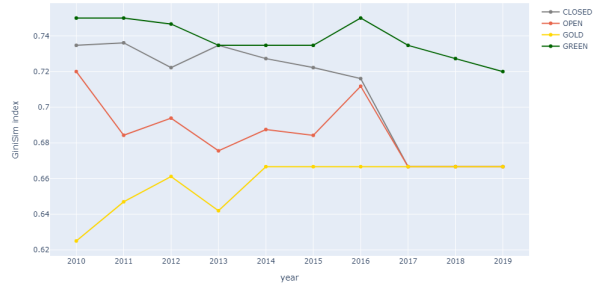


Figure: Comparing mean GiniSim on citing Countries for Chemistry

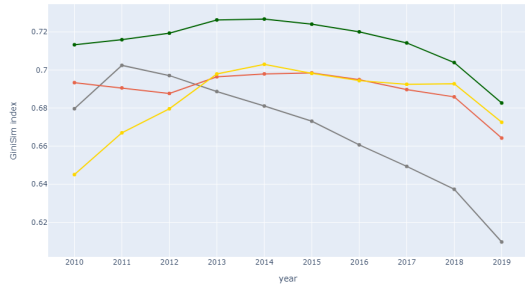


Figure: Comparing median GiniSim on citing Countries for Chemistry

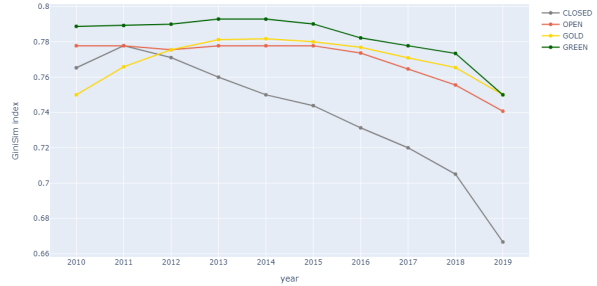


Figure: Comparing mean GiniSim on citing Countries for Computer science

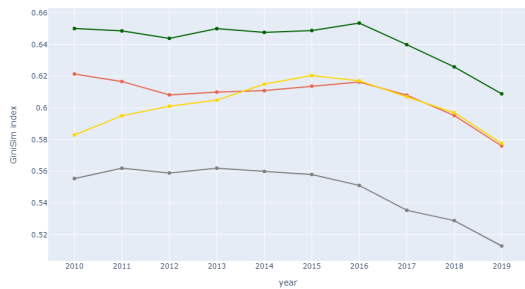


Figure: Comparing median GiniSim on citing Countries for Computer science

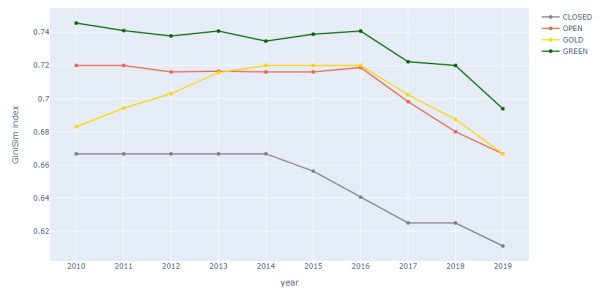


Figure: Comparing mean GiniSim on citing Countries for Economics

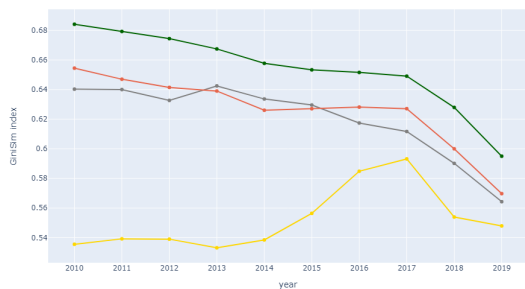


Figure: Comparing median GiniSim on citing Countries for Economics

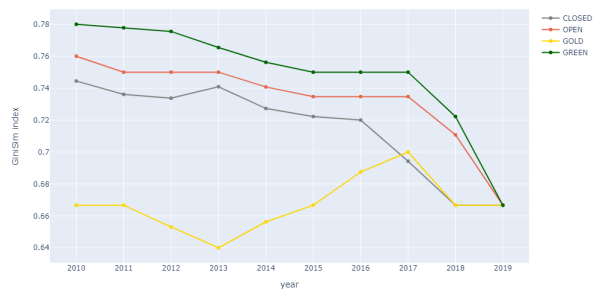


Figure: Comparing mean GiniSim on citing Countries for Engineering

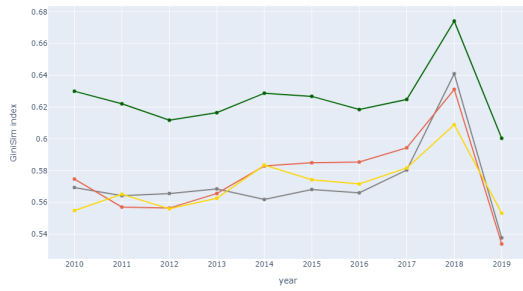


Figure: Comparing median GiniSim on citing Countries for Engineering

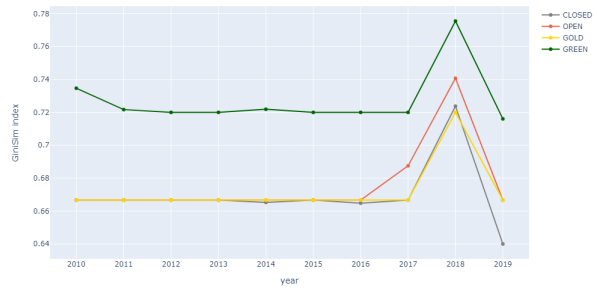


Figure: Comparing mean GiniSim on citing Countries for Environmental science

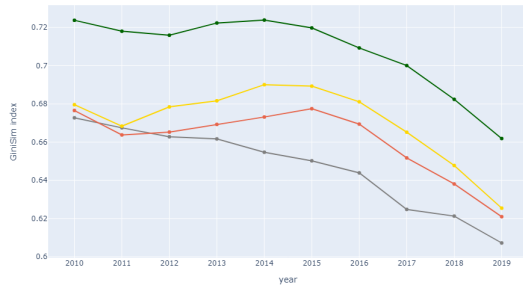


Figure: Comparing median GiniSim on citing Countries for Environmental science

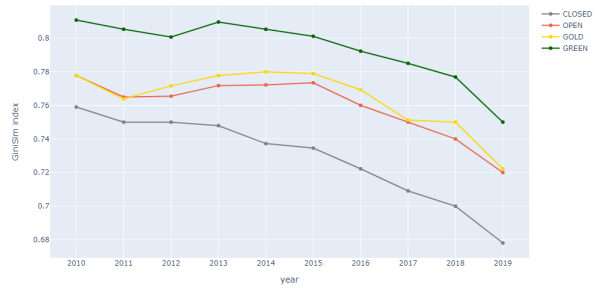


Figure: Comparing mean GiniSim on citing Countries for Geography

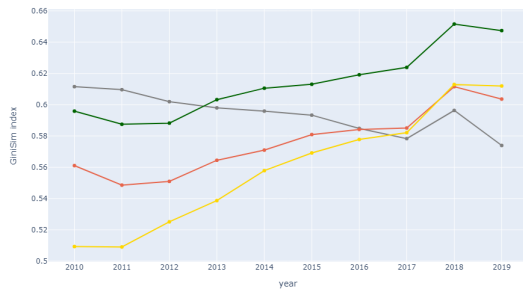


Figure: Comparing median GiniSim on citing Countries for Geography

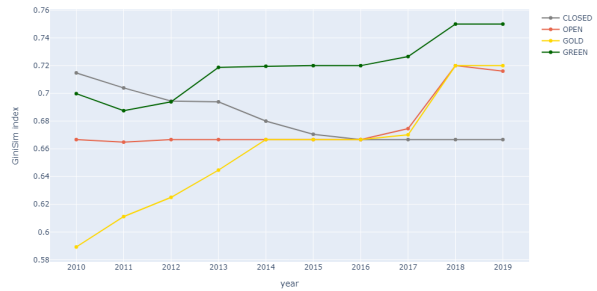


Figure: Comparing mean GiniSim on citing Countries for Geology

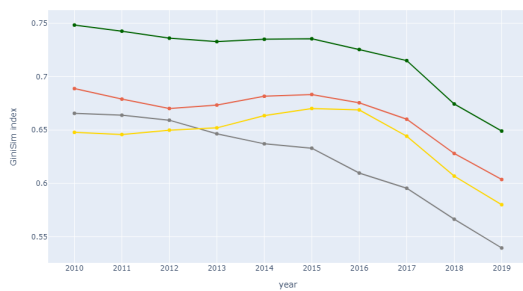


Figure: Comparing median GiniSim on citing Countries for Geology

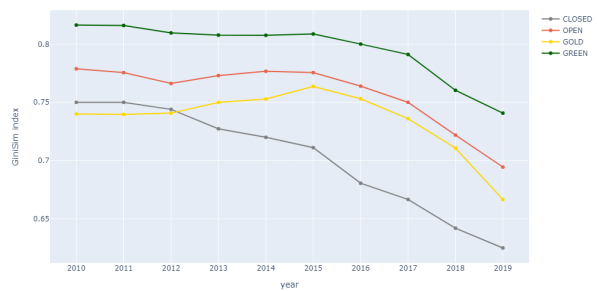


Figure: Comparing mean GiniSim on citing Countries for History

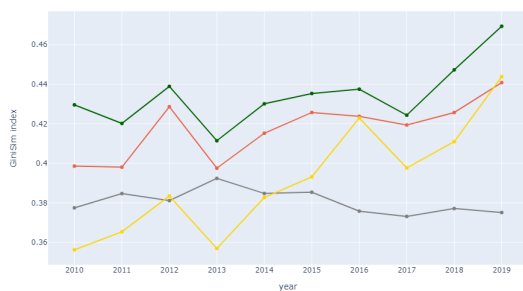


Figure: Comparing median GiniSim on citing Countries for History

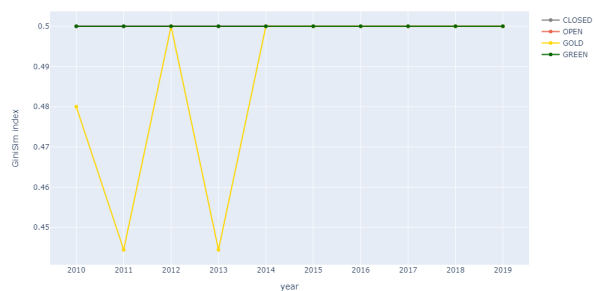


Figure: Comparing mean GiniSim on citing Countries for Materials science

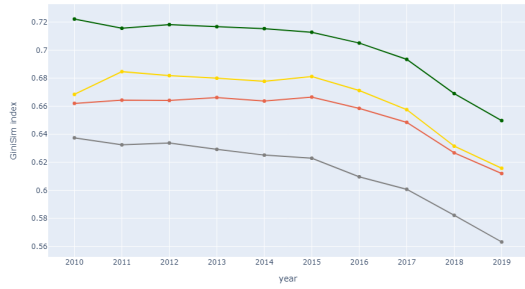


Figure: Comparing median GiniSim on citing Countries for Materials science

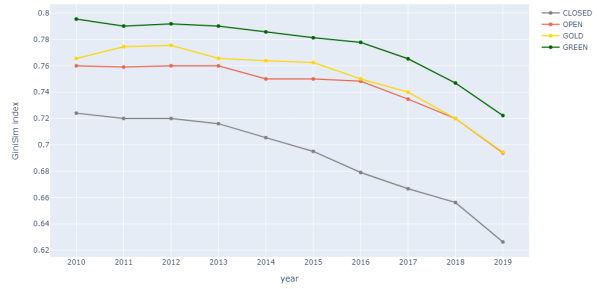


Figure: Comparing mean GiniSim on citing Countries for Mathematics

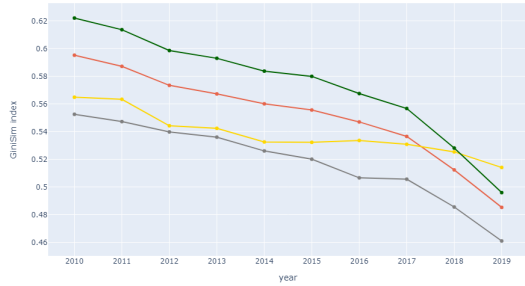


Figure: Comparing median GiniSim on citing Countries for Mathematics

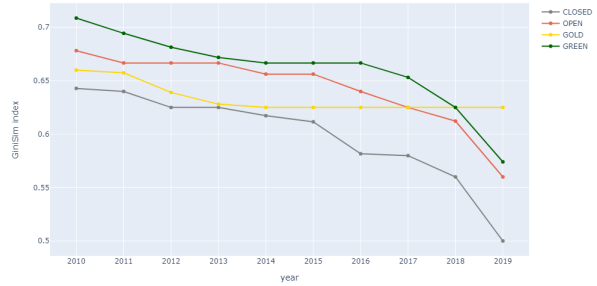


Figure: Comparing mean GiniSim on citing Countries for Medicine

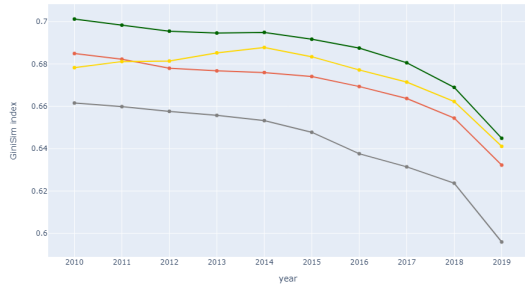


Figure: Comparing median GiniSim on citing Countries for Medicine

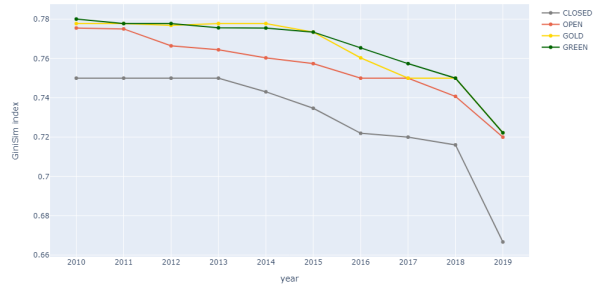


Figure: Comparing mean GiniSim on citing Countries for Philosophy

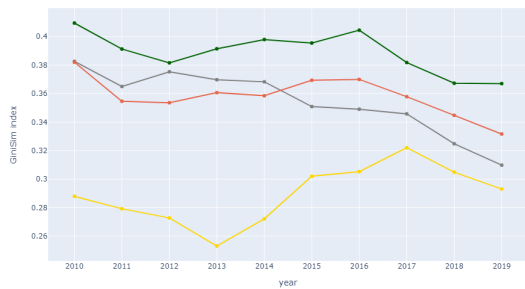


Figure: Comparing median GiniSim on citing Countries for Philosophy

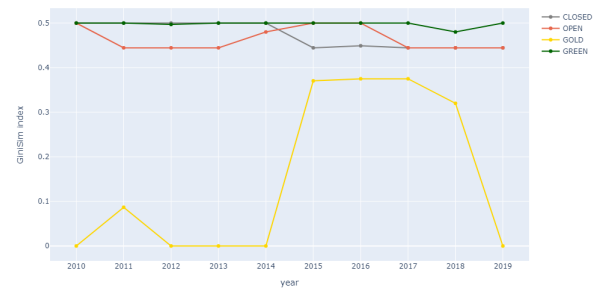


Figure: Comparing mean GiniSim on citing Countries for Physics

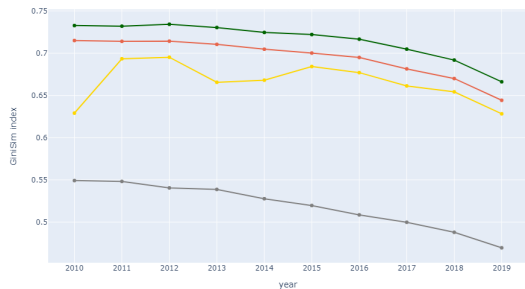


Figure: Comparing median GiniSim on citing Countries for Physics

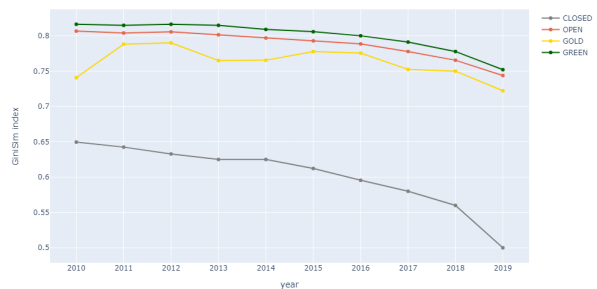


Figure: Comparing mean GiniSim on citing Countries for Political science

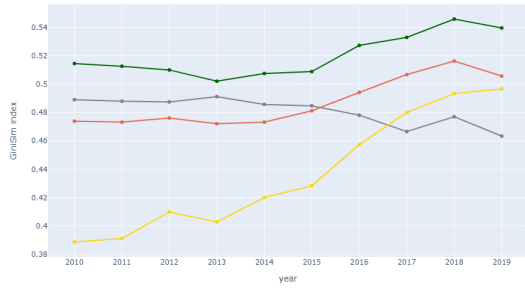


Figure: Comparing median GiniSim on citing Countries for Political science

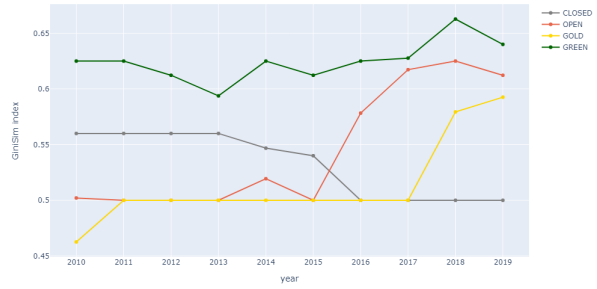


Figure: Comparing mean GiniSim on citing Countries for Psychology

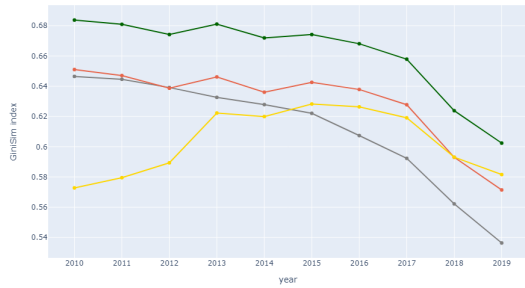


Figure: Comparing median GiniSim on citing Countries for Psychology

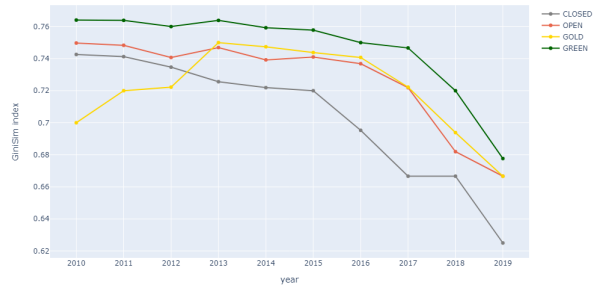


Figure: Comparing mean GiniSim on citing Countries for Sociology

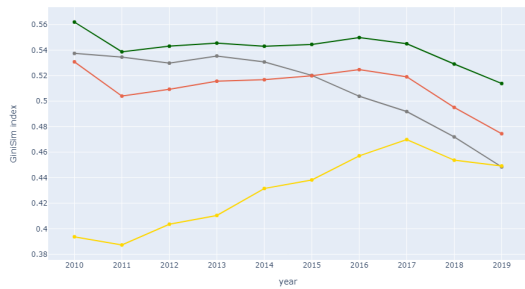
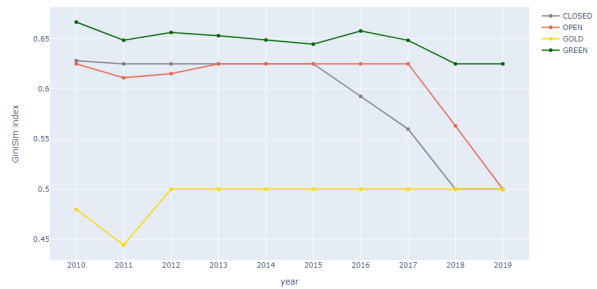


Figure: Comparing median GiniSim on citing Countries for Sociology



For Shannon scores on citing countries:

Figure: Comparing mean Shannon on citing Countries for Art

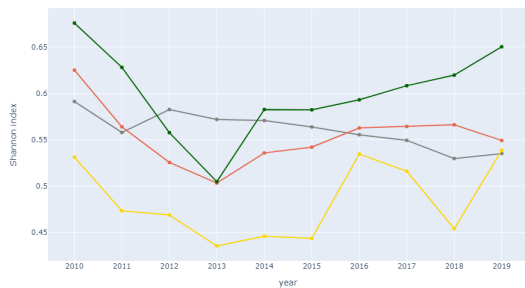


Figure: Comparing median Shannon on citing Countries for Art

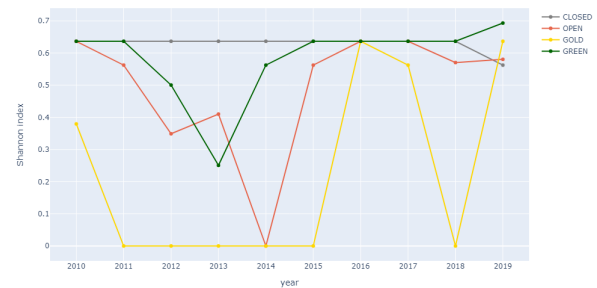


Figure: Comparing mean Shannon on citing Countries for Biology

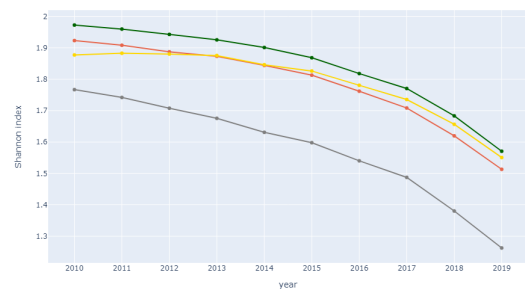


Figure: Comparing median Shannon on citing Countries for Biology

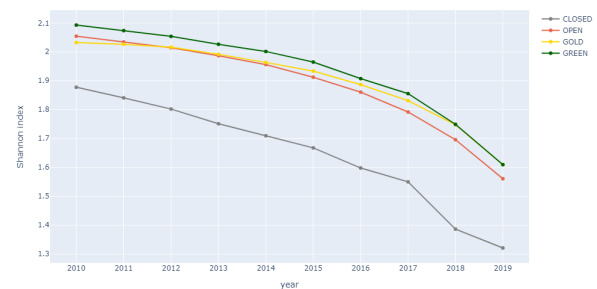


Figure: Comparing mean Shannon on citing Countries for Business

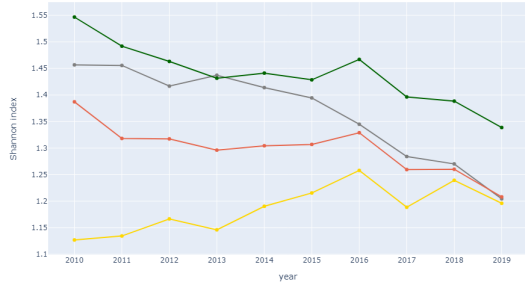


Figure: Comparing median Shannon on citing Countries for Business

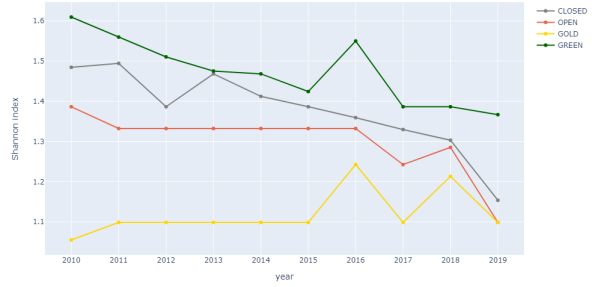


Figure: Comparing mean Shannon on citing Countries for Chemistry

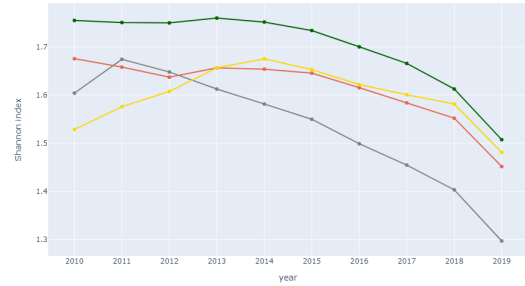


Figure: Comparing median Shannon on citing Countries for Chemistry

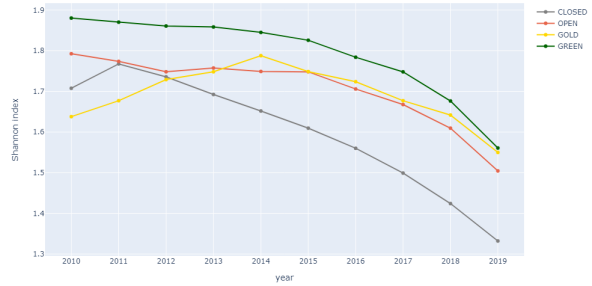


Figure: Comparing mean Shannon on citing Countries for Computer science

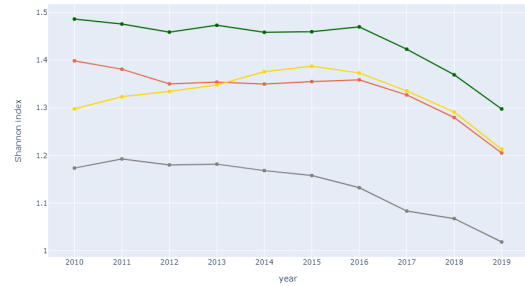


Figure: Comparing median Shannon on citing Countries for Computer science

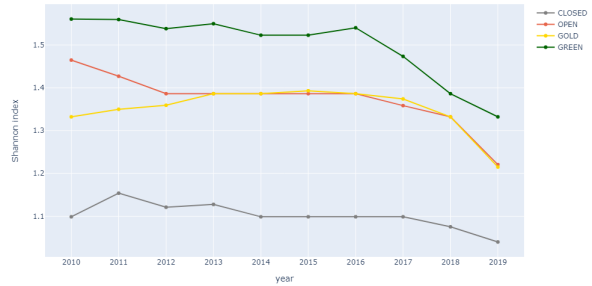


Figure: Comparing mean Shannon on citing Countries for Economics

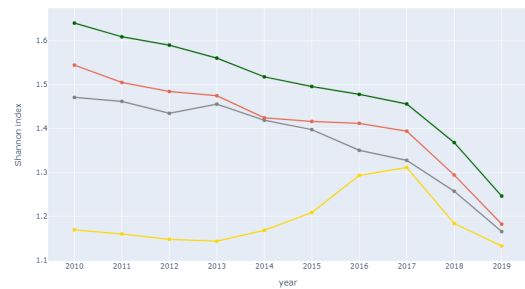


Figure: Comparing median Shannon on citing Countries for Economics

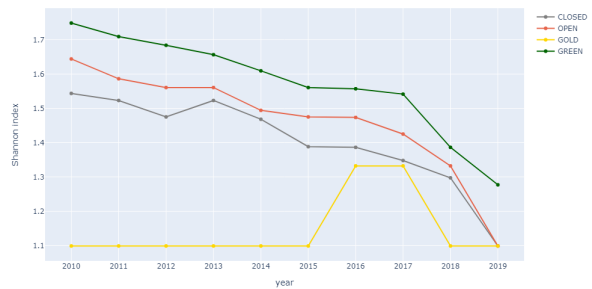


Figure: Comparing mean Shannon on citing Countries for Engineering

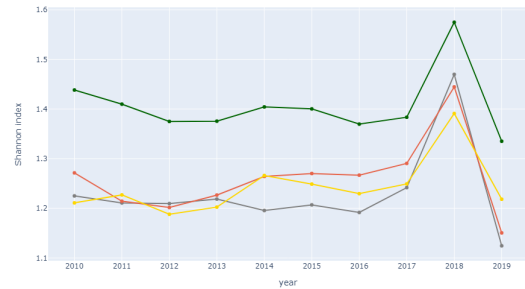


Figure: Comparing median Shannon on citing Countries for Engineering

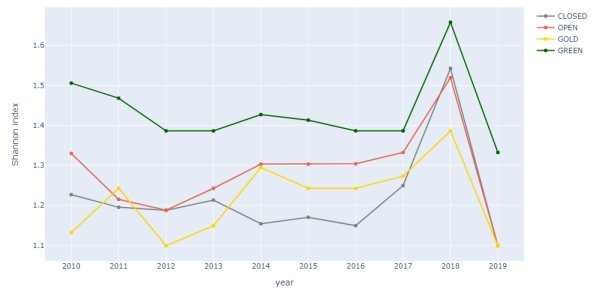


Figure: Comparing mean Shannon on citing Countries for Environmental science

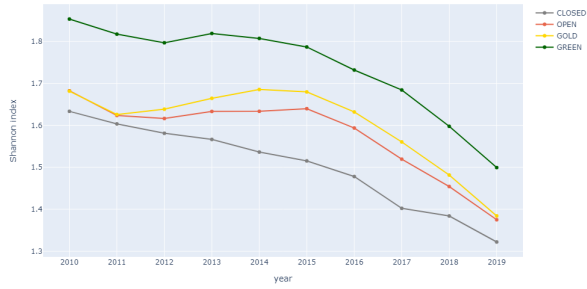


Figure: Comparing median Shannon on citing Countries for Environmental science

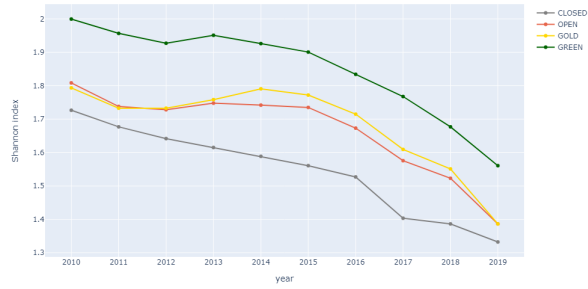


Figure: Comparing mean Shannon on citing Countries for Geography

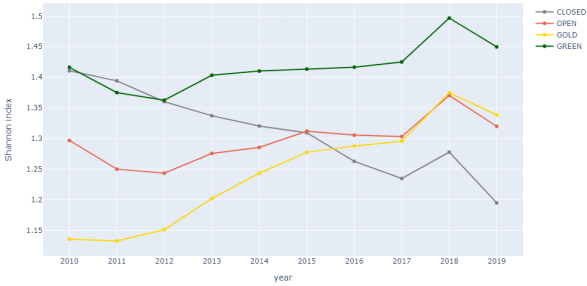


Figure: Comparing median Shannon on citing Countries for Geography

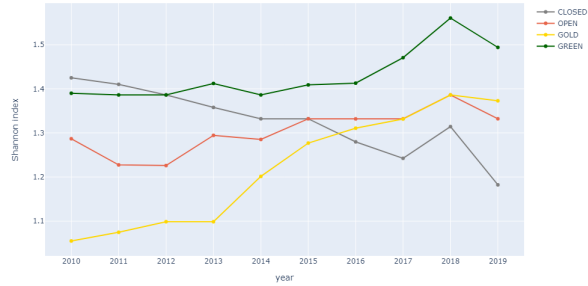


Figure: Comparing mean Shannon on citing Countries for Geology

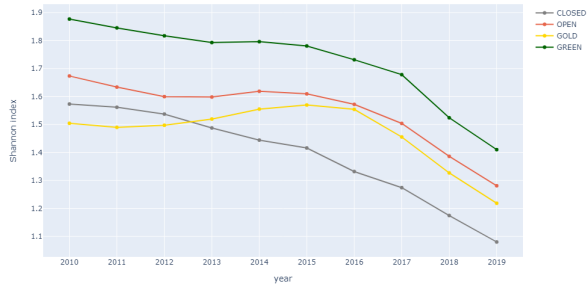


Figure: Comparing median Shannon on citing Countries for Geology

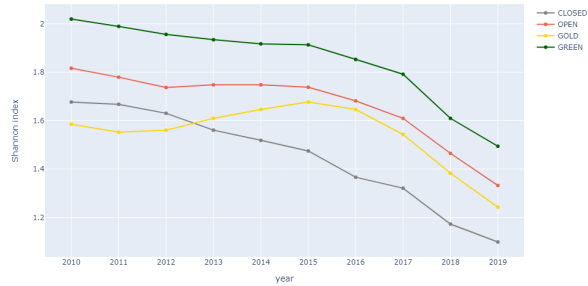


Figure: Comparing mean Shannon on citing Countries for History

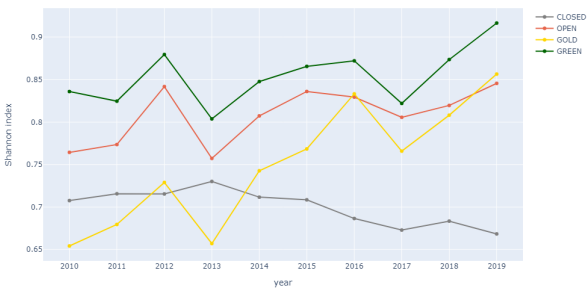


Figure: Comparing median Shannon on citing Countries for History

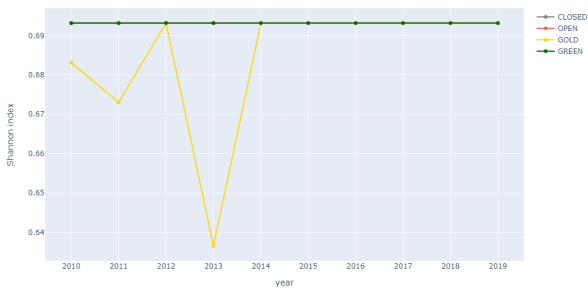


Figure: Comparing mean Shannon on citing Countries for Materials science

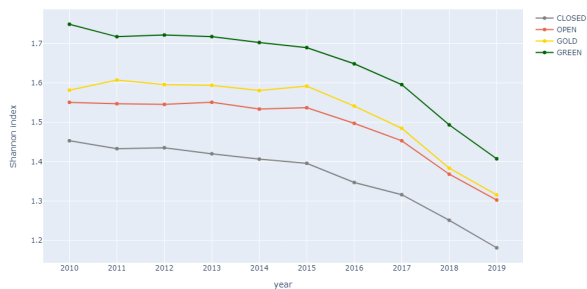


Figure: Comparing median Shannon on citing Countries for Materials science

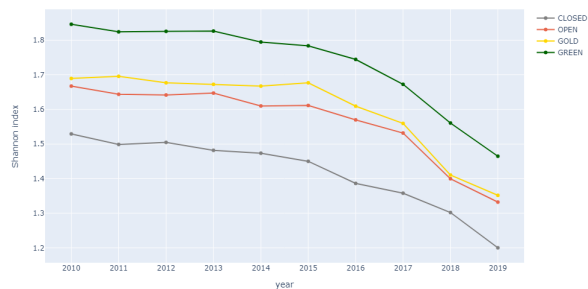


Figure: Comparing mean Shannon on citing Countries for Mathematics

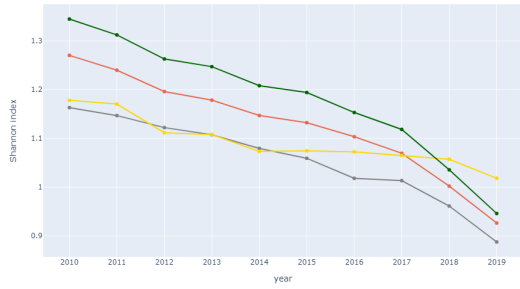


Figure: Comparing median Shannon on citing Countries for Mathematics

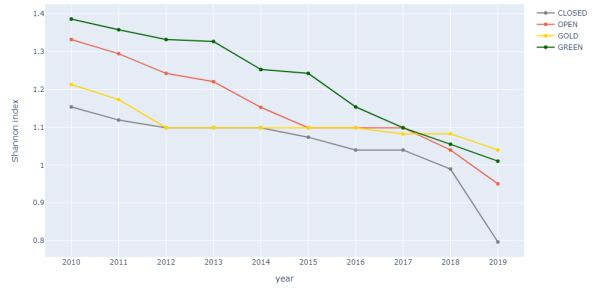


Figure: Comparing mean Shannon on citing Countries for Medicine

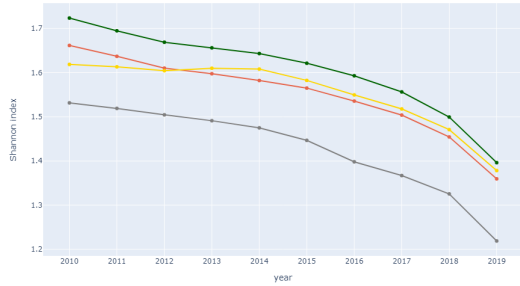


Figure: Comparing median Shannon on citing Countries for Medicine

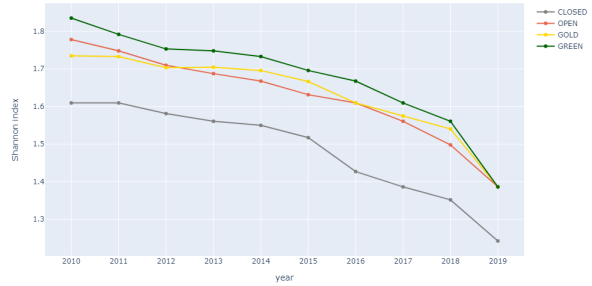


Figure: Comparing mean Shannon on citing Countries for Philosophy

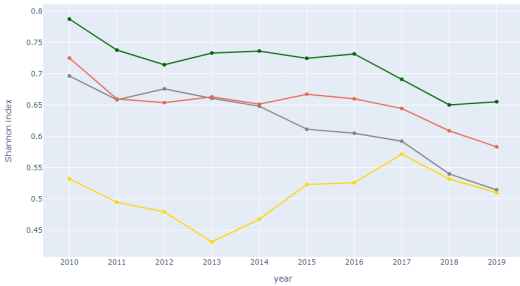


Figure: Comparing median Shannon on citing Countries for Philosophy

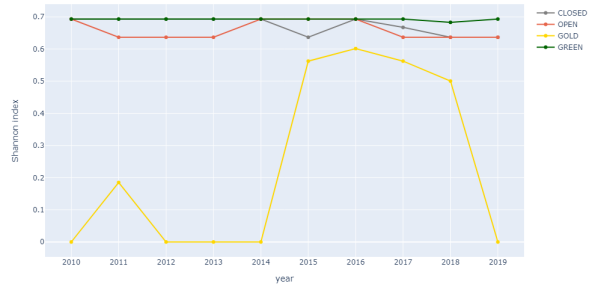


Figure: Comparing mean Shannon on citing Countries for Physics

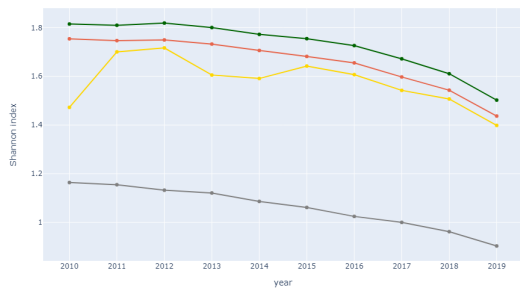


Figure: Comparing median Shannon on citing Countries for Physics

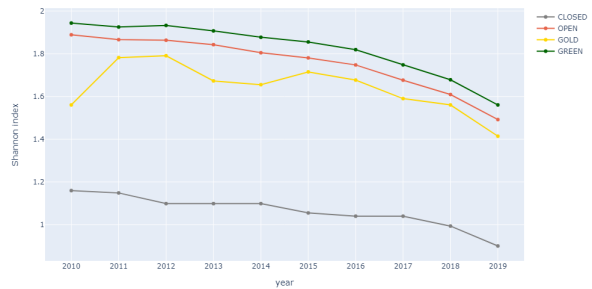


Figure: Comparing mean Shannon on citing Countries for Political science

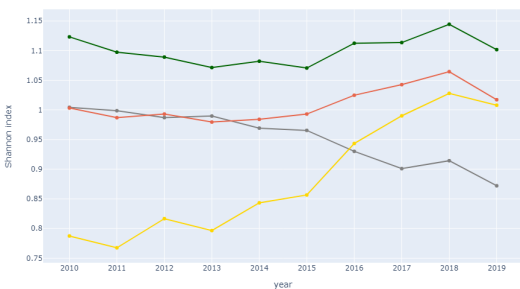


Figure: Comparing median Shannon on citing Countries for Political science

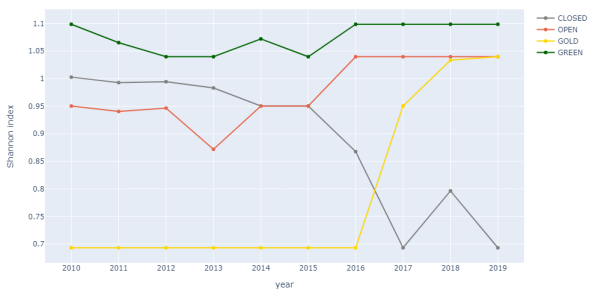


Figure: Comparing mean Shannon on citing Countries for Psychology

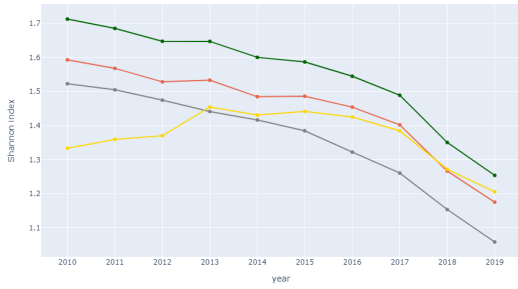


Figure: Comparing median Shannon on citing Countries for Psychology

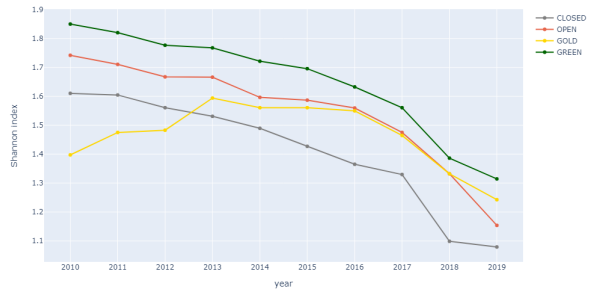


Figure: Comparing mean Shannon on citing Countries for Sociology

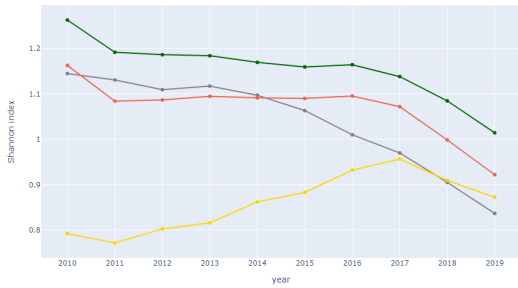
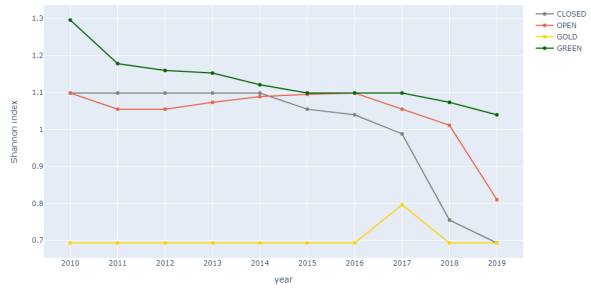


Figure: Comparing median Shannon on citing Countries for Sociology



For Gini-Simpson scores on citing subregions:

Figure: Comparing mean GiniSim on citing Subregions for Art

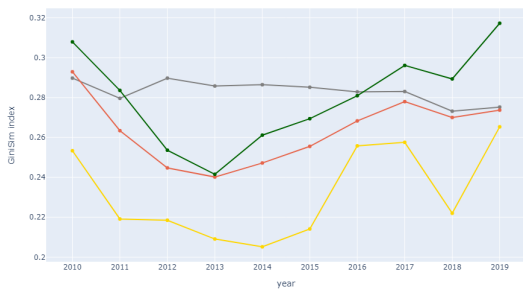


Figure: Comparing median GiniSim on citing Subregions for Art

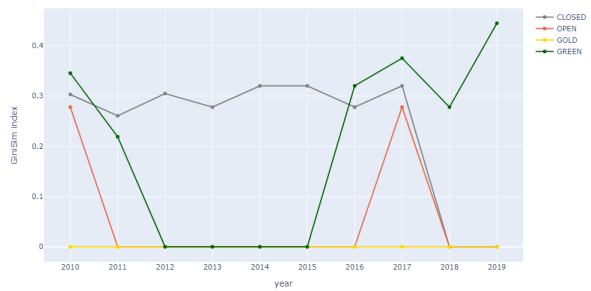


Figure: Comparing mean GiniSim on citing Subregions for Biology

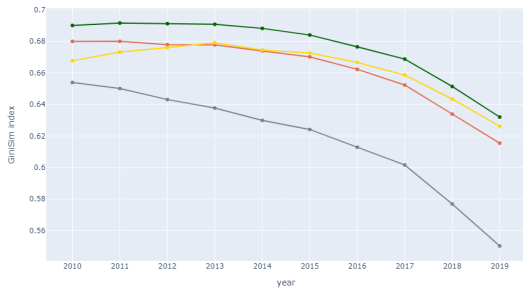


Figure: Comparing median GiniSim on citing Subregions for Biology

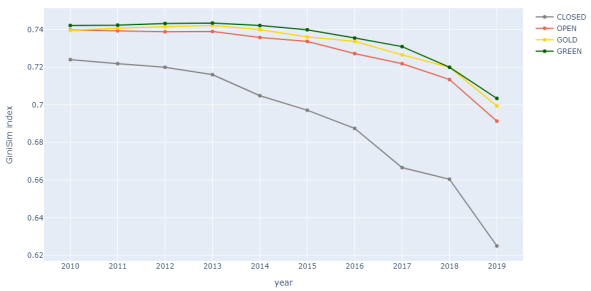


Figure: Comparing mean GiniSim on citing Subregions for Business

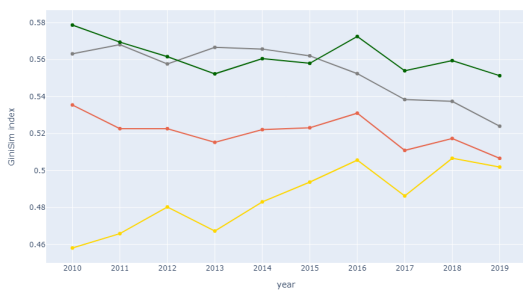


Figure: Comparing median GiniSim on citing Subregions for Business

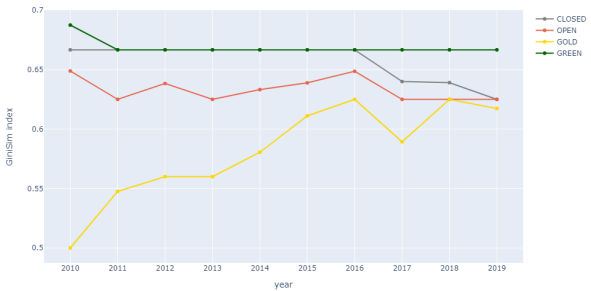


Figure: Comparing mean GiniSim on citing Subregions for Chemistry

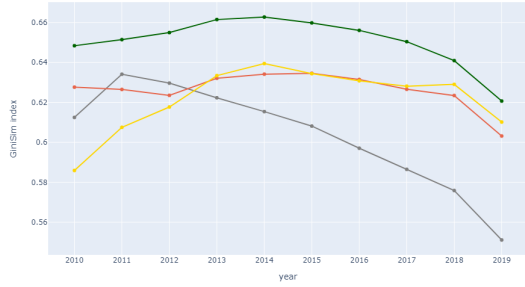


Figure: Comparing median GiniSim on citing Subregions for Chemistry

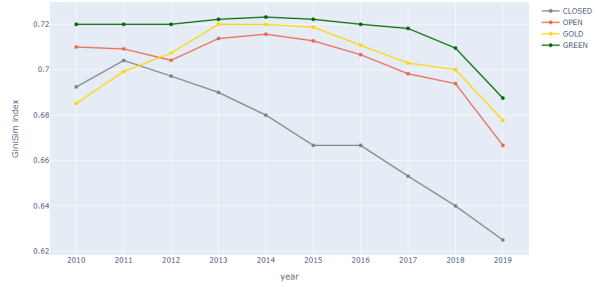


Figure: Comparing mean GiniSim on citing Subregions for Computer science

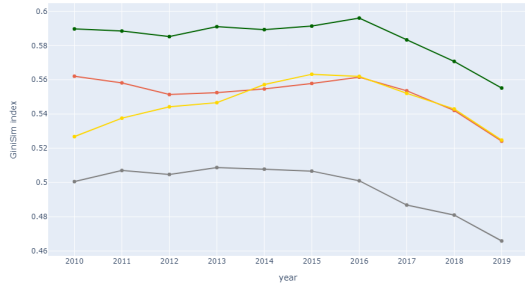


Figure: Comparing median GiniSim on citing Subregions for Computer science

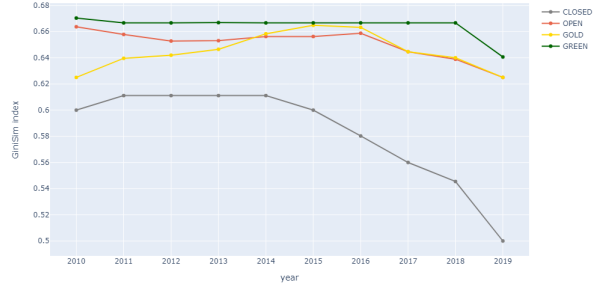


Figure: Comparing mean GiniSim on citing Subregions for Economics

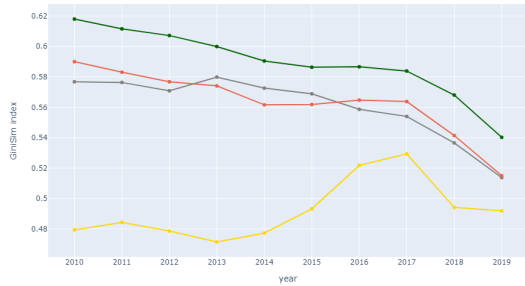


Figure: Comparing median GiniSim on citing Subregions for Economics

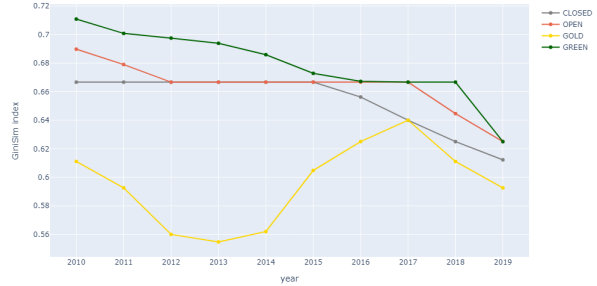


Figure: Comparing mean GiniSim on citing Subregions for Engineering

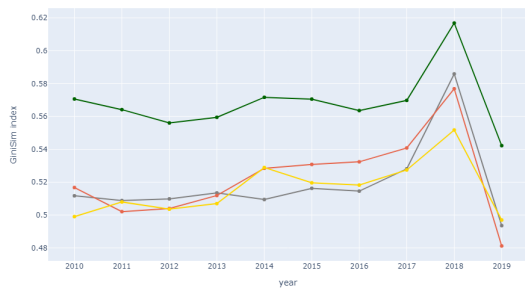


Figure: Comparing median GiniSim on citing Subregions for Engineering

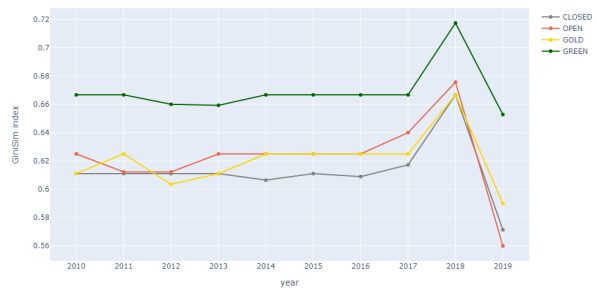


Figure: Comparing mean GiniSim on citing Subregions for Environmental science

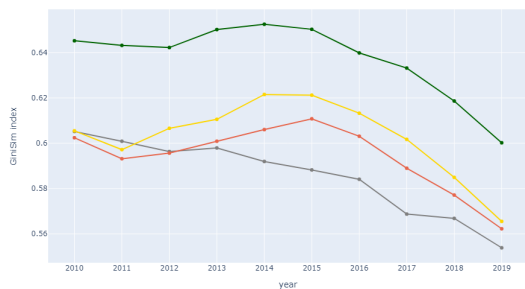


Figure: Comparing median GiniSim on citing Subregions for Environmental science

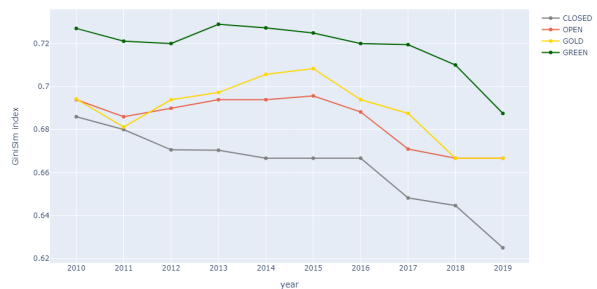


Figure: Comparing mean GiniSim on citing Subregions for Geography

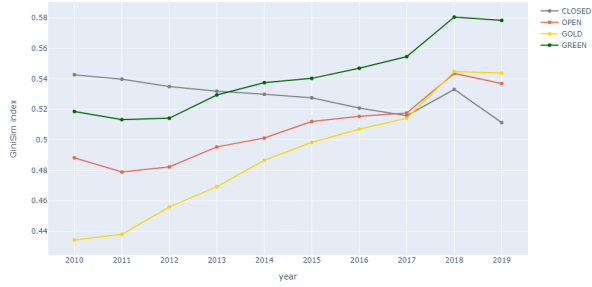


Figure: Comparing median GiniSim on citing Subregions for Geography

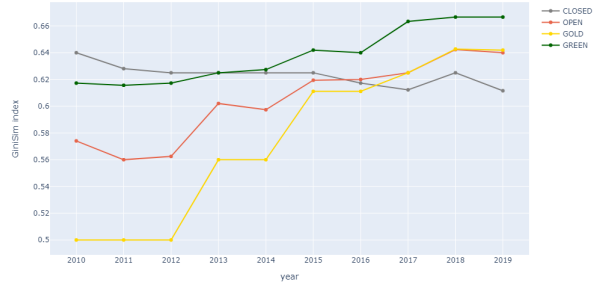


Figure: Comparing mean GiniSim on citing Subregions for Geology

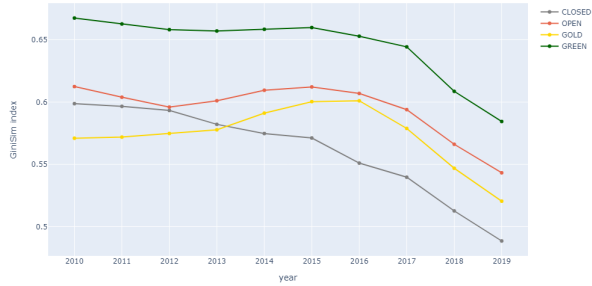


Figure: Comparing median GiniSim on citing Subregions for Geology

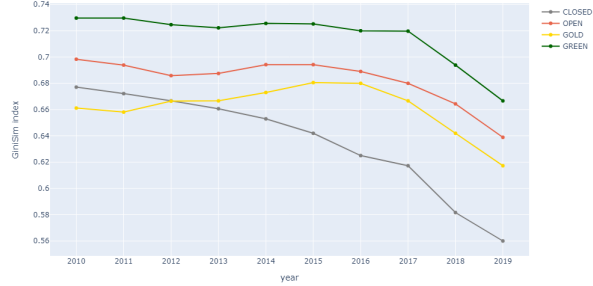


Figure: Comparing mean GiniSim on citing Subregions for History

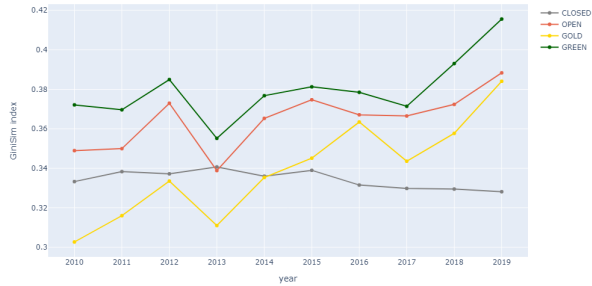


Figure: Comparing median GiniSim on citing Subregions for History

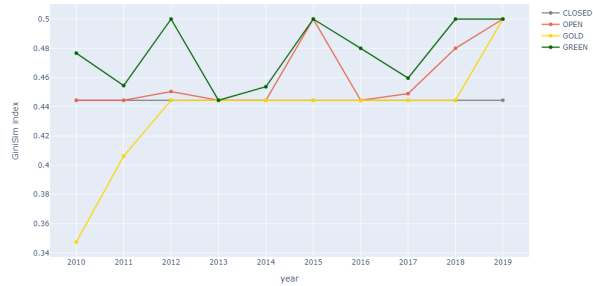


Figure: Comparing mean GiniSim on citing Subregions for Materials science

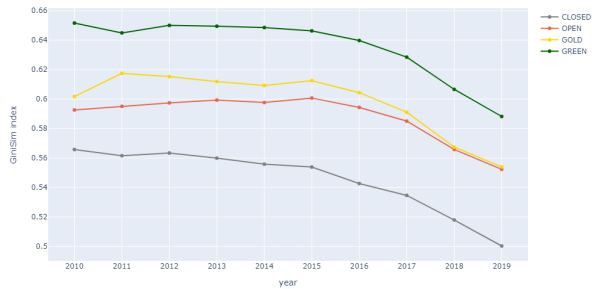


Figure: Comparing median GiniSim on citing Subregions for Materials science

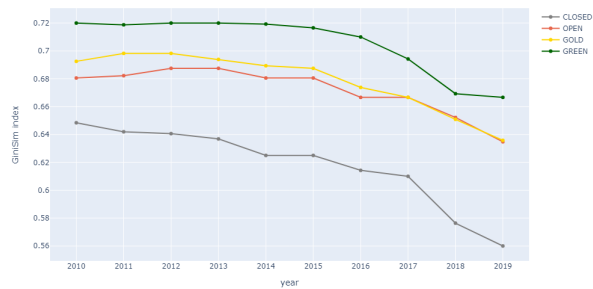


Figure: Comparing mean GiniSim on citing Subregions for Mathematics

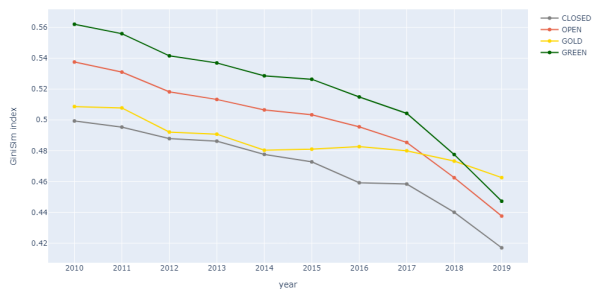


Figure: Comparing median GiniSim on citing Subregions for Mathematics

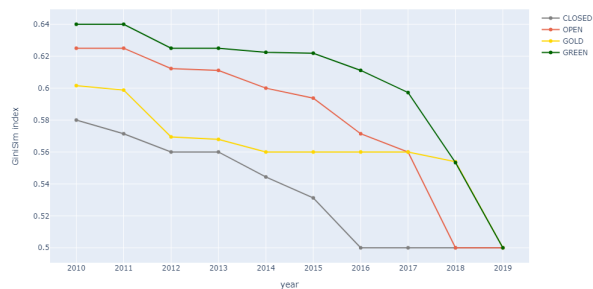


Figure: Comparing mean GiniSim on citing Subregions for Medicine

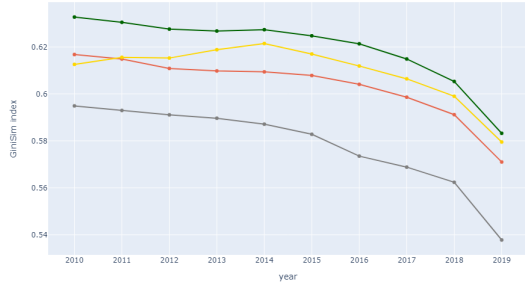


Figure: Comparing median GiniSim on citing Subregions for Medicine

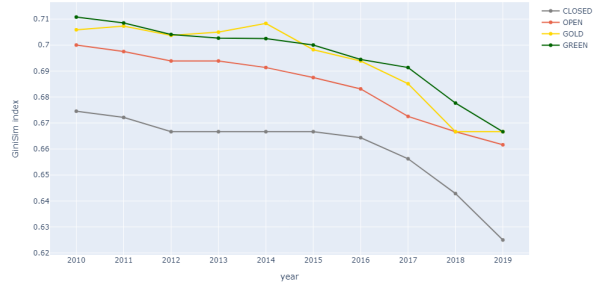


Figure: Comparing mean GiniSim on citing Subregions for Philosophy

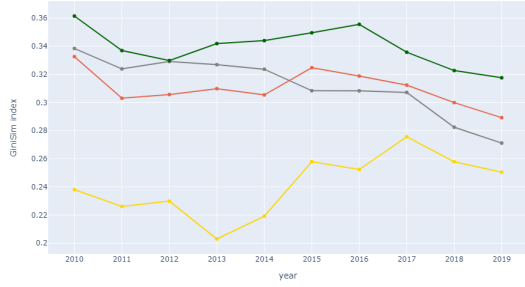


Figure: Comparing median GiniSim on citing Subregions for Philosophy

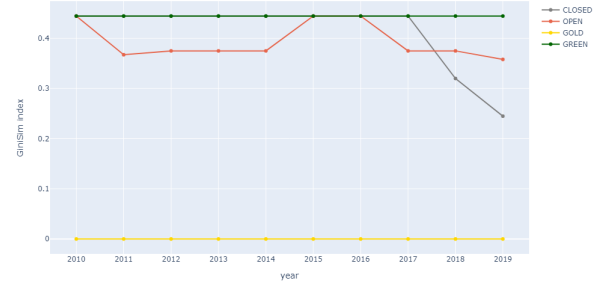


Figure: Comparing mean GiniSim on citing Subregions for Physics

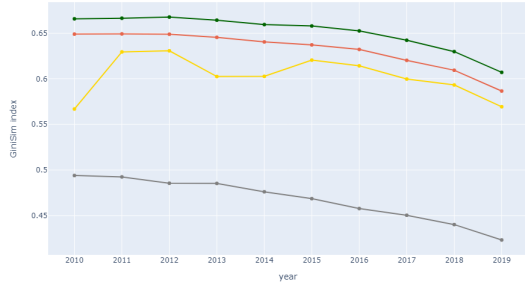


Figure: Comparing median GiniSim on citing Subregions for Physics

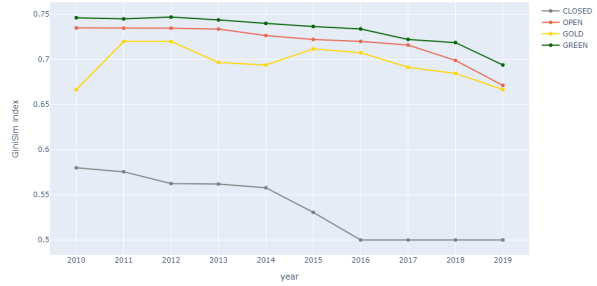


Figure: Comparing mean GiniSim on citing Subregions for Political science

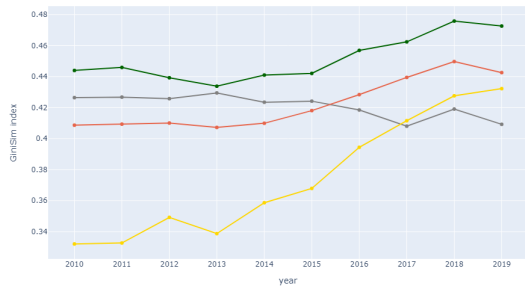


Figure: Comparing median GiniSim on citing Subregions for Political science

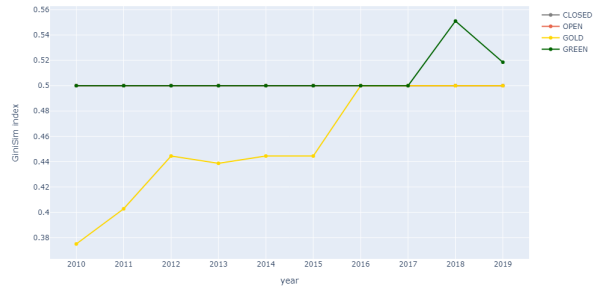


Figure: Comparing mean GiniSim on citing Subregions for Psychology

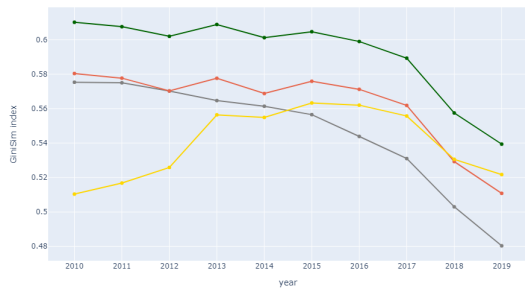


Figure: Comparing median GiniSim on citing Subregions for Psychology

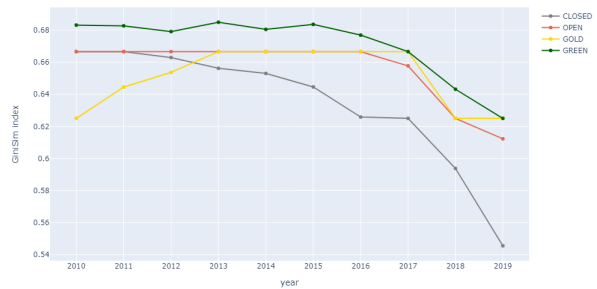


Figure: Comparing mean GiniSim on citing Subregions for Sociology

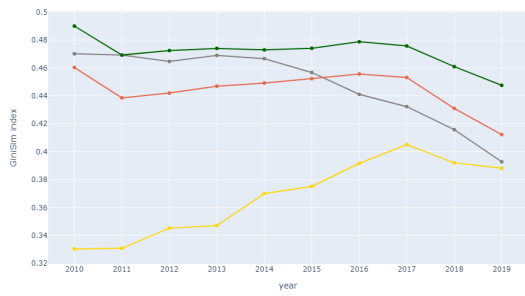
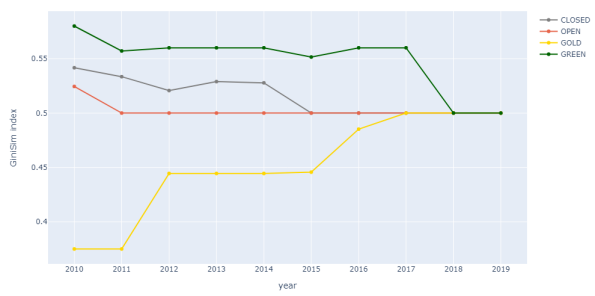


Figure: Comparing median GiniSim on citing Subregions for Sociology



For Shannon scores on citing subregions:

Figure: Comparing mean Shannon on citing Subregions for Art

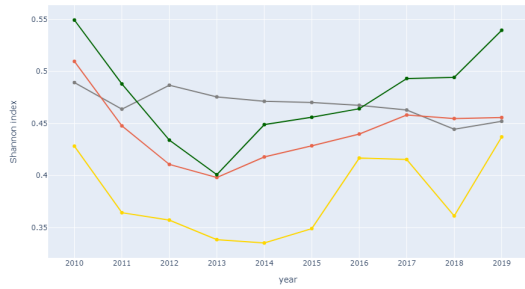


Figure: Comparing median Shannon on citing Subregions for Art

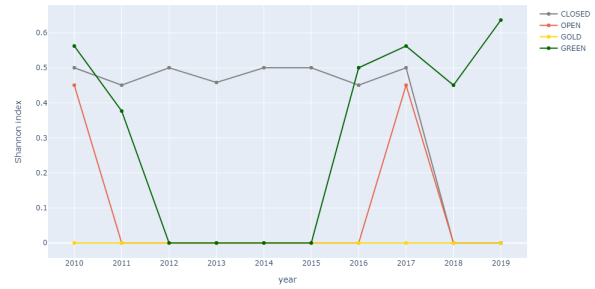


Figure: Comparing mean Shannon on citing Subregions for Biology

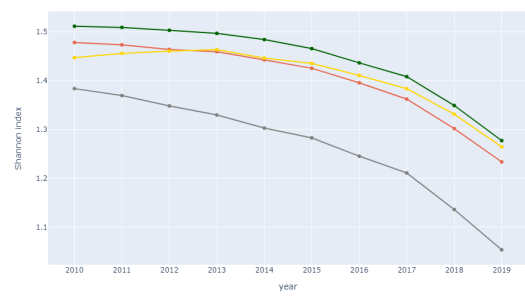


Figure: Comparing median Shannon on citing Subregions for Biology

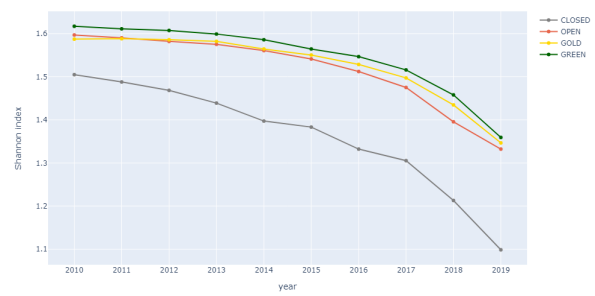


Figure: Comparing mean Shannon on citing Subregions for Business

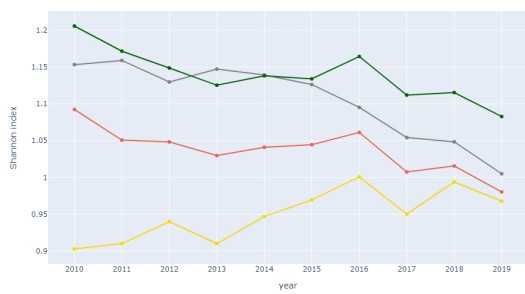


Figure: Comparing median Shannon on citing Subregions for Business

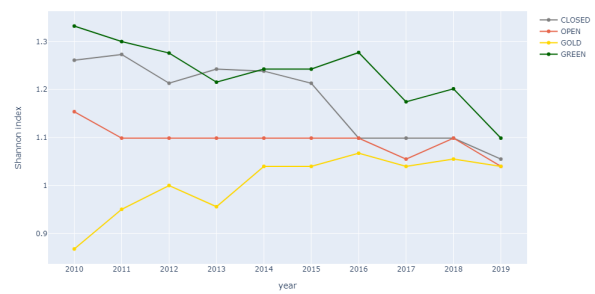


Figure: Comparing mean Shannon on citing Subregions for Chemistry

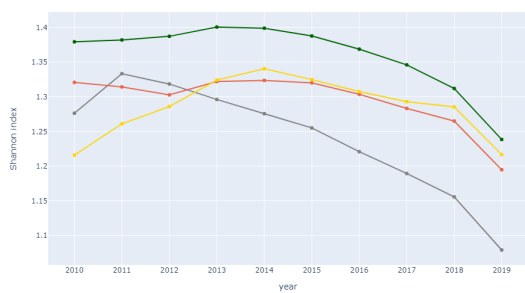


Figure: Comparing median Shannon on citing Subregions for Chemistry

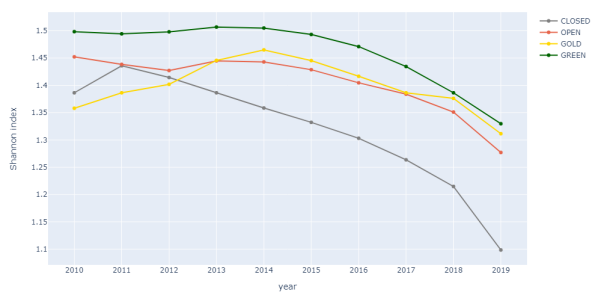


Figure: Comparing mean Shannon on citing Subregions for Computer science

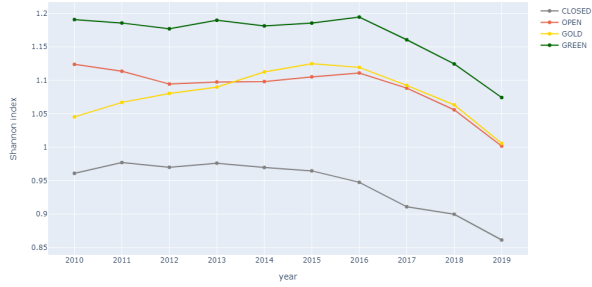


Figure: Comparing median Shannon on citing Subregions for Computer science

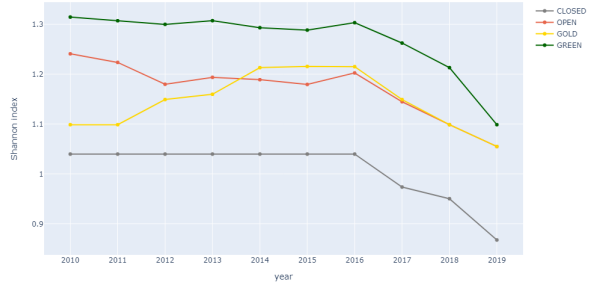


Figure: Comparing mean Shannon on citing Subregions for Economics

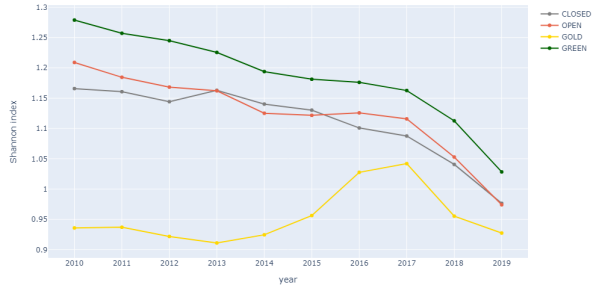


Figure: Comparing median Shannon on citing Subregions for Economics

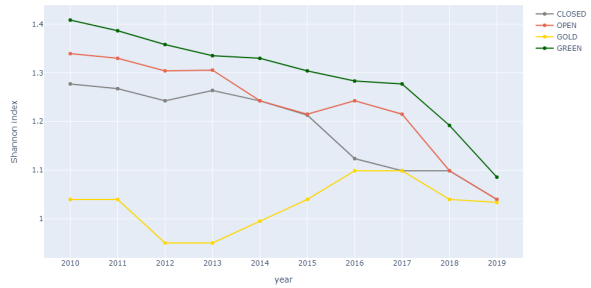


Figure: Comparing mean Shannon on citing Subregions for Engineering

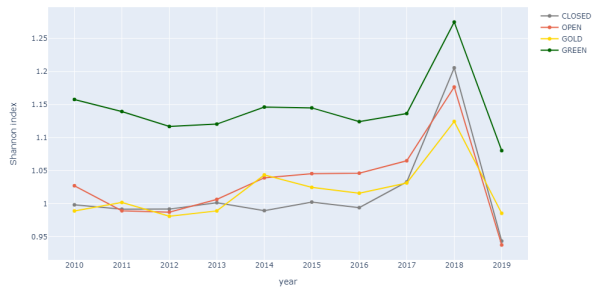


Figure: Comparing median Shannon on citing Subregions for Engineering

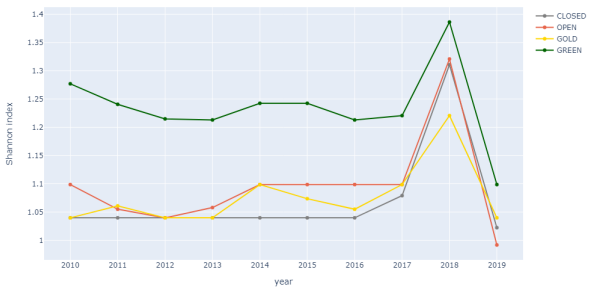


Figure: Comparing mean Shannon on citing Subregions for Environmental science

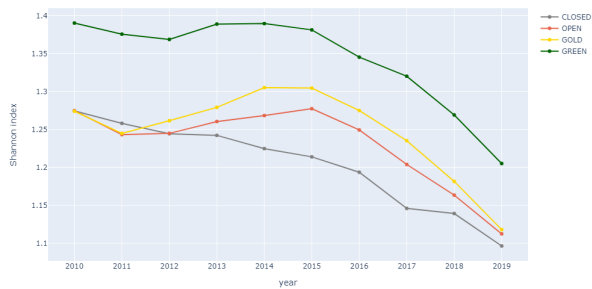


Figure: Comparing median Shannon on citing Subregions for Environmental science

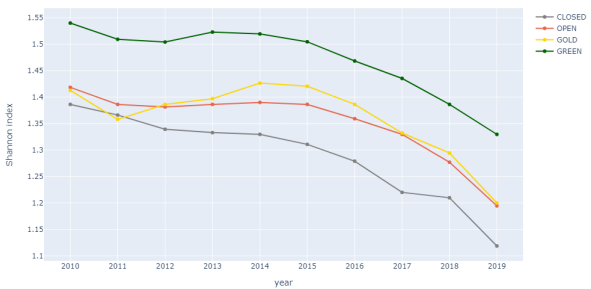


Figure: Comparing mean Shannon on citing Subregions for Geography

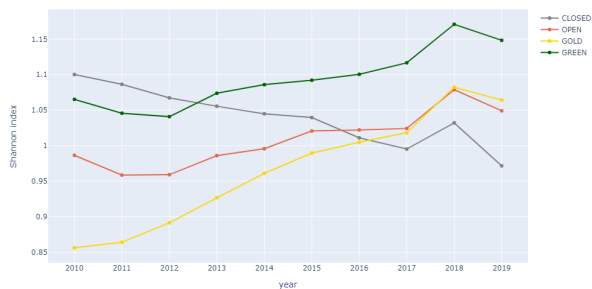


Figure: Comparing median Shannon on citing Subregions for Geography

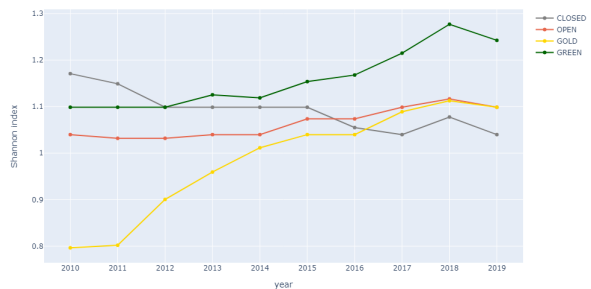


Figure: Comparing mean Shannon on citing Subregions for Geology

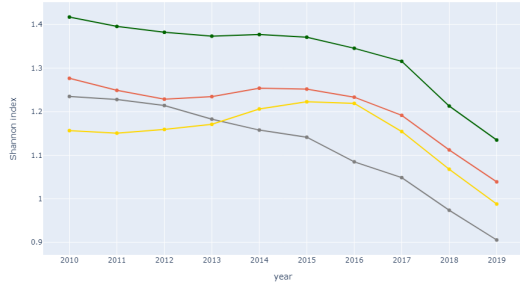


Figure: Comparing median Shannon on citing Subregions for Geology

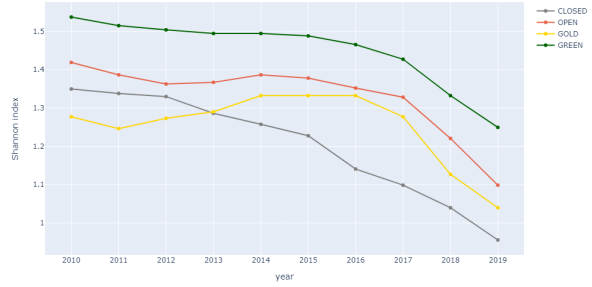


Figure: Comparing mean Shannon on citing Subregions for History

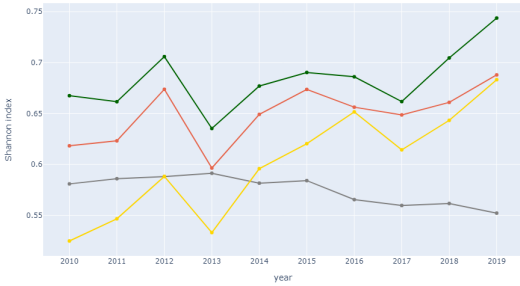


Figure: Comparing median Shannon on citing Subregions for History

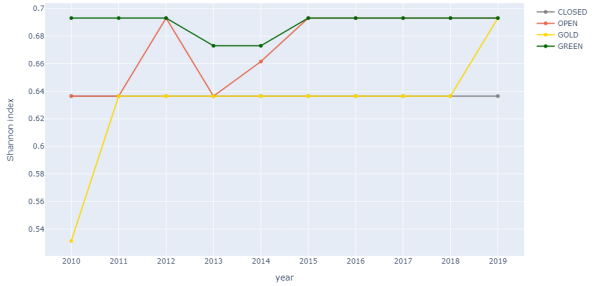


Figure: Comparing mean Shannon on citing Subregions for Materials science

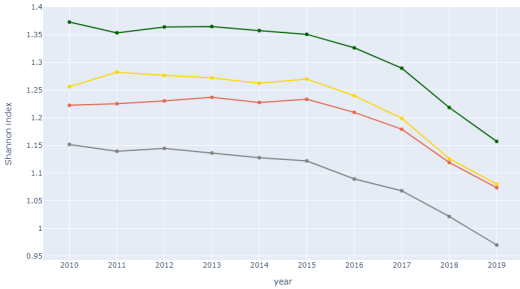


Figure: Comparing median Shannon on citing Subregions for Materials science

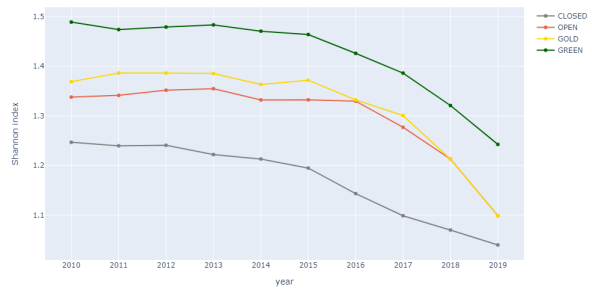


Figure: Comparing mean Shannon on citing Subregions for Mathematics

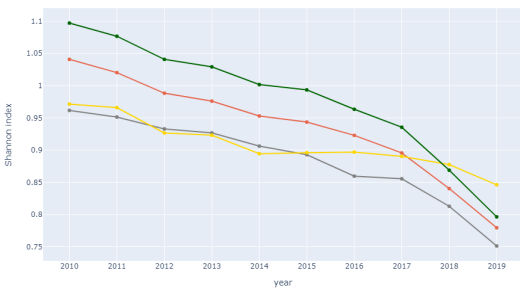


Figure: Comparing median Shannon on citing Subregions for Mathematics

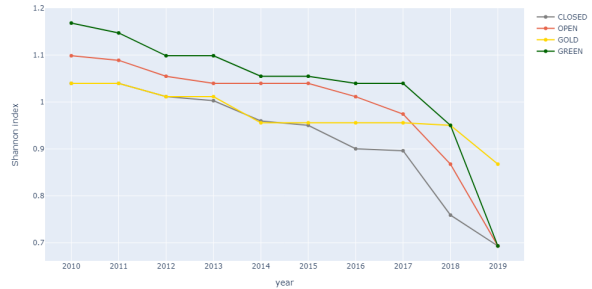


Figure: Comparing mean Shannon on citing Subregions for Medicine

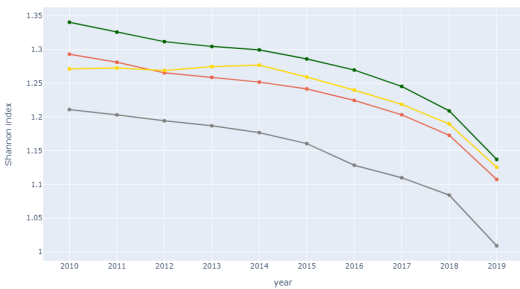


Figure: Comparing median Shannon on citing Subregions for Medicine

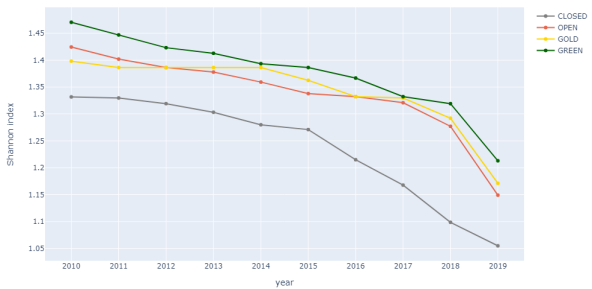


Figure: Comparing mean Shannon on citing Subregions for Philosophy

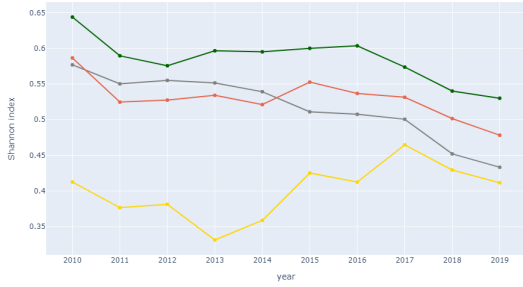


Figure: Comparing median Shannon on citing Subregions for Philosophy

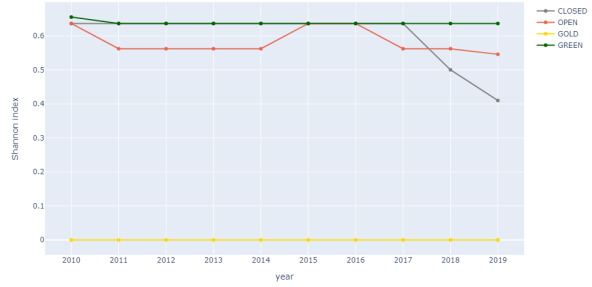


Figure: Comparing mean Shannon on citing Subregions for Physics

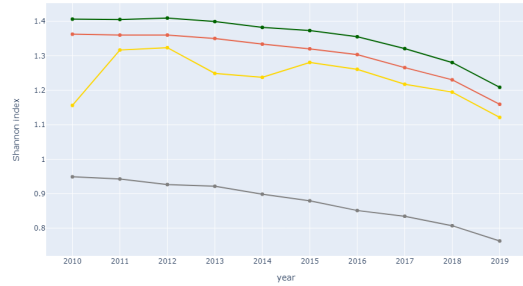


Figure: Comparing median Shannon on citing Subregions for Physics

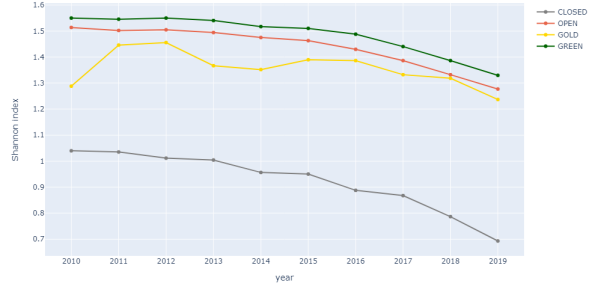


Figure: Comparing mean Shannon on citing Subregions for Political science

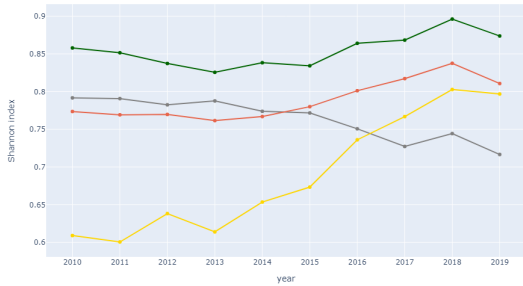


Figure: Comparing median Shannon on citing Subregions for Political science

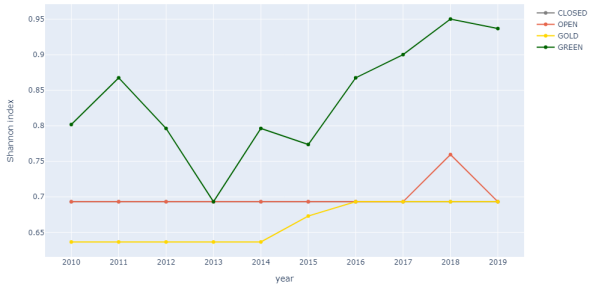


Figure: Comparing mean Shannon on citing Subregions for Psychology

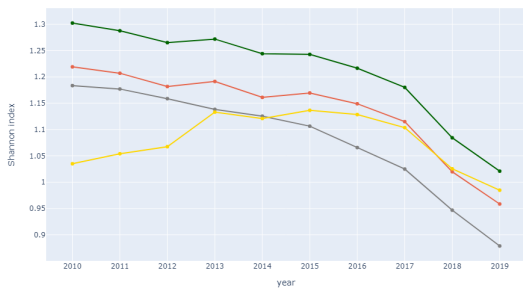


Figure: Comparing median Shannon on citing Subregions for Psychology

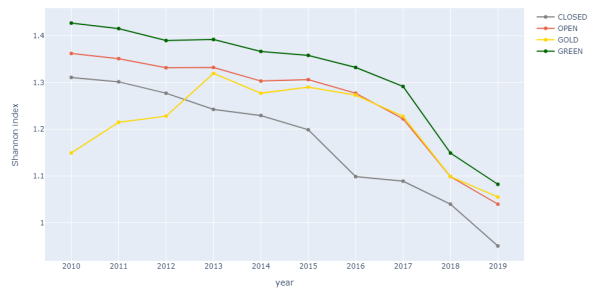


Figure: Comparing mean Shannon on citing Subregions for Sociology

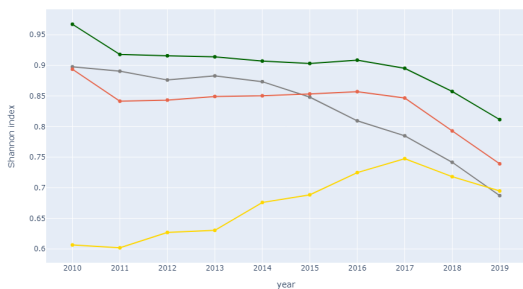
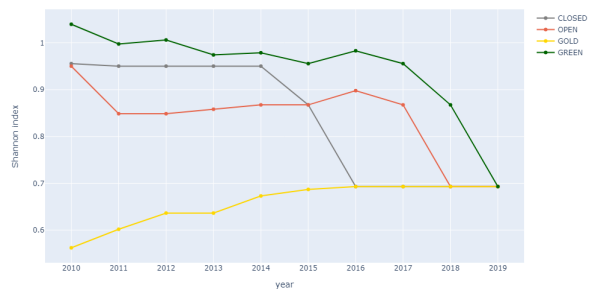


Figure: Comparing median Shannon on citing Subregions for Sociology



For Gini-Simpson scores on citing regions:

Figure: Comparing mean GiniSim on citing Regions for Art

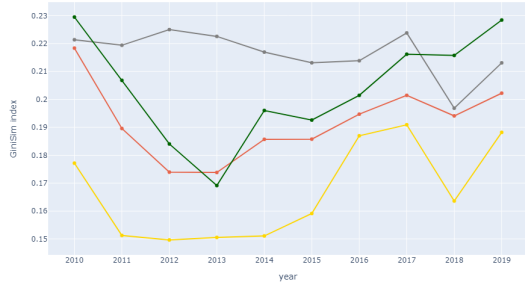


Figure: Comparing median GiniSim on citing Regions for Art

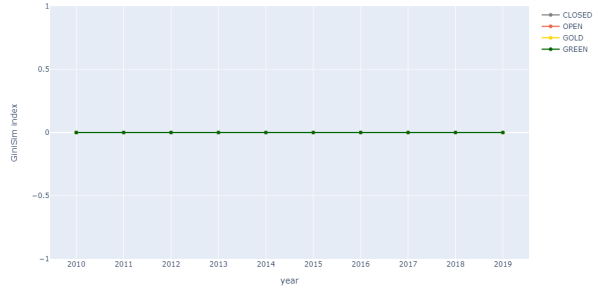


Figure: Comparing mean GiniSim on citing Regions for Biology

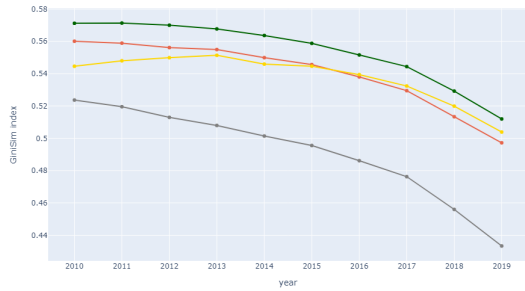


Figure: Comparing median GiniSim on citing Regions for Biology

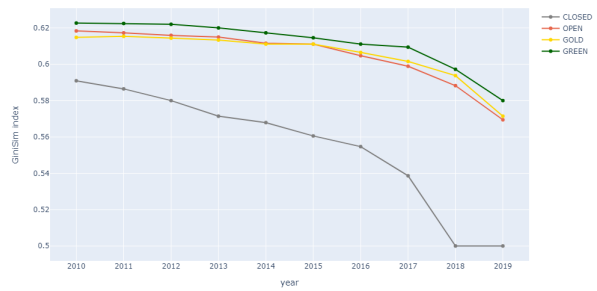


Figure: Comparing mean GiniSim on citing Regions for Business

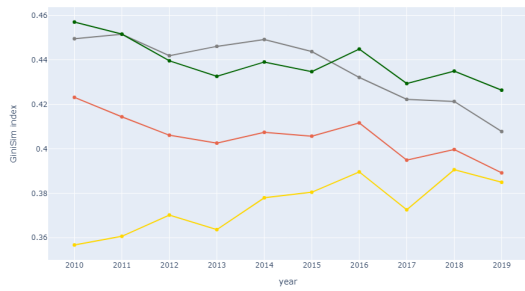


Figure: Comparing median GiniSim on citing Regions for Business

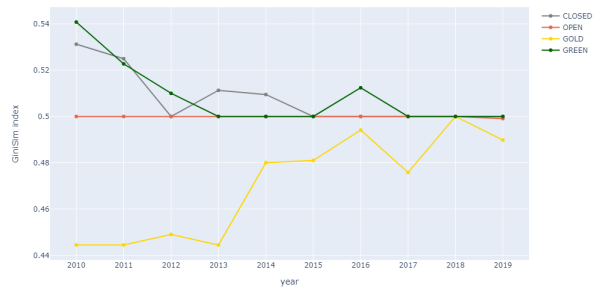


Figure: Comparing mean GiniSim on citing Regions for Chemistry

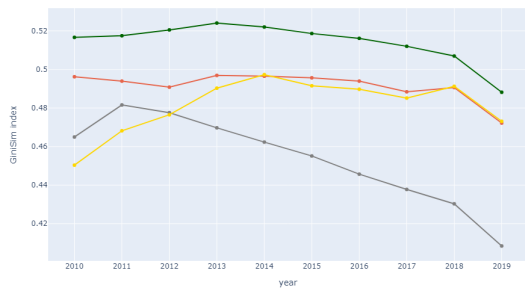


Figure: Comparing median GiniSim on citing Regions for Chemistry

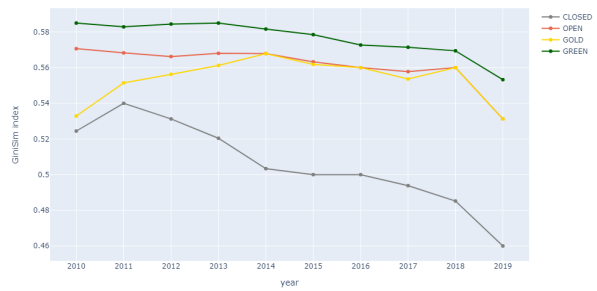


Figure: Comparing mean GiniSim on citing Regions for Computer science

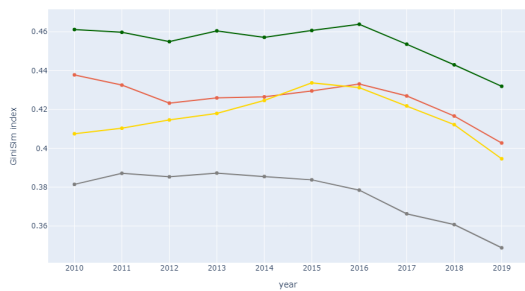


Figure: Comparing median GiniSim on citing Regions for Computer science

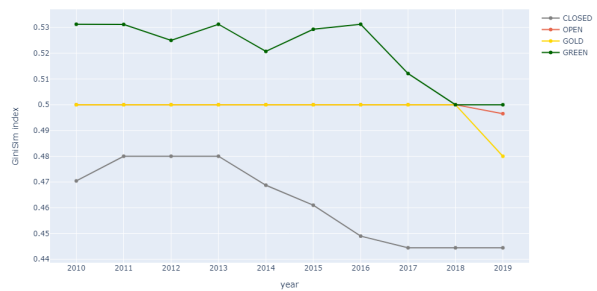


Figure: Comparing mean GiniSim on citing Regions for Economics

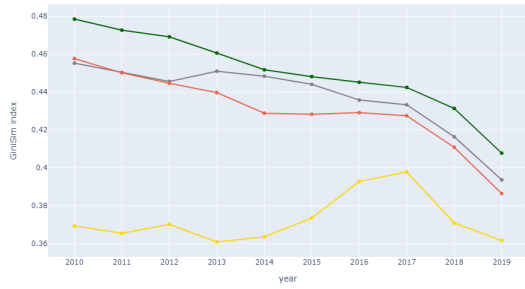


Figure: Comparing median GiniSim on citing Regions for Economics

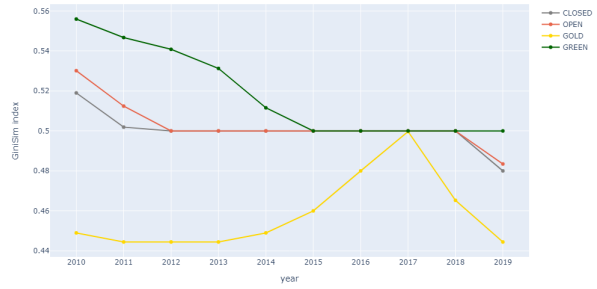


Figure: Comparing mean GiniSim on citing Regions for Engineering

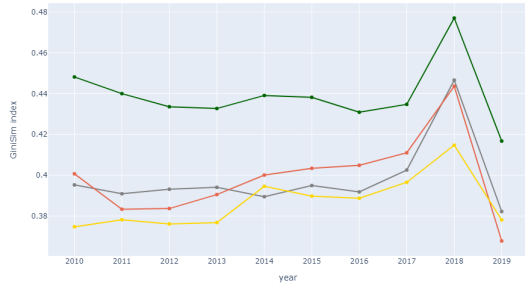


Figure: Comparing median GiniSim on citing Regions for Engineering

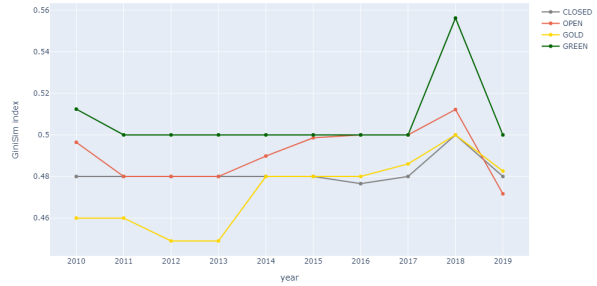


Figure: Comparing mean GiniSim on citing Regions for Environmental science

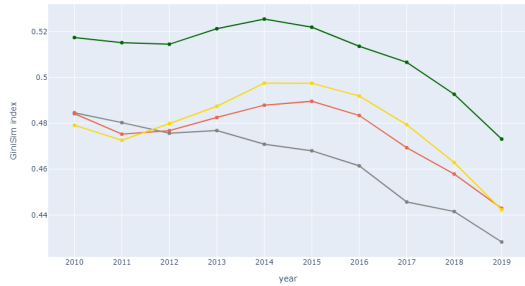


Figure: Comparing median GiniSim on citing Regions for Environmental science

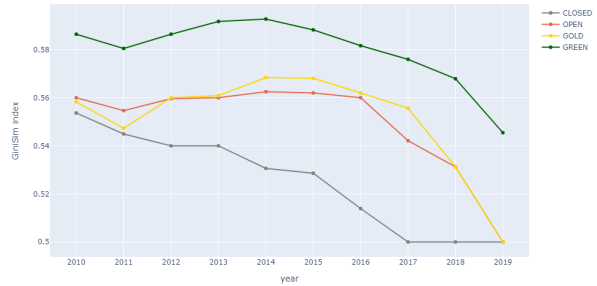


Figure: Comparing mean GiniSim on citing Regions for Geography

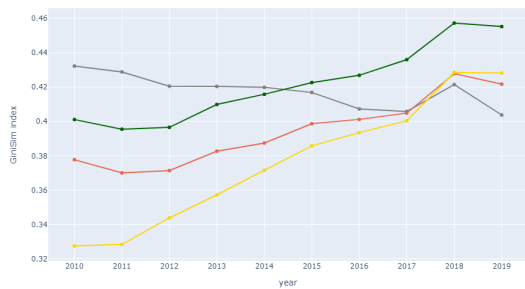


Figure: Comparing median GiniSim on citing Regions for Geography

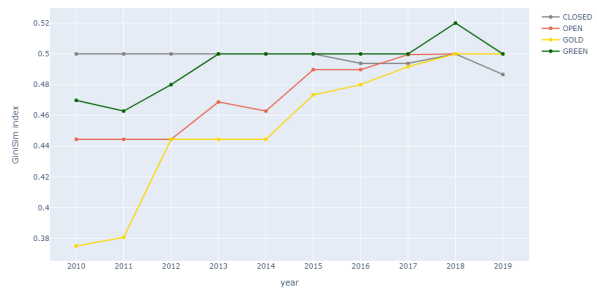


Figure: Comparing mean GiniSim on citing Regions for Geology

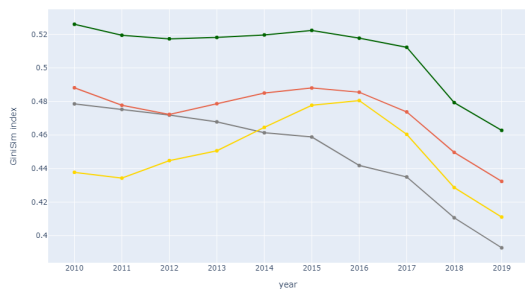


Figure: Comparing median GiniSim on citing Regions for Geology

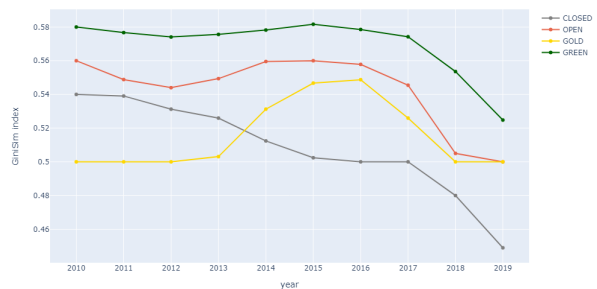


Figure: Comparing mean GiniSim on citing Regions for History

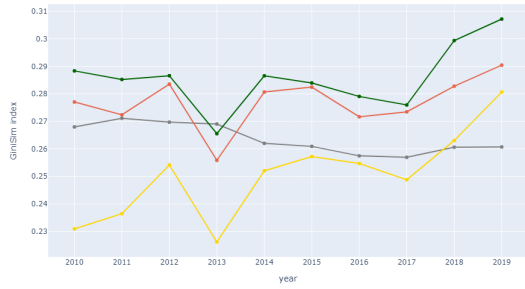


Figure: Comparing median GiniSim on citing Regions for History

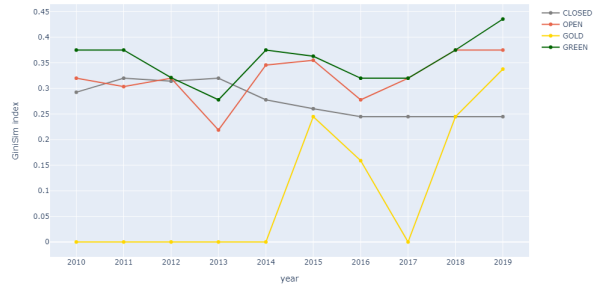


Figure: Comparing mean GiniSim on citing Regions for Materials science

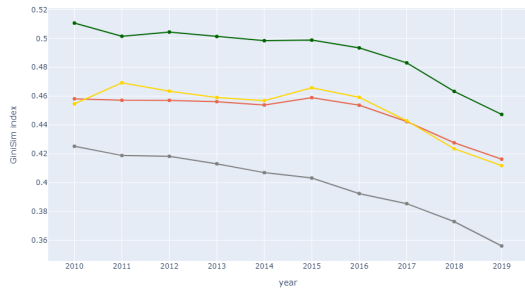


Figure: Comparing median GiniSim on citing Regions for Materials science

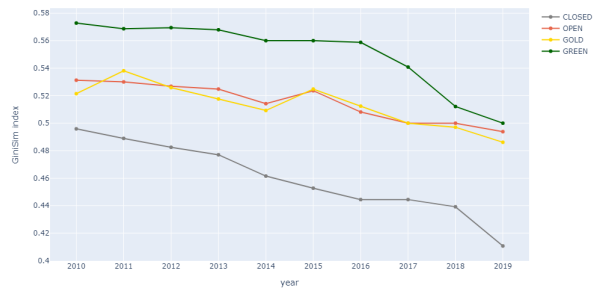


Figure: Comparing mean GiniSim on citing Regions for Mathematics

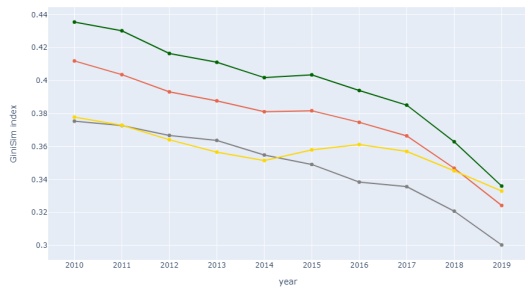


Figure: Comparing median GiniSim on citing Regions for Mathematics

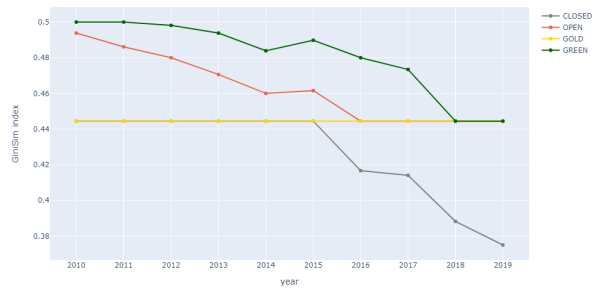


Figure: Comparing mean GiniSim on citing Regions for Medicine

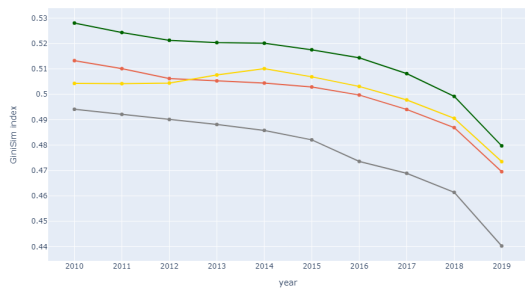


Figure: Comparing median GiniSim on citing Regions for Medicine

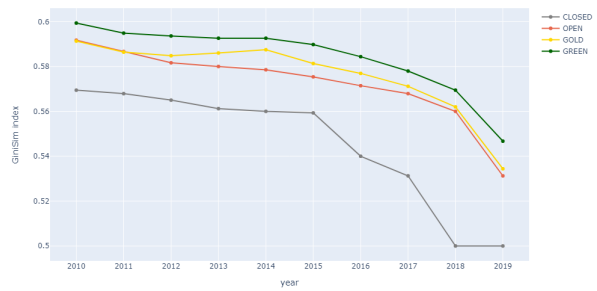


Figure: Comparing mean GiniSim on citing Regions for Philosophy

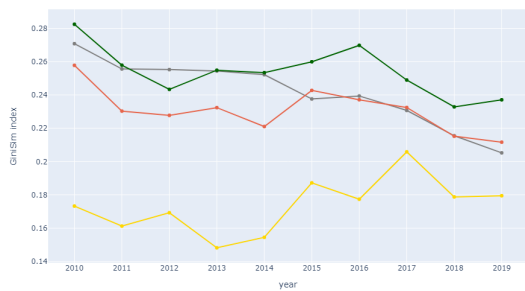


Figure: Comparing median GiniSim on citing Regions for Philosophy

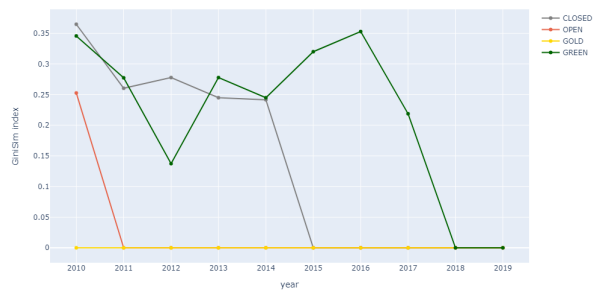


Figure: Comparing mean GiniSim on citing Regions for Physics

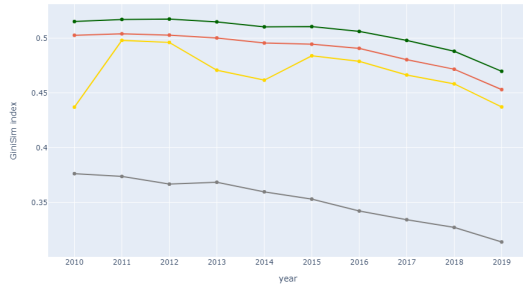


Figure: Comparing median GiniSim on citing Regions for Physics

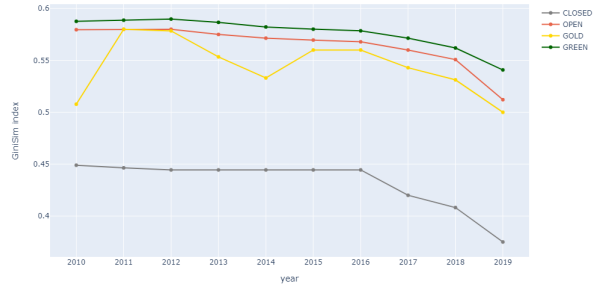


Figure: Comparing mean GiniSim on citing Regions for Political science

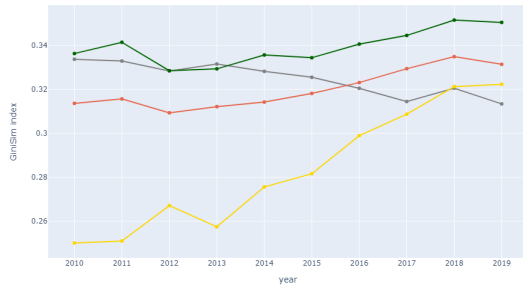


Figure: Comparing median GiniSim on citing Regions for Political science

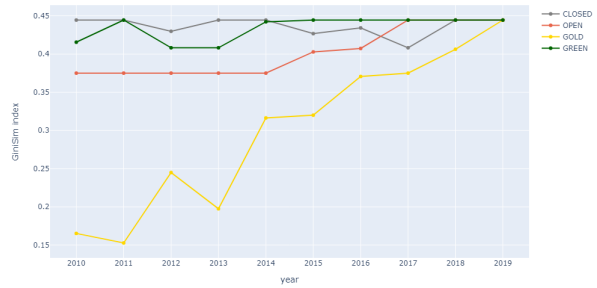


Figure: Comparing mean GiniSim on citing Regions for Psychology

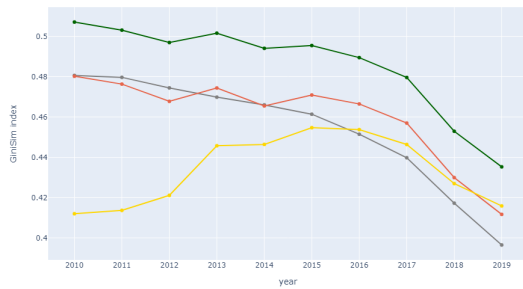


Figure: Comparing median GiniSim on citing Regions for Psychology

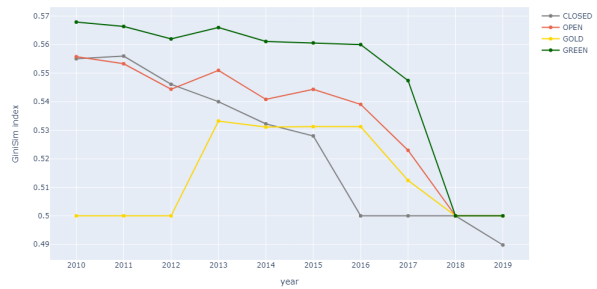


Figure: Comparing mean GiniSim on citing Regions for Sociology

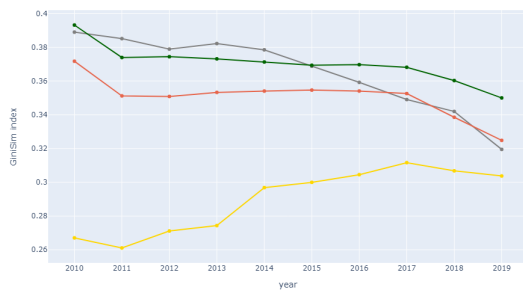
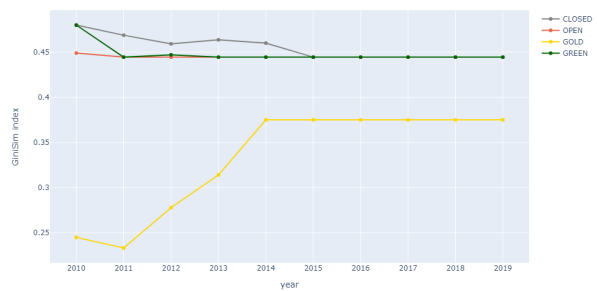


Figure: Comparing median GiniSim on citing Regions for Sociology



For Shannon scores on citing regions:

Figure: Comparing mean Shannon on citing Regions for Art

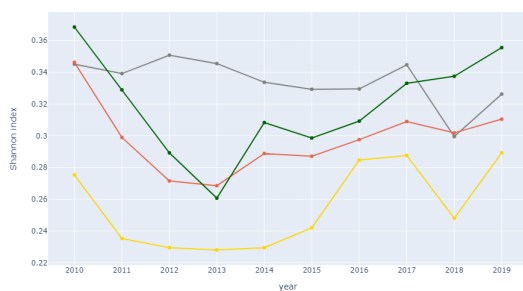


Figure: Comparing median Shannon on citing Regions for Art

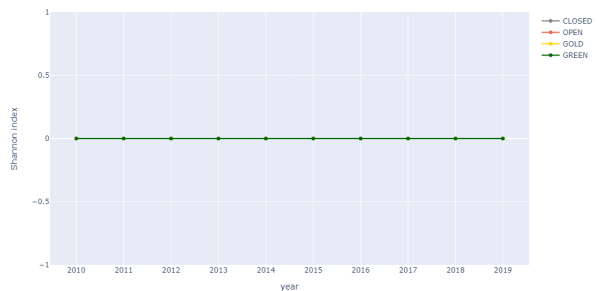


Figure: Comparing mean Shannon on citing Regions for Biology

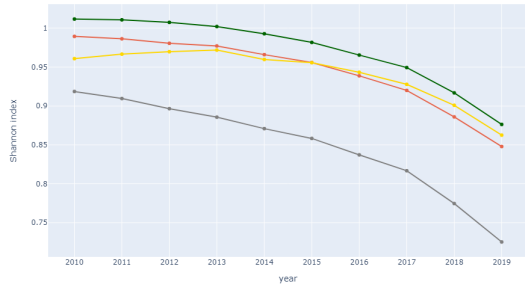


Figure: Comparing median Shannon on citing Regions for Biology

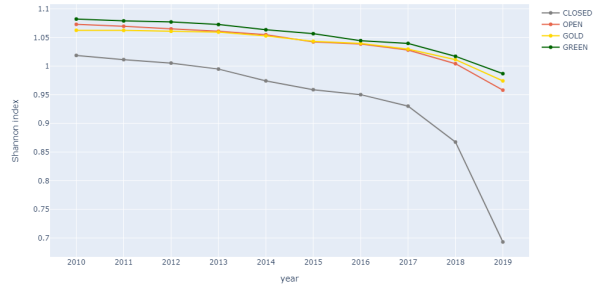


Figure: Comparing mean Shannon on citing Regions for Business

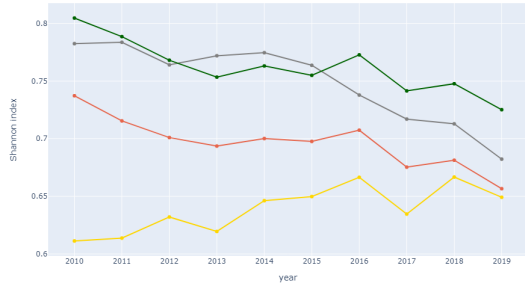


Figure: Comparing median Shannon on citing Regions for Business

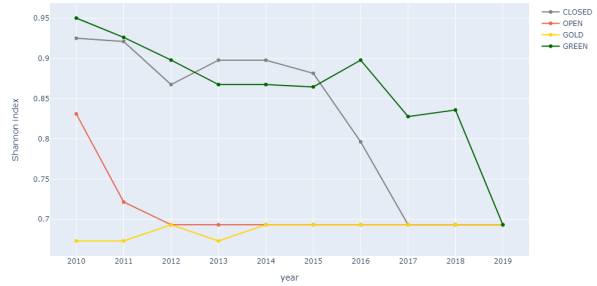


Figure: Comparing mean Shannon on citing Regions for Chemistry

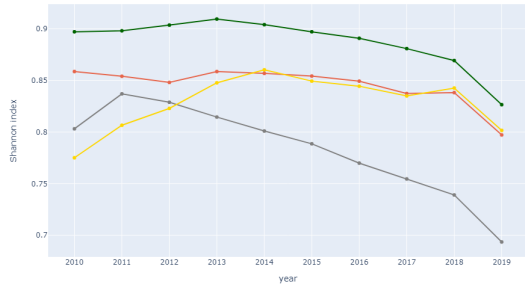


Figure: Comparing median Shannon on citing Regions for Chemistry

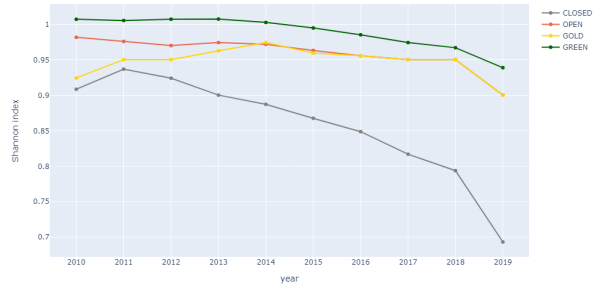


Figure: Comparing mean Shannon on citing Regions for Computer science

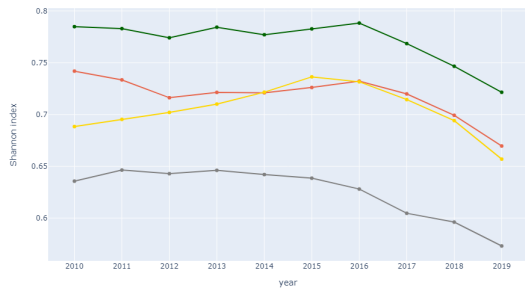


Figure: Comparing median Shannon on citing Regions for Computer science

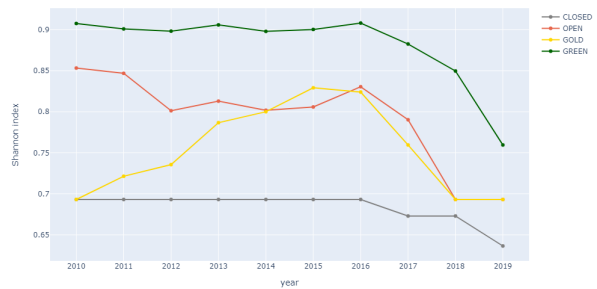


Figure: Comparing mean Shannon on citing Regions for Economics

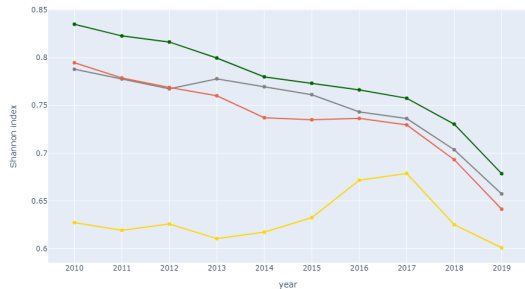


Figure: Comparing median Shannon on citing Regions for Economics

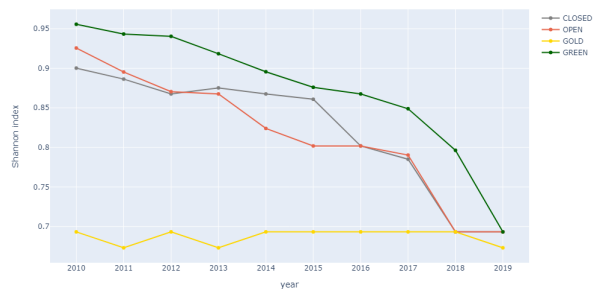


Figure: Comparing mean Shannon on citing Regions for Engineering

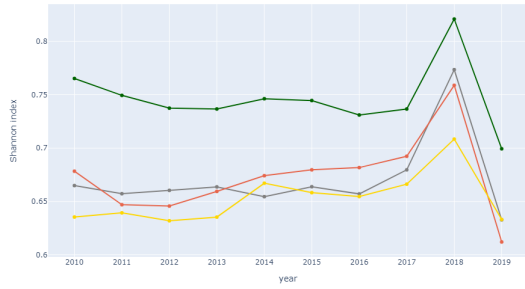


Figure: Comparing median Shannon on citing Regions for Engineering

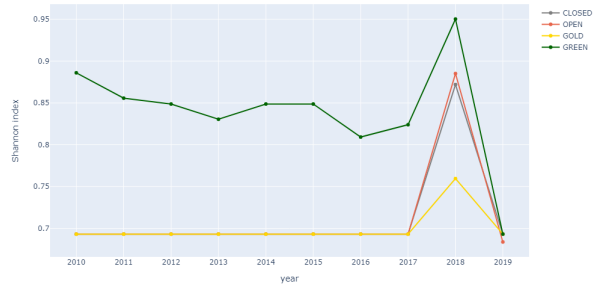


Figure: Comparing mean Shannon on citing Regions for Environmental science

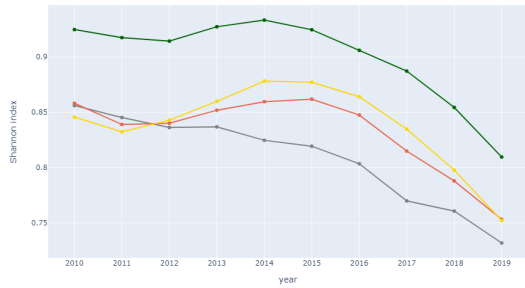


Figure: Comparing median Shannon on citing Regions for Environmental science

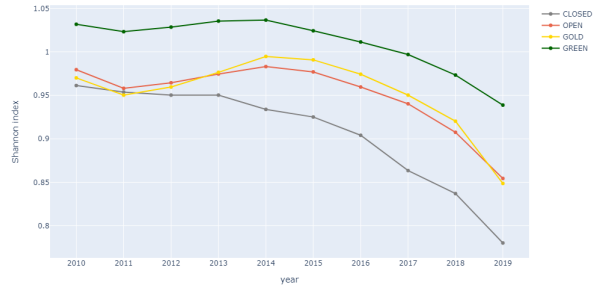


Figure: Comparing mean Shannon on citing Regions for Geography

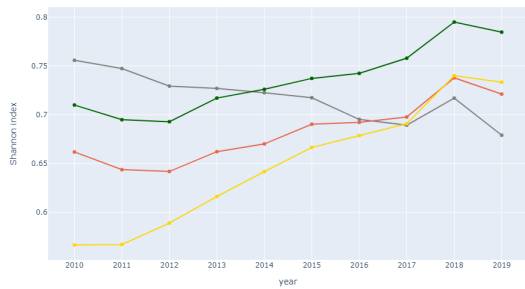


Figure: Comparing median Shannon on citing Regions for Geography

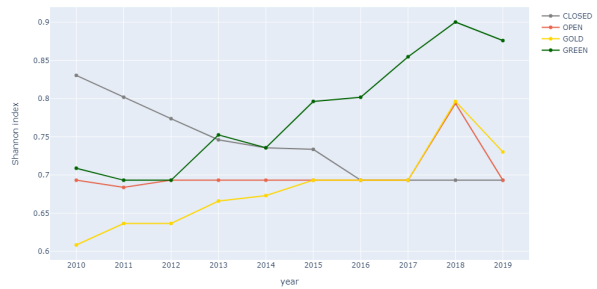


Figure: Comparing mean Shannon on citing Regions for Geology

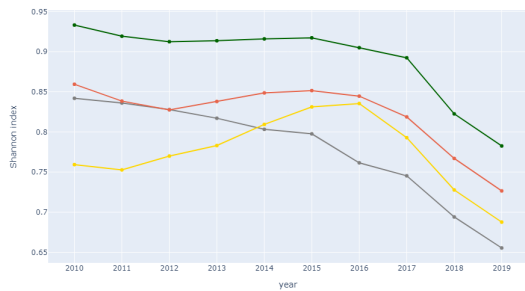


Figure: Comparing median Shannon on citing Regions for Geology

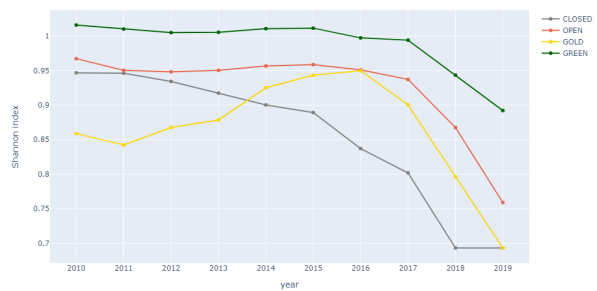


Figure: Comparing mean Shannon on citing Regions for History

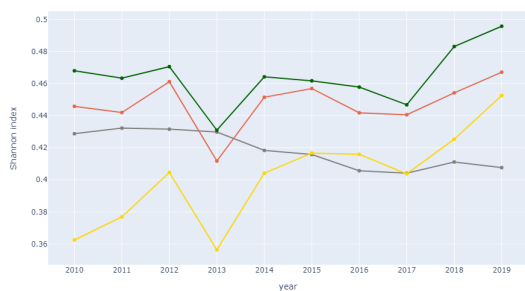


Figure: Comparing median Shannon on citing Regions for History

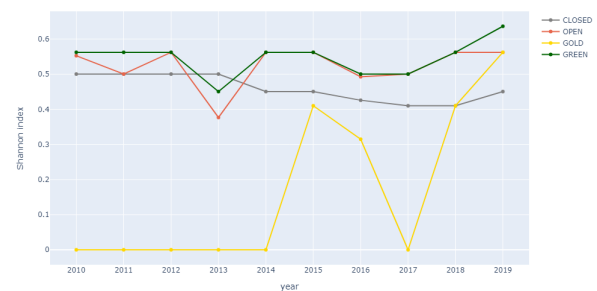


Figure: Comparing mean Shannon on citing Regions for Materials science

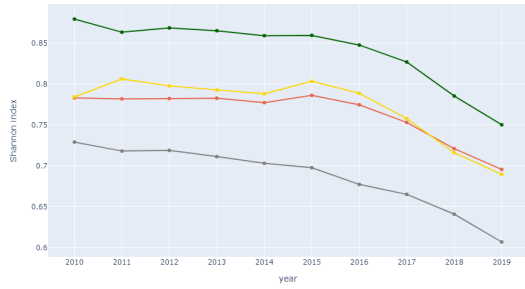


Figure: Comparing median Shannon on citing Regions for Materials science

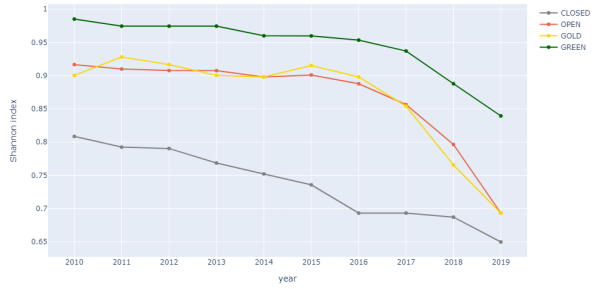


Figure: Comparing mean Shannon on citing Regions for Mathematics

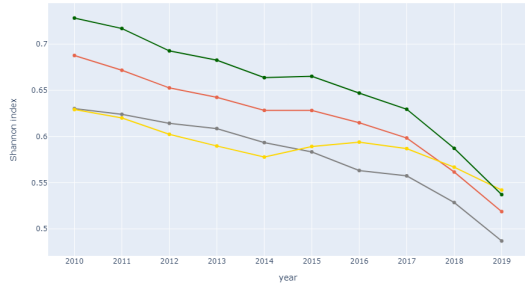


Figure: Comparing median Shannon on citing Regions for Mathematics

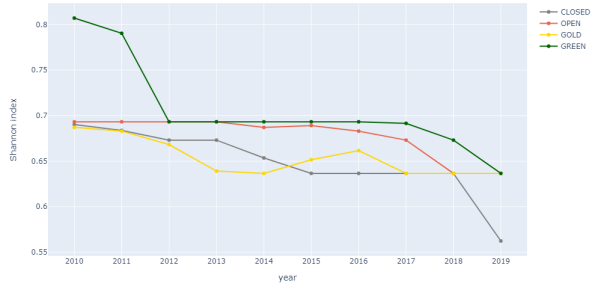


Figure: Comparing mean Shannon on citing Regions for Medicine

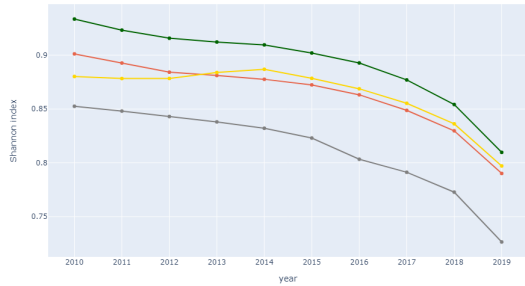


Figure: Comparing median Shannon on citing Regions for Medicine

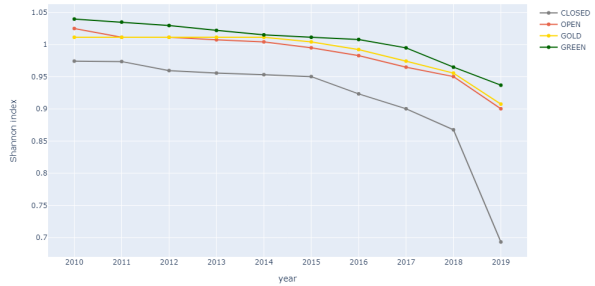


Figure: Comparing mean Shannon on citing Regions for Philosophy

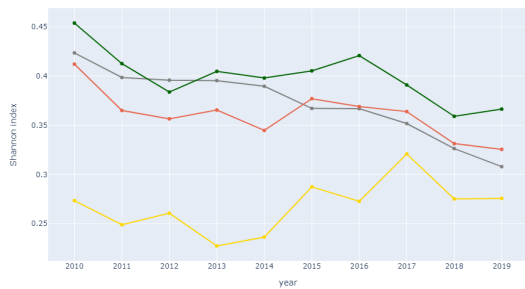


Figure: Comparing median Shannon on citing Regions for Philosophy

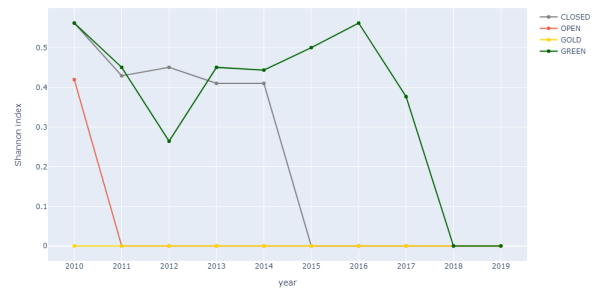


Figure: Comparing mean Shannon on citing Regions for Physics

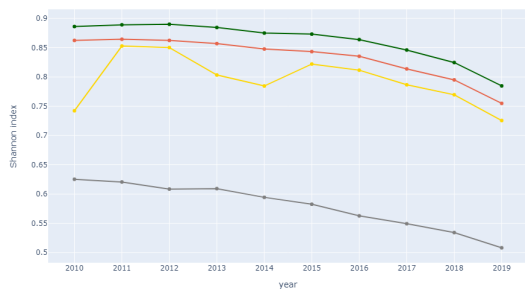


Figure: Comparing median Shannon on citing Regions for Physics

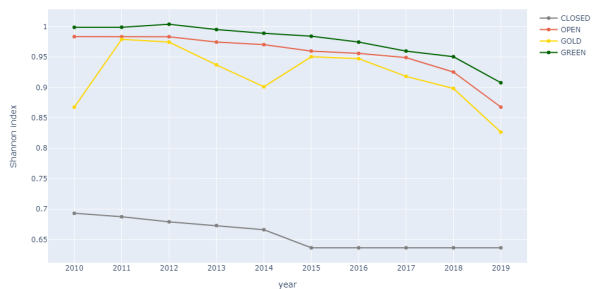


Figure: Comparing mean Shannon on citing Regions for Political science

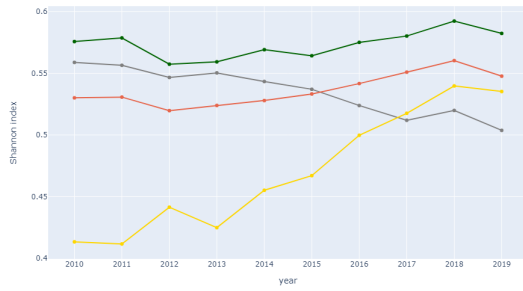


Figure: Comparing median Shannon on citing Regions for Political science

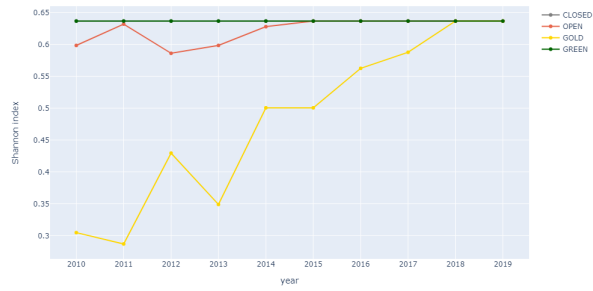


Figure: Comparing mean Shannon on citing Regions for Psychology

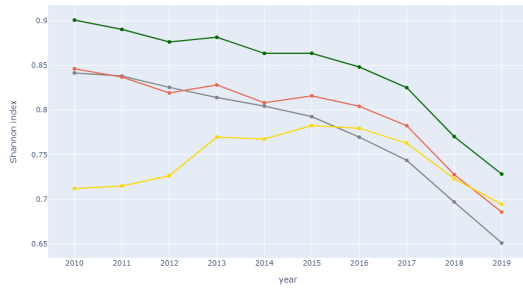


Figure: Comparing median Shannon on citing Regions for Psychology

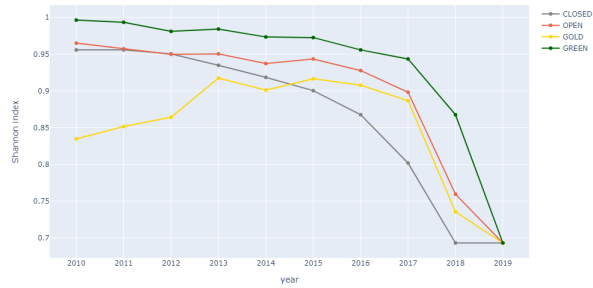


Figure: Comparing mean Shannon on citing Regions for Sociology

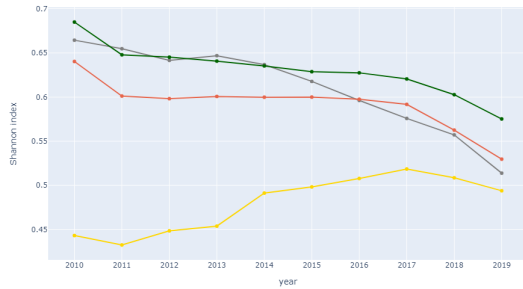
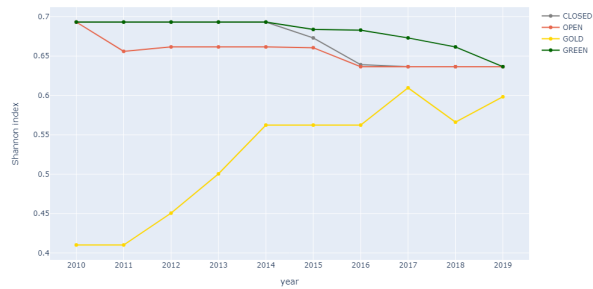


Figure: Comparing median Shannon on citing Regions for Sociology



For Gini-Simpson scores on citing fields:

Figure: Comparing mean GiniSim on citing Fields for Art

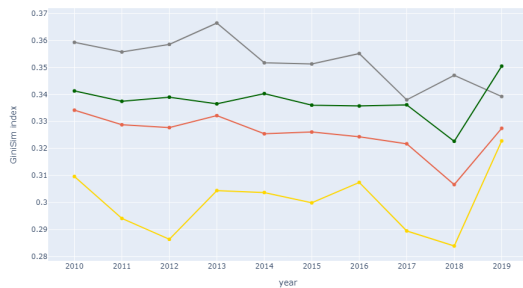


Figure: Comparing median GiniSim on citing Fields for Art

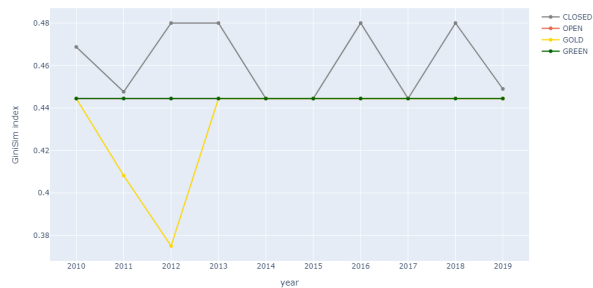


Figure: Comparing mean GiniSim on citing Fields for Biology

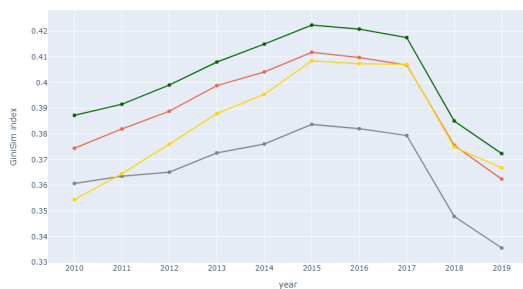


Figure: Comparing median GiniSim on citing Fields for Biology

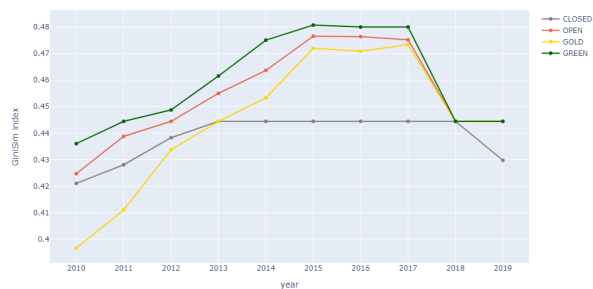


Figure: Comparing mean GiniSim on citing Fields for Business

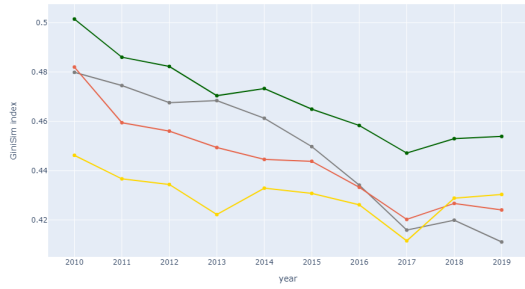


Figure: Comparing median GiniSim on citing Fields for Business

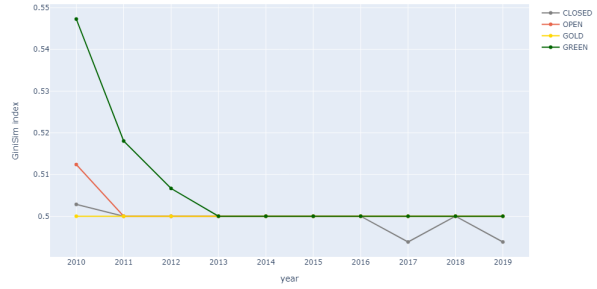


Figure: Comparing mean GiniSim on citing Fields for Chemistry

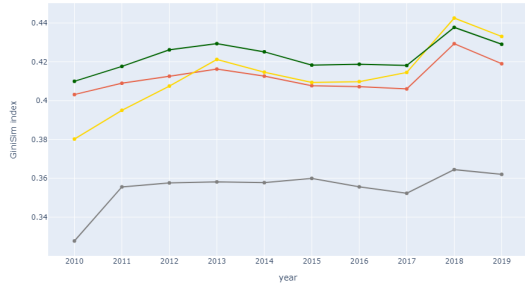


Figure: Comparing median GiniSim on citing Fields for Chemistry

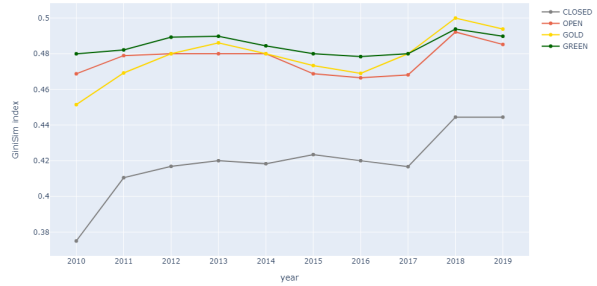


Figure: Comparing mean GiniSim on citing Fields for Computer science

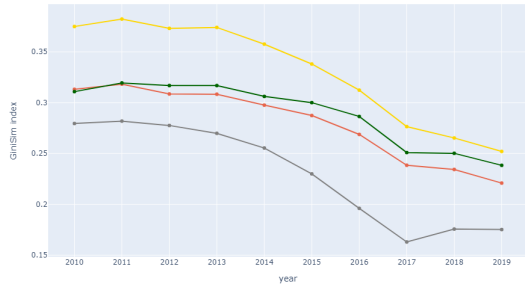


Figure: Comparing median GiniSim on citing Fields for Computer science

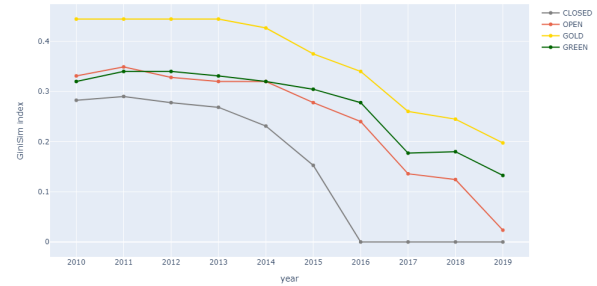


Figure: Comparing mean GiniSim on citing Fields for Economics

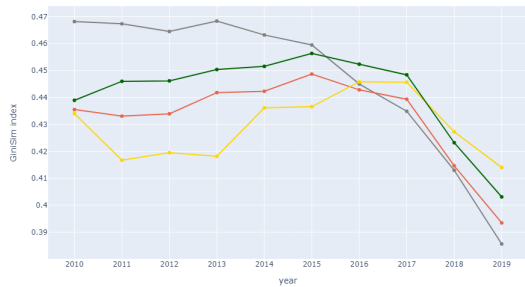


Figure: Comparing median GiniSim on citing Fields for Economics

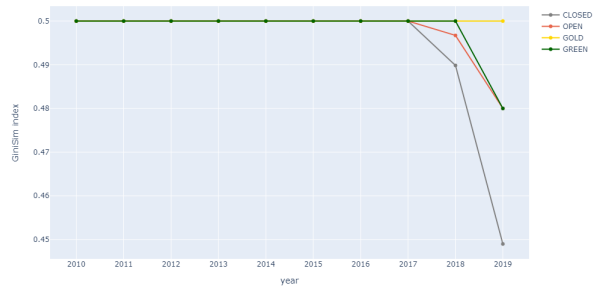


Figure: Comparing mean GiniSim on citing Fields for Engineering

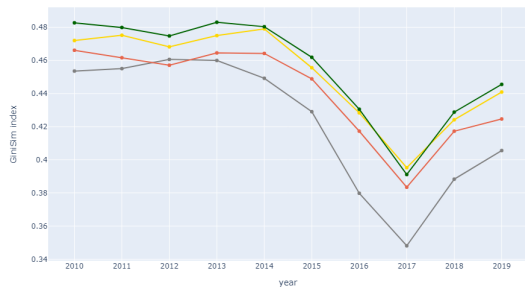


Figure: Comparing median GiniSim on citing Fields for Engineering

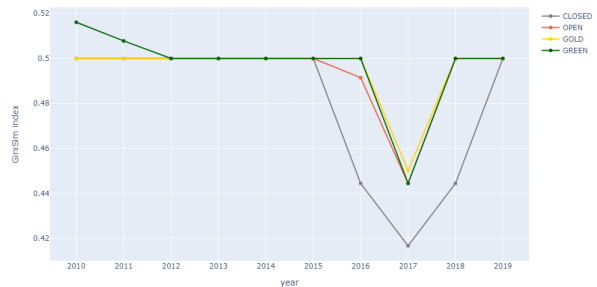


Figure: Comparing mean GiniSim on citing Fields for Environmental science

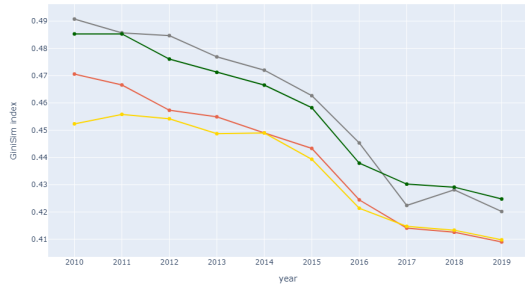


Figure: Comparing median GiniSim on citing Fields for Environmental science

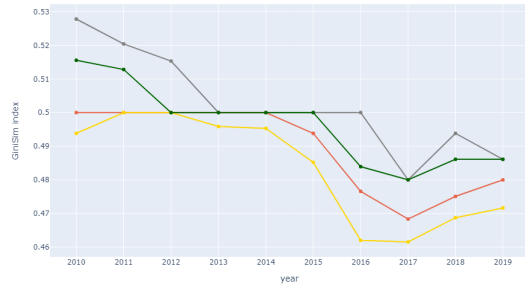


Figure: Comparing mean GiniSim on citing Fields for Geography

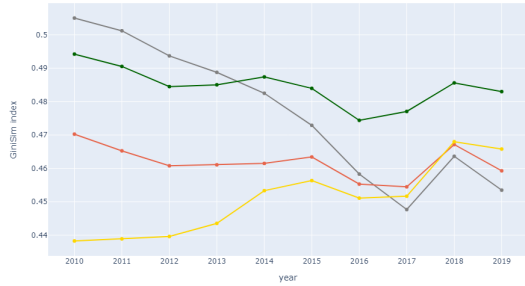


Figure: Comparing median GiniSim on citing Fields for Geography

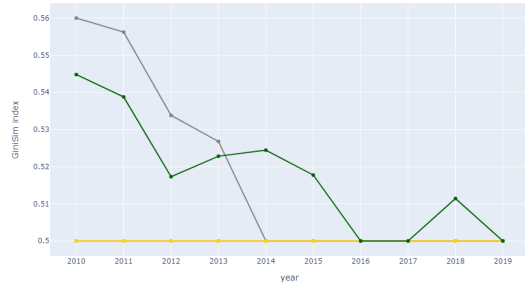


Figure: Comparing mean GiniSim on citing Fields for Geology

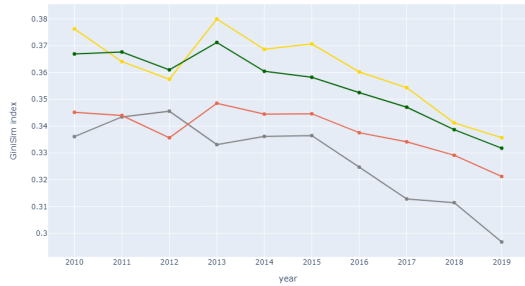


Figure: Comparing median GiniSim on citing Fields for Geology

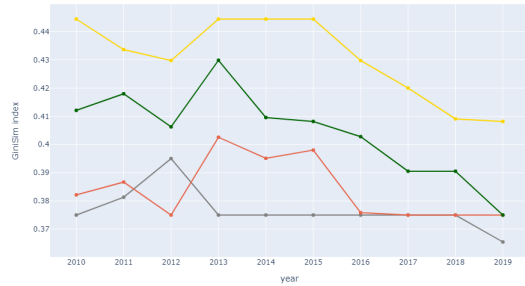


Figure: Comparing mean GiniSim on citing Fields for History

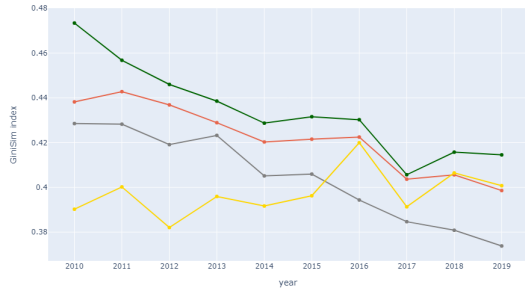


Figure: Comparing median GiniSim on citing Fields for History

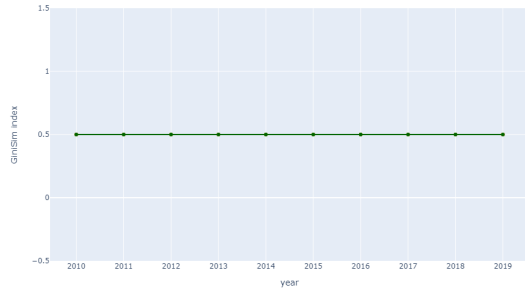


Figure: Comparing mean GiniSim on citing Fields for Materials science

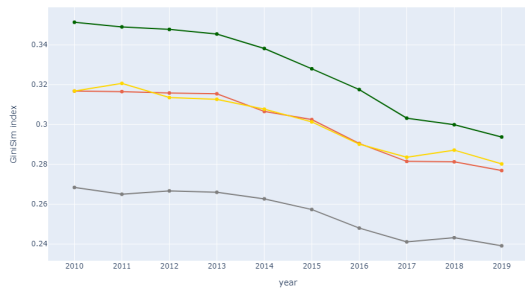


Figure: Comparing median GiniSim on citing Fields for Materials science

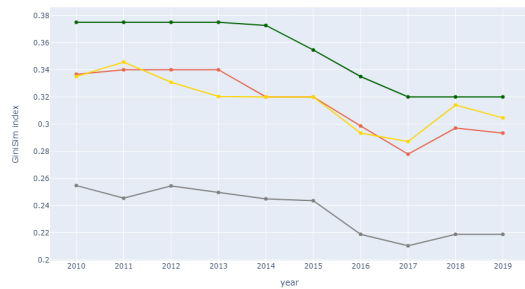


Figure: Comparing mean GiniSim on citing Fields for Mathematics

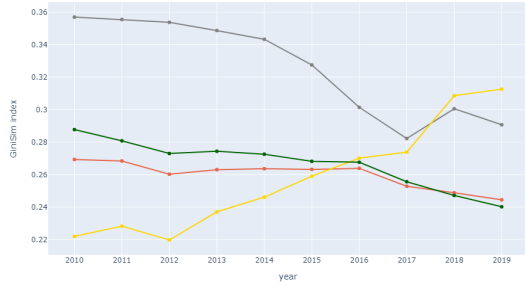


Figure: Comparing median GiniSim on citing Fields for Mathematics

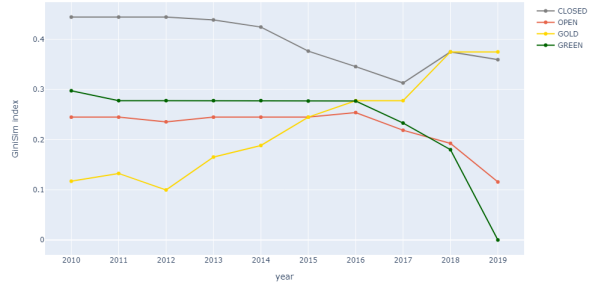


Figure: Comparing mean GiniSim on citing Fields for Medicine

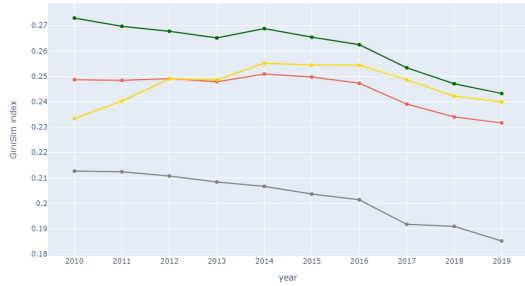


Figure: Comparing median GiniSim on citing Fields for Medicine

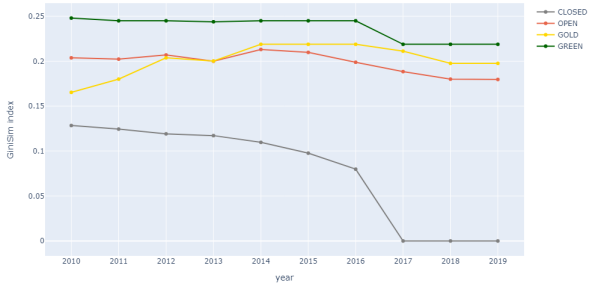


Figure: Comparing mean GiniSim on citing Fields for Philosophy

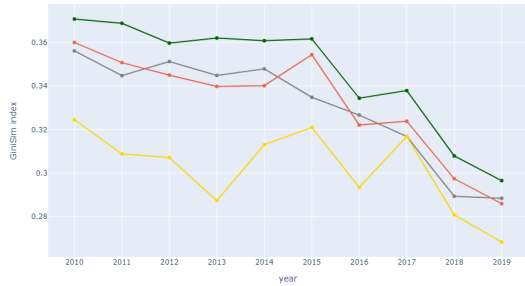


Figure: Comparing median GiniSim on citing Fields for Philosophy

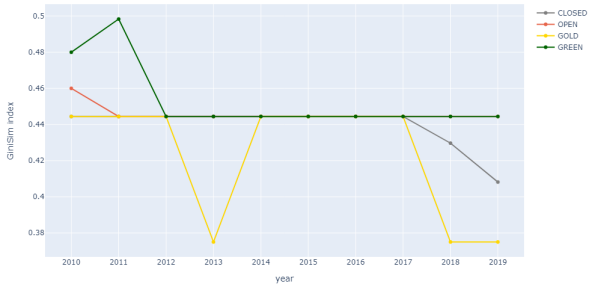


Figure: Comparing mean GiniSim on citing Fields for Physics

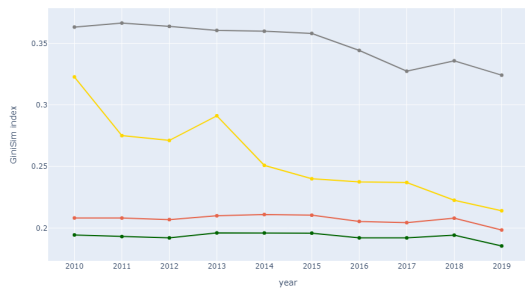


Figure: Comparing median GiniSim on citing Fields for Physics

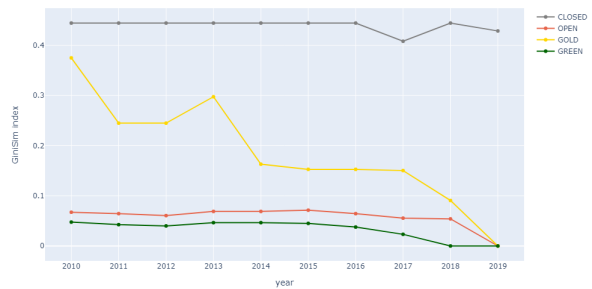


Figure: Comparing mean GiniSim on citing Fields for Political science

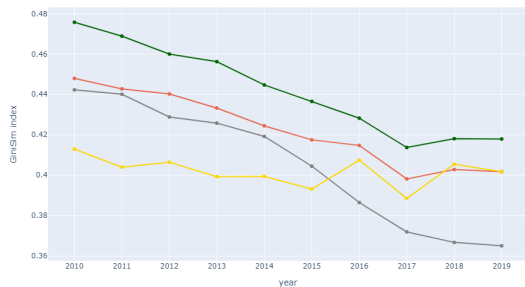


Figure: Comparing median GiniSim on citing Fields for Political science

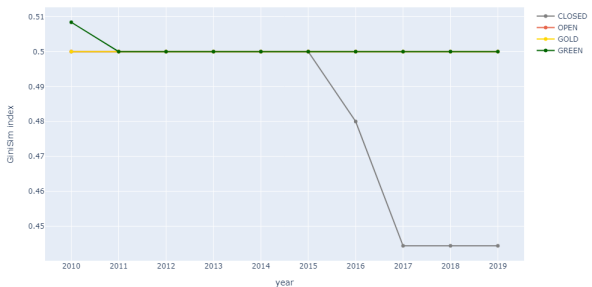


Figure: Comparing mean GiniSim on citing Fields for Psychology

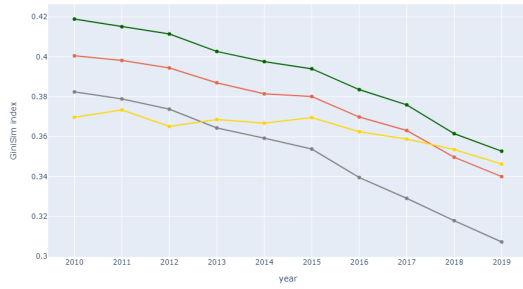


Figure: Comparing median GiniSim on citing Fields for Psychology

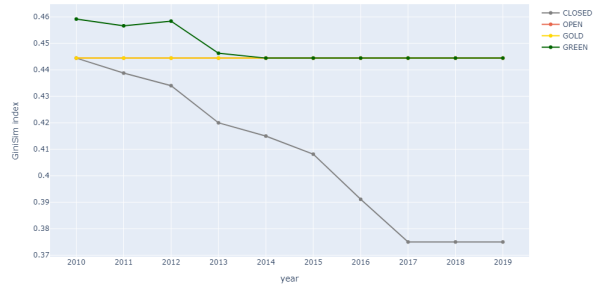


Figure: Comparing mean GiniSim on citing Fields for Sociology

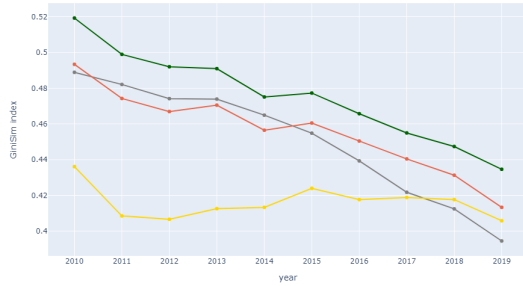
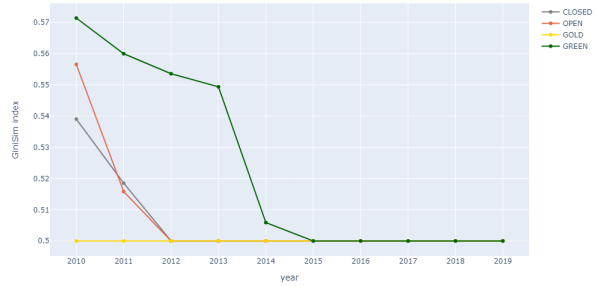


Figure: Comparing median GiniSim on citing Fields for Sociology



For Shannon scores on citing fields:

Figure: Comparing mean Shannon on citing Fields for Art

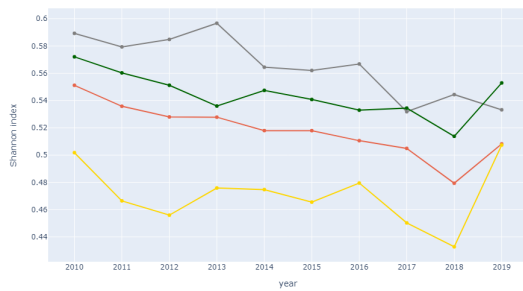


Figure: Comparing median Shannon on citing Fields for Art

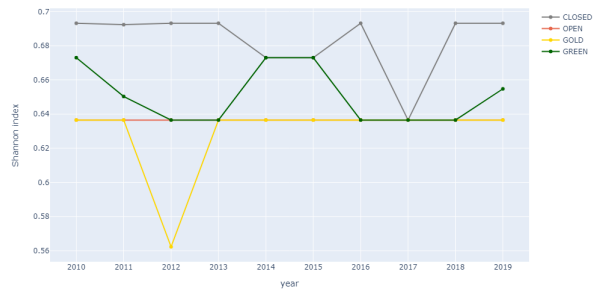


Figure: Comparing mean Shannon on citing Fields for Biology

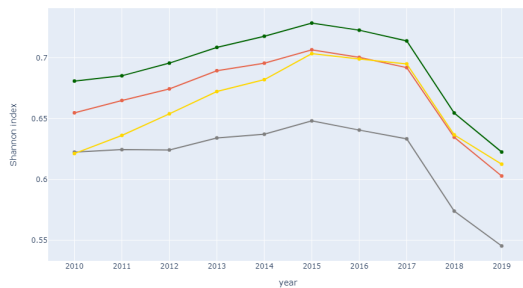


Figure: Comparing median Shannon on citing Fields for Biology

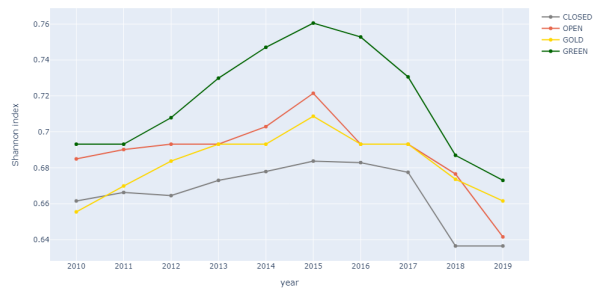


Figure: Comparing mean Shannon on citing Fields for Business

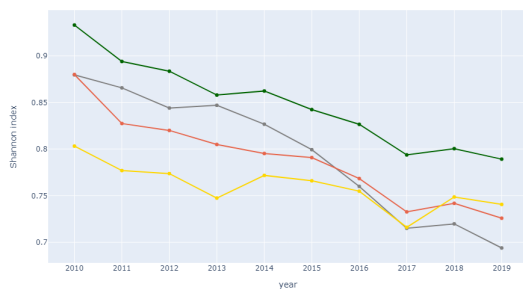


Figure: Comparing median Shannon on citing Fields for Business

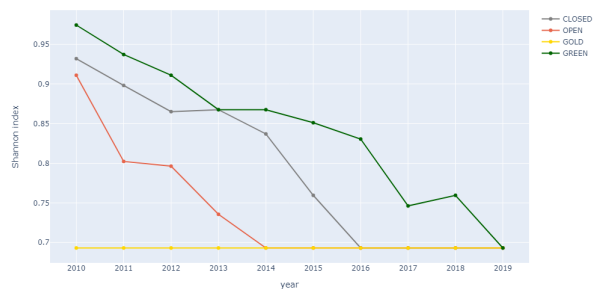


Figure: Comparing mean Shannon on citing Fields for Chemistry

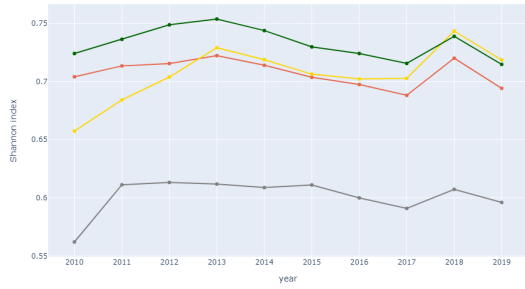


Figure: Comparing median Shannon on citing Fields for Chemistry

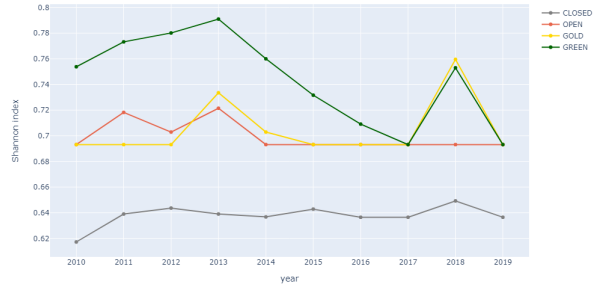


Figure: Comparing mean Shannon on citing Fields for Computer science

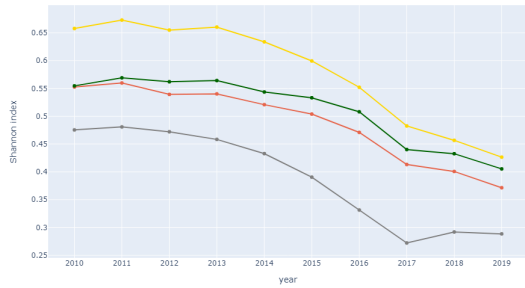


Figure: Comparing median Shannon on citing Fields for Computer science

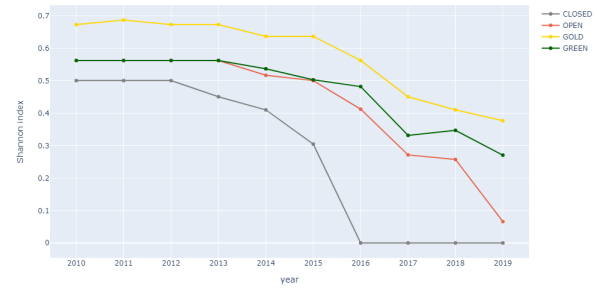


Figure: Comparing mean Shannon on citing Fields for Economics

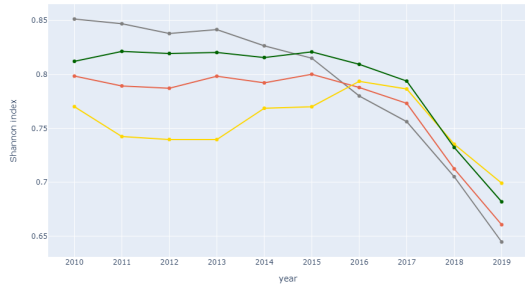


Figure: Comparing median Shannon on citing Fields for Economics

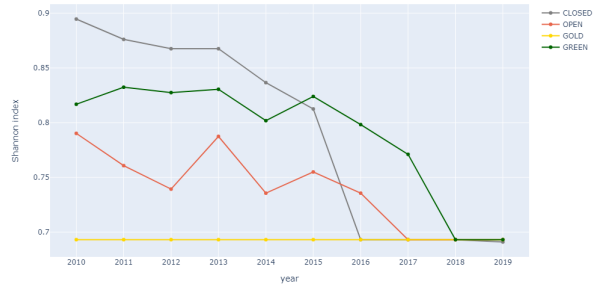


Figure: Comparing mean Shannon on citing Fields for Engineering

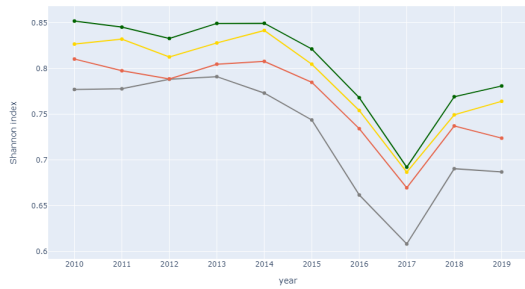


Figure: Comparing median Shannon on citing Fields for Engineering

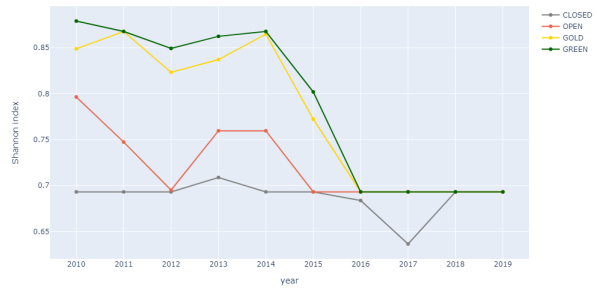


Figure: Comparing mean Shannon on citing Fields for Environmental science

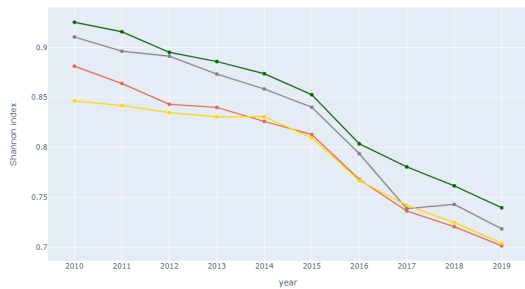


Figure: Comparing median Shannon on citing Fields for Environmental science

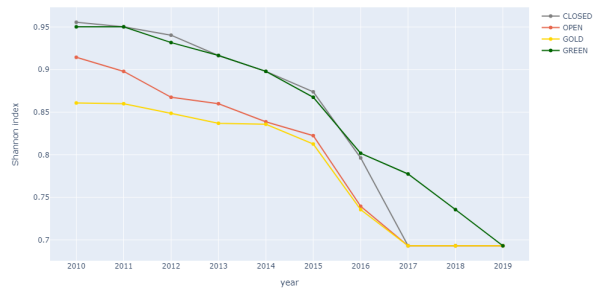


Figure: Comparing mean Shannon on citing Fields for Geography

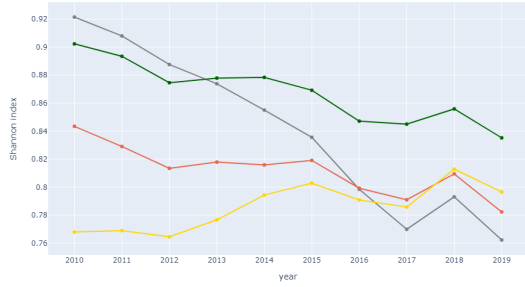


Figure: Comparing median Shannon on citing Fields for Geography

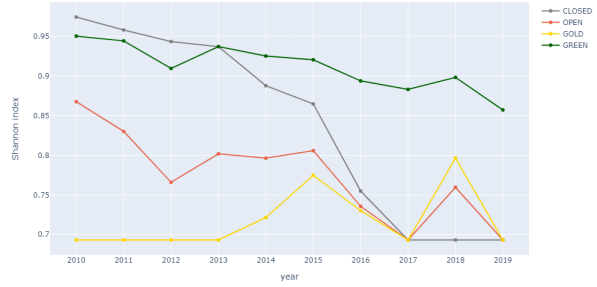


Figure: Comparing mean Shannon on citing Fields for Geology

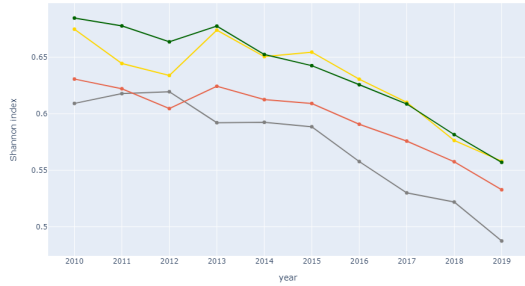


Figure: Comparing median Shannon on citing Fields for Geology

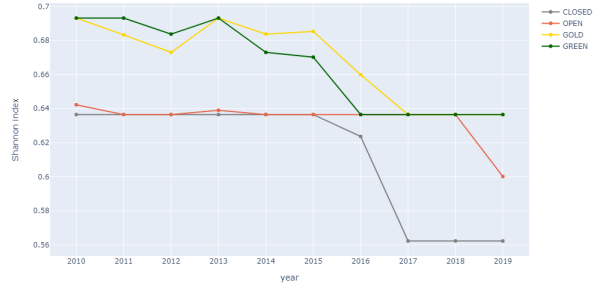


Figure: Comparing mean Shannon on citing Fields for History

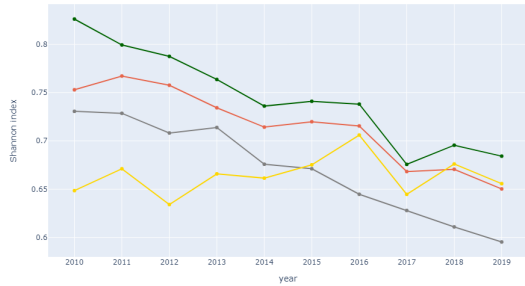


Figure: Comparing median Shannon on citing Fields for History

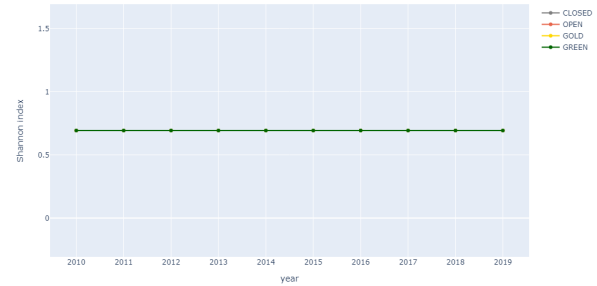


Figure: Comparing mean Shannon on citing Fields for Materials science

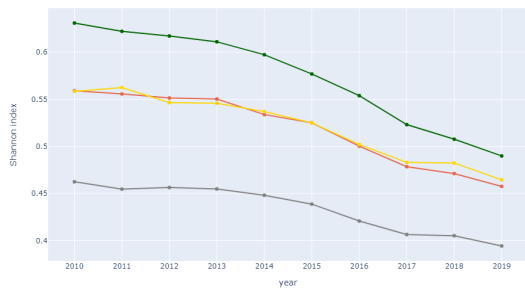


Figure: Comparing median Shannon on citing Fields for Materials science

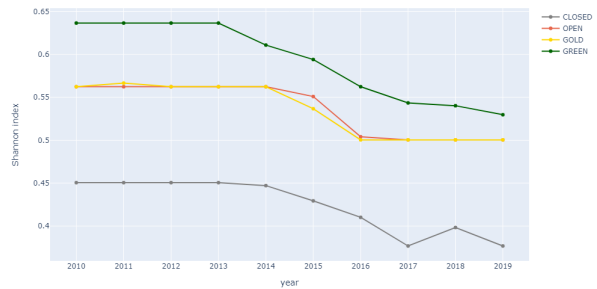


Figure: Comparing mean Shannon on citing Fields for Mathematics

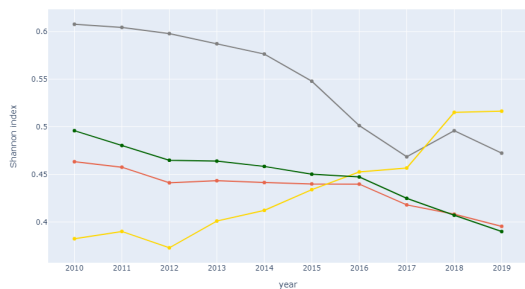


Figure: Comparing median Shannon on citing Fields for Mathematics

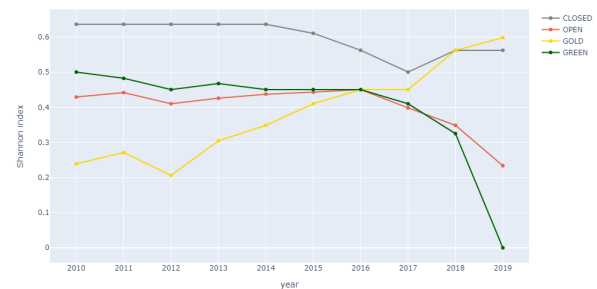


Figure: Comparing mean Shannon on citing Fields for Medicine

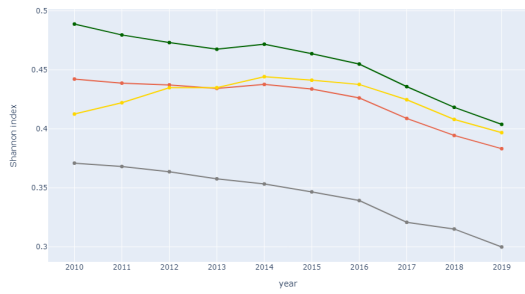


Figure: Comparing median Shannon on citing Fields for Medicine

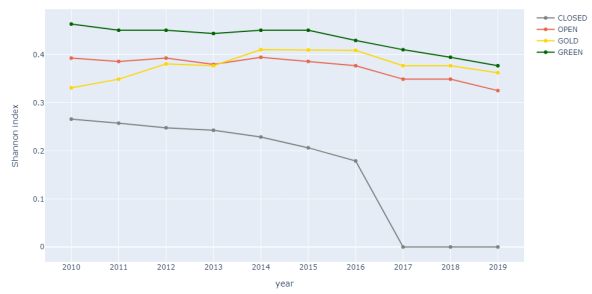


Figure: Comparing mean Shannon on citing Fields for Philosophy

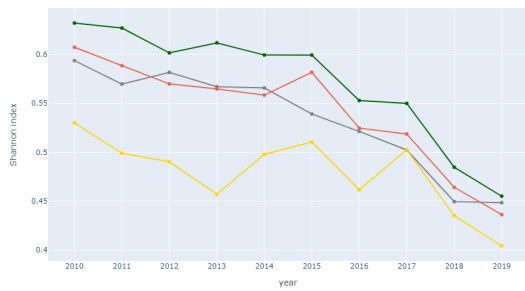


Figure: Comparing median Shannon on citing Fields for Philosophy

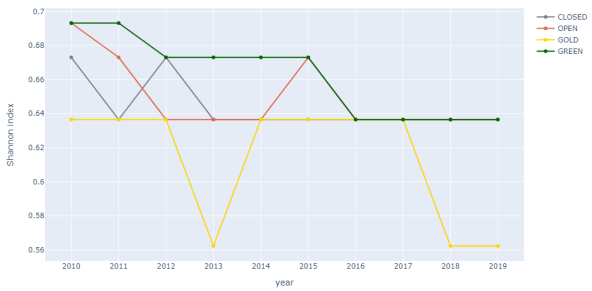


Figure: Comparing mean Shannon on citing Fields for Physics

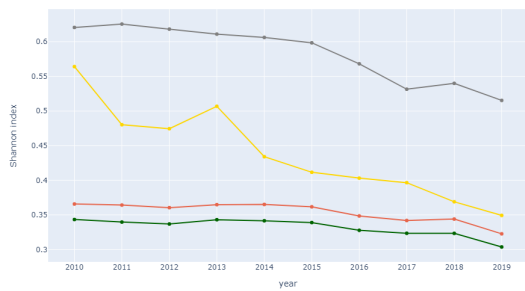


Figure: Comparing median Shannon on citing Fields for Physics

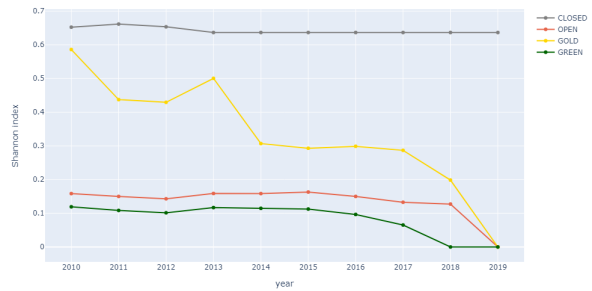


Figure: Comparing mean Shannon on citing Fields for Political science

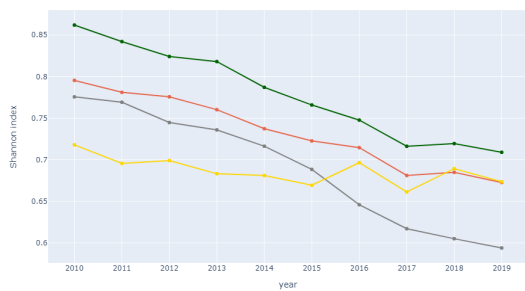


Figure: Comparing median Shannon on citing Fields for Political science

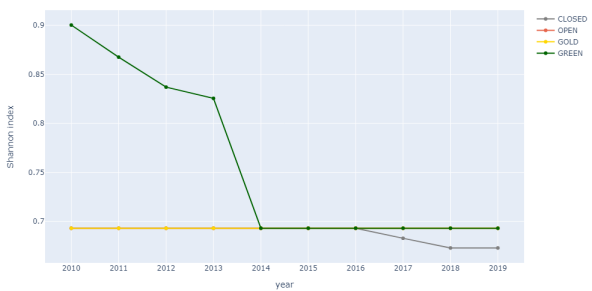


Figure: Comparing mean Shannon on citing Fields for Psychology

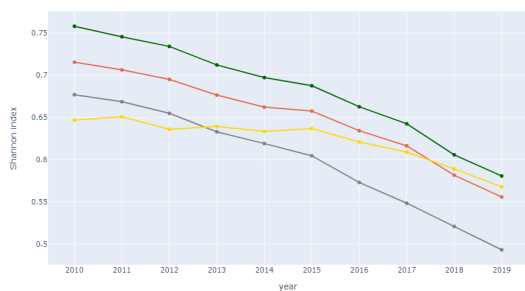


Figure: Comparing median Shannon on citing Fields for Psychology

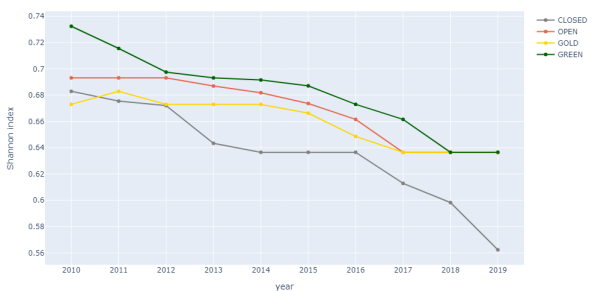


Figure: Comparing mean Shannon on citing Fields for Sociology

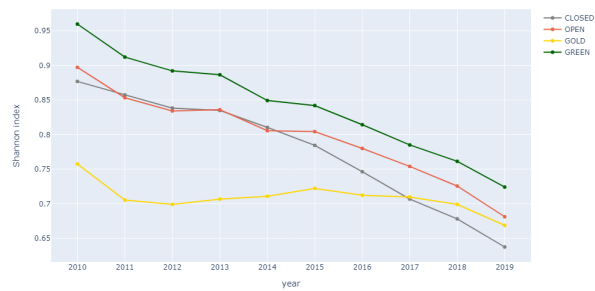
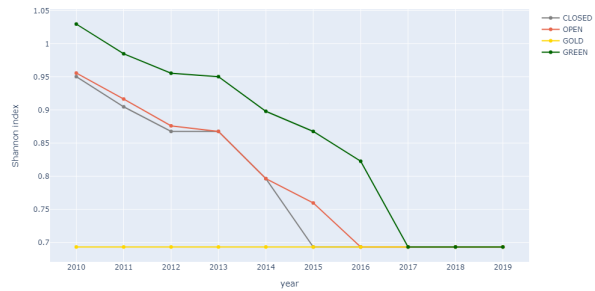


Figure: Comparing median Shannon on citing Fields for Sociology



Section H: Citation groups vs number of unique citing groups

In this section, we split the papers into groups depending on citation numbers and by OA/non-OA status. The sample of papers includes 2,000 OA papers and 2,000 non-OA papers from each citation group (i.e., 56,000 papers in total), as per publication year. The number of unique citing groups is counted for each paper and compared across citation groups. This is to check whether the OA advantage observed in the previous sections remain consistent across the levels of citation. As expected, the number of unique citing groups may increase with the number of citations. However, the OA advantage also seems to remain in place irrespective of the level of citation. Again, we note that the level of effect of the OA advantage can be less obvious when the total numbers of potential counts are low. The performance of OA papers appears to be at least as good, or better, than the non-OA papers.

The first set of these is based on Institutions as citing groups:

Figure: Box plots of number of unique citing Institutions by citation groups for 2010
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

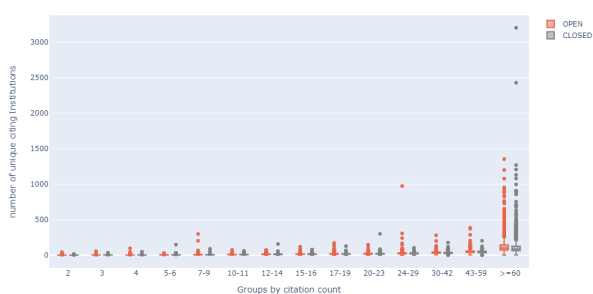


Figure: Box plots of number of unique citing Institutions by citation groups for 2011
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

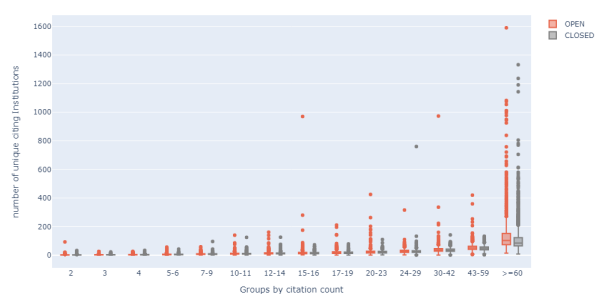


Figure: Box plots of number of unique citing Institutions by citation groups for 2012
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

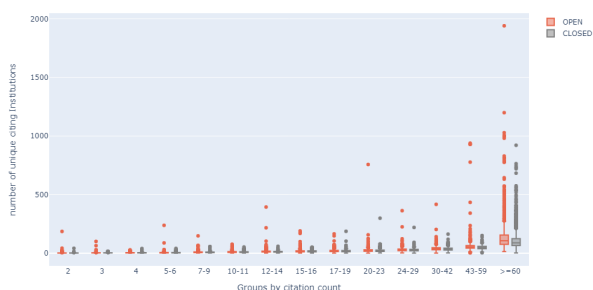


Figure: Box plots of number of unique citing Institutions by citation groups for 2013
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

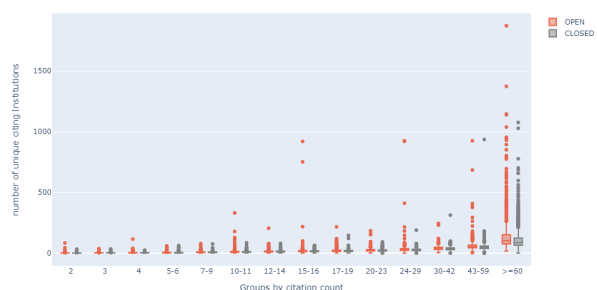


Figure: Box plots of number of unique citing Institutions by citation groups for 2014
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

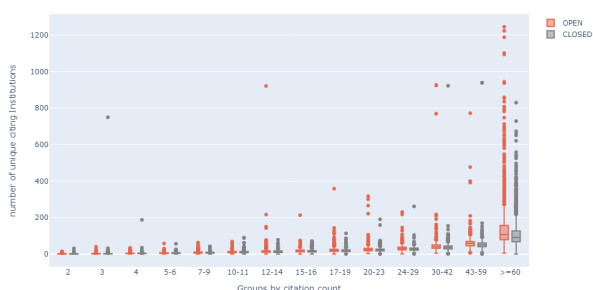


Figure: Box plots of number of unique citing Institutions by citation groups for 2015
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

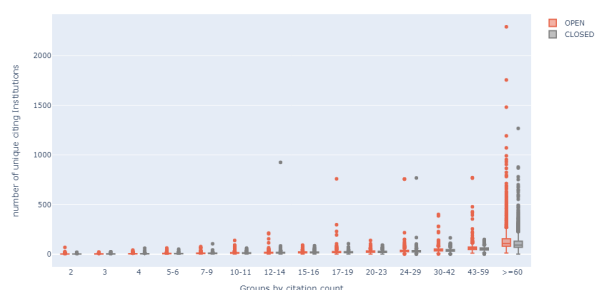


Figure: Box plots of number of unique citing Institutions by citation groups for 2016
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

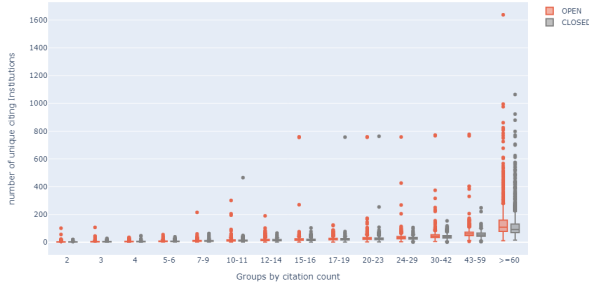


Figure: Box plots of number of unique citing Institutions by citation groups for 2017
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

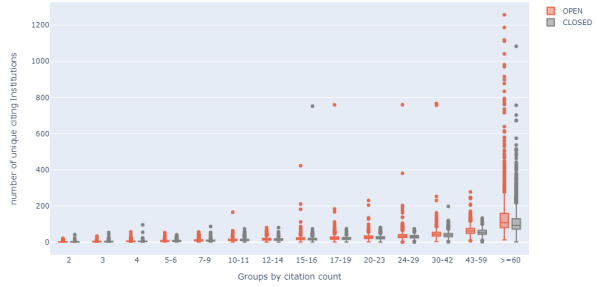


Figure: Box plots of number of unique citing Institutions by citation groups for 2018
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

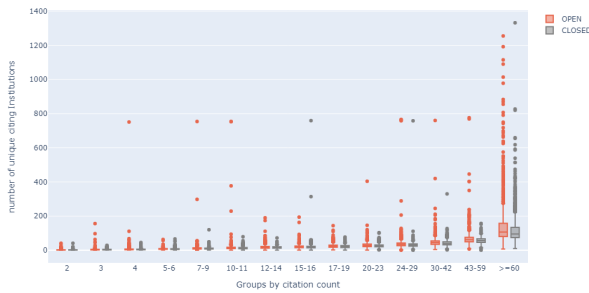
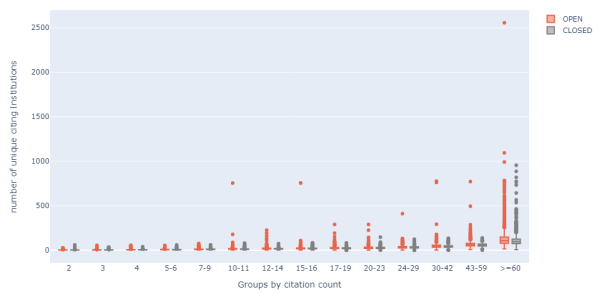


Figure: Box plots of number of unique citing Institutions by citation groups for 2019
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)



The next set is based on Countries as citing groups:

Figure: Box plots of number of unique citing Countries by citation groups for 2010
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

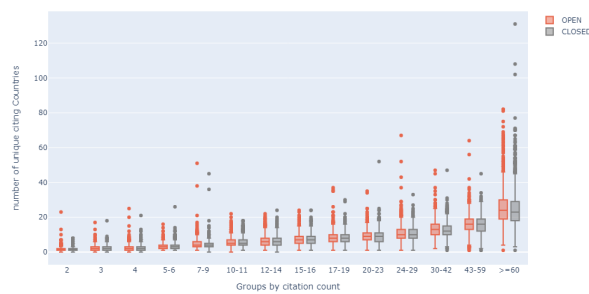


Figure: Box plots of number of unique citing Countries by citation groups for 2011
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

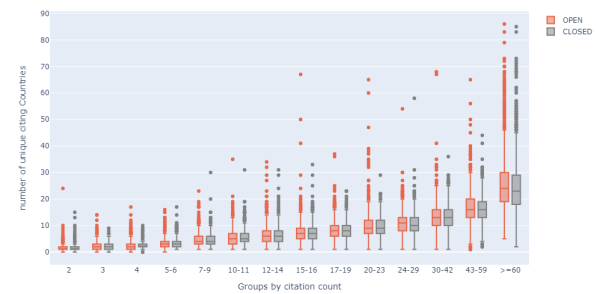


Figure: Box plots of number of unique citing Countries by citation groups for 2012
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

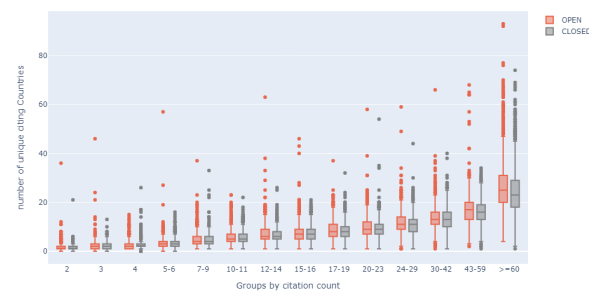


Figure: Box plots of number of unique citing Countries by citation groups for 2013
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

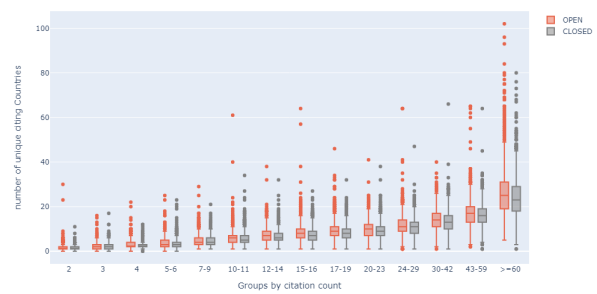


Figure: Box plots of number of unique citing Countries by citation groups for 2014
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

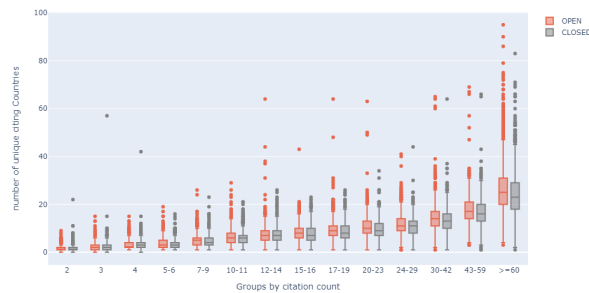


Figure: Box plots of number of unique citing Countries by citation groups for 2015
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

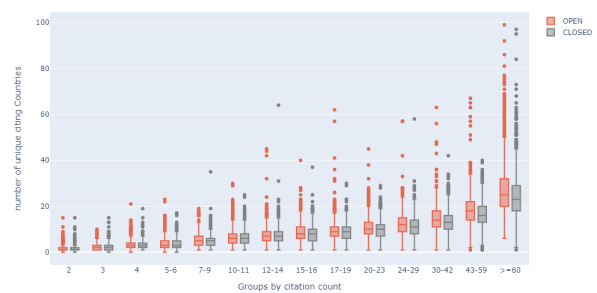


Figure: Box plots of number of unique citing Countries by citation groups for 2016
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

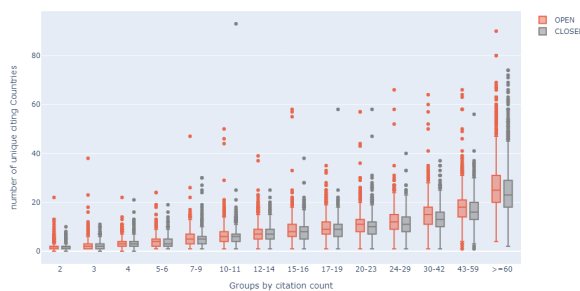


Figure: Box plots of number of unique citing Countries by citation groups for 2017
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

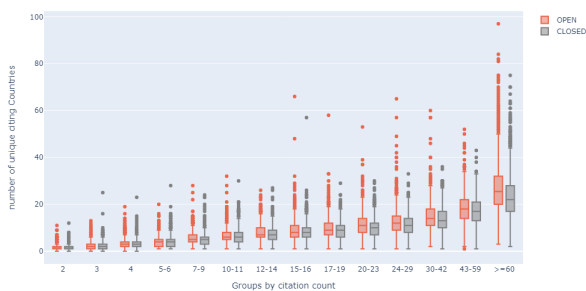


Figure: Box plots of number of unique citing Countries by citation groups for 2018
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

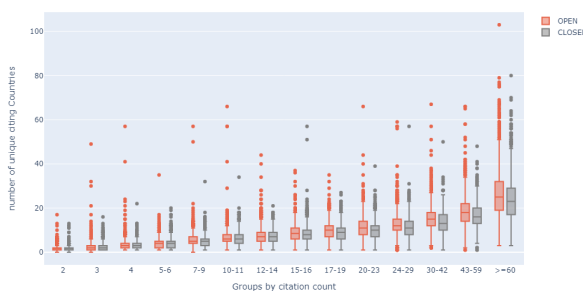
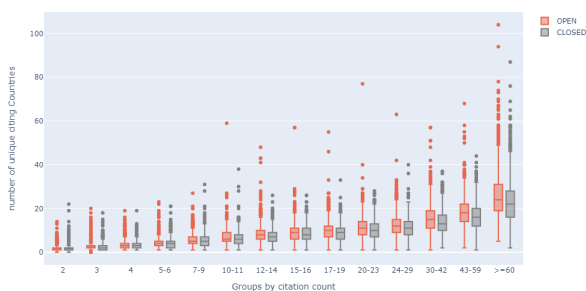


Figure: Box plots of number of unique citing Countries by citation groups for 2019
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)



The next set is based on Subregions as citing groups:

Figure: Box plots of number of unique citing Subregions by citation groups for 2010
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

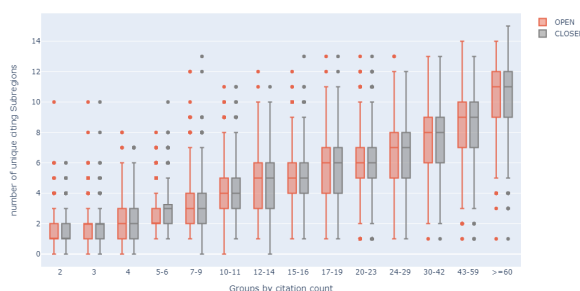


Figure: Box plots of number of unique citing Subregions by citation groups for 2011
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

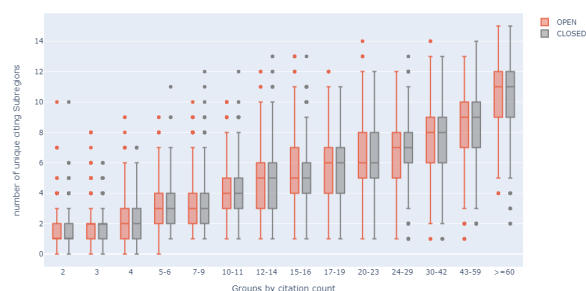


Figure: Box plots of number of unique citing Subregions by citation groups for 2012
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

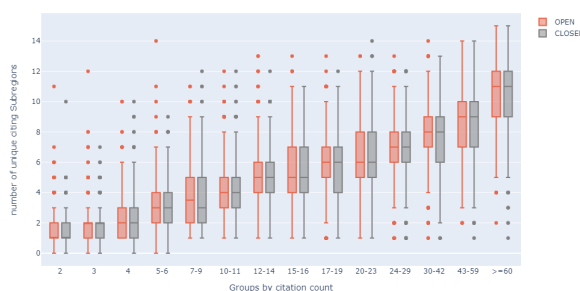


Figure: Box plots of number of unique citing Subregions by citation groups for 2013
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

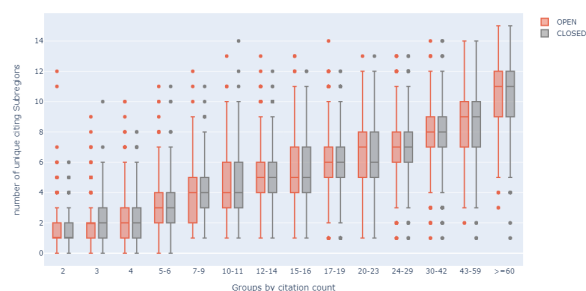


Figure: Box plots of number of unique citing Subregions by citation groups for 2014
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

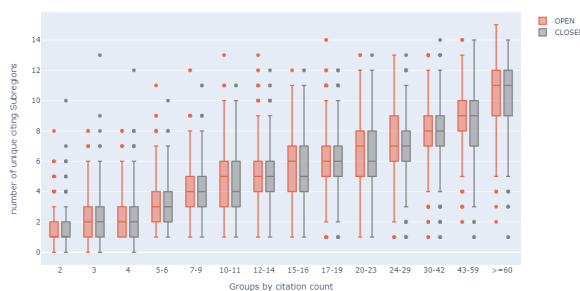


Figure: Box plots of number of unique citing Subregions by citation groups for 2015
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

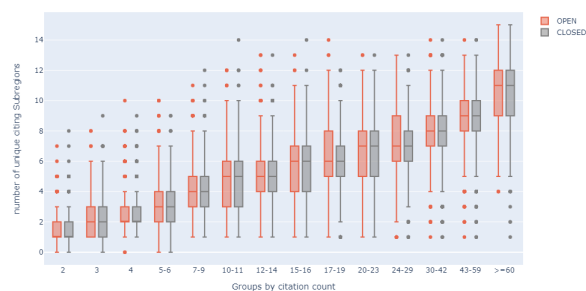


Figure: Box plots of number of unique citing Subregions by citation groups for 2016
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

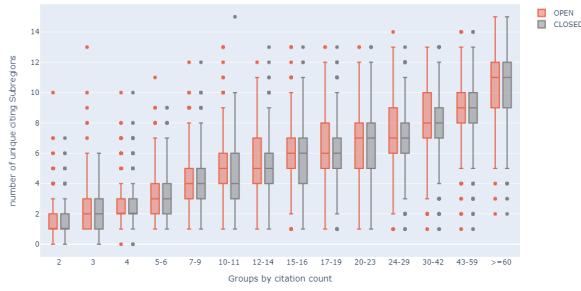


Figure: Box plots of number of unique citing Subregions by citation groups for 2017
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

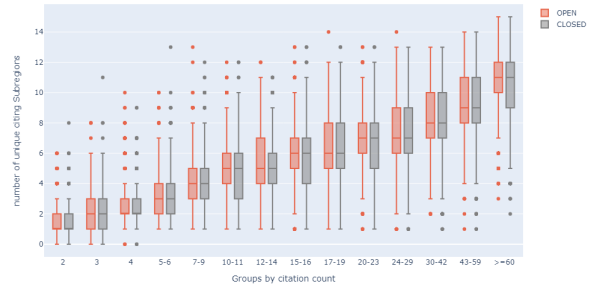


Figure: Box plots of number of unique citing Subregions by citation groups for 2018
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

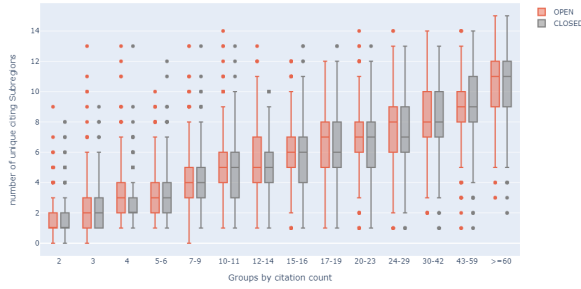
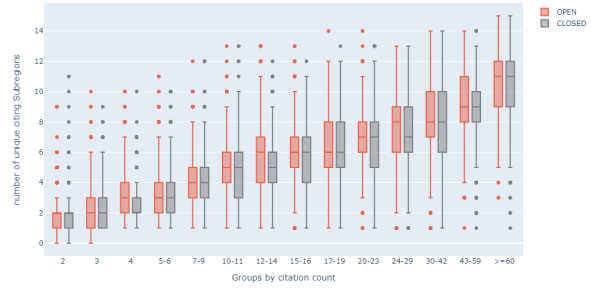


Figure: Box plots of number of unique citing Subregions by citation groups for 2019
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)



The next set is based on Regions as citing groups:

Figure: Box plots of number of unique citing Regions by citation groups for 2010
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

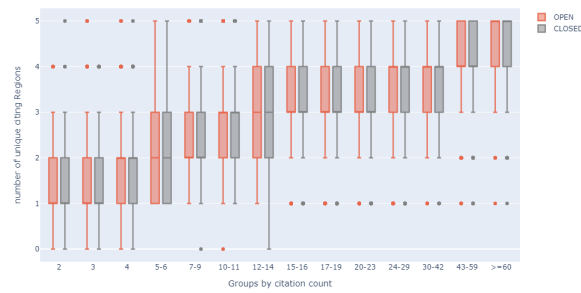


Figure: Box plots of number of unique citing Regions by citation groups for 2011
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

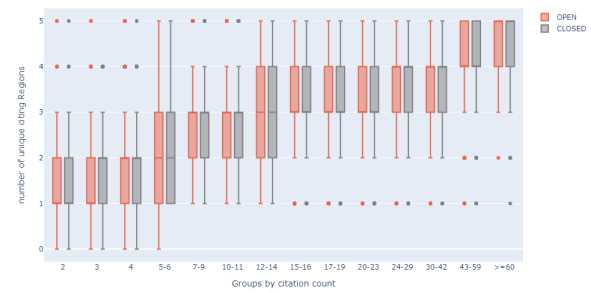


Figure: Box plots of number of unique citing Regions by citation groups for 2012
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

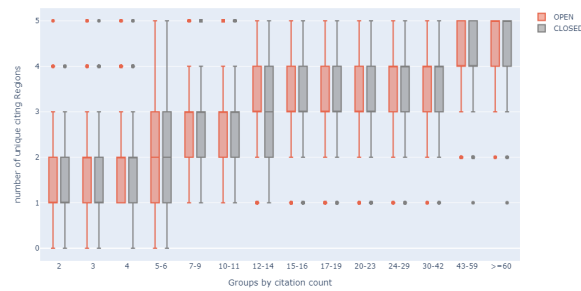


Figure: Box plots of number of unique citing Regions by citation groups for 2013
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

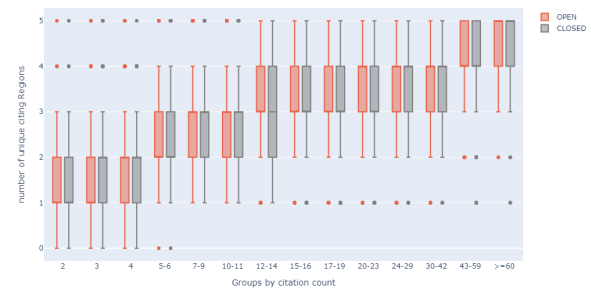


Figure: Box plots of number of unique citing Regions by citation groups for 2014
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

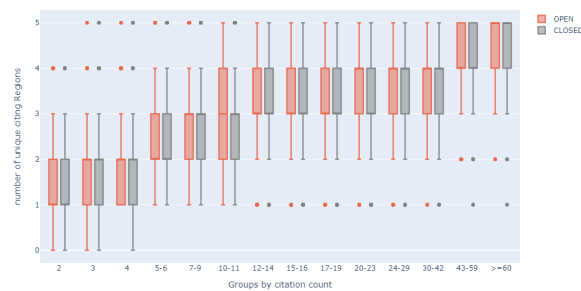


Figure: Box plots of number of unique citing Regions by citation groups for 2015
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

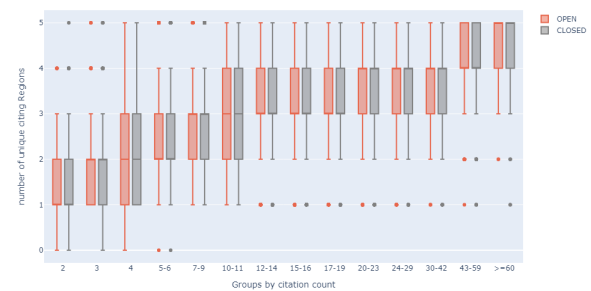




Figure: Box plots of number of unique citing Fields by citation groups for 2016
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

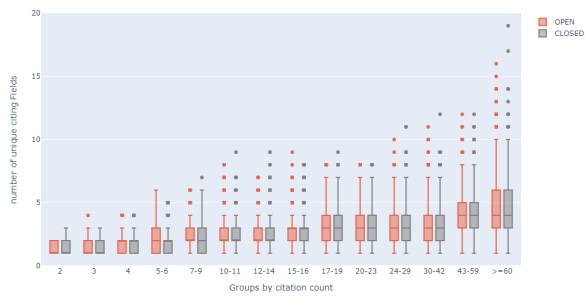


Figure: Box plots of number of unique citing Fields by citation groups for 2017
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

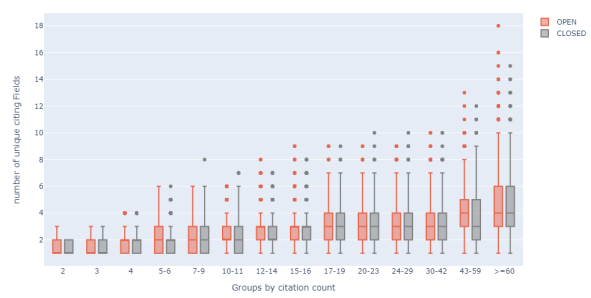


Figure: Box plots of number of unique citing Fields by citation groups for 2018
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

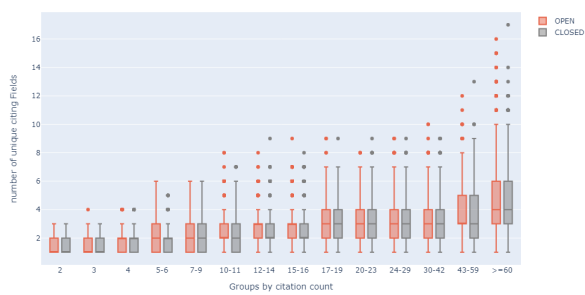
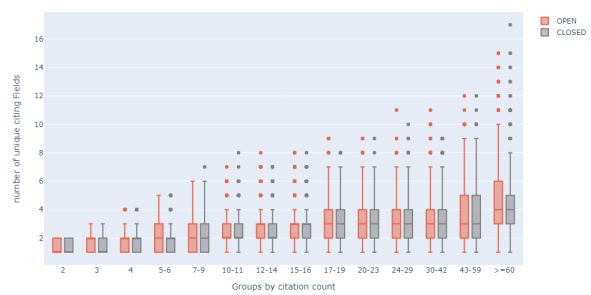


Figure: Box plots of number of unique citing Fields by citation groups for 2019
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)



Section I: Citation groups vs citation diversity scores

Similar to the previous section, papers are split into groups by citation counts - 2,000 OA papers and 2,000 non-OA papers are sampled from each citation group. A diversity score is calculated based on citing groups for each paper and boxplot constructed for OA and non-OA papers. Each figure below represent the findings for each type of citing group and each publication year. Not unexpectedly the increase in citation count may correlate with slightly higher diversity scores for both diversity measures (i.e., higher likelihood of different sighting entities). The general pattern that OA papers scoring higher in diversity remains consistent through citation groups, types of citing groups, publication years, and across diversity measures.

The first set of these is based on the Gini-Simpson index and institutions as citing groups:

Figure: Box plots of GiniSim index on citing Institutions by citation groups for 2010
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

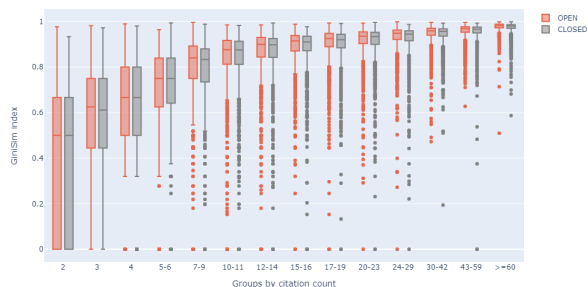


Figure: Box plots of GiniSim index on citing Institutions by citation groups for 2011
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

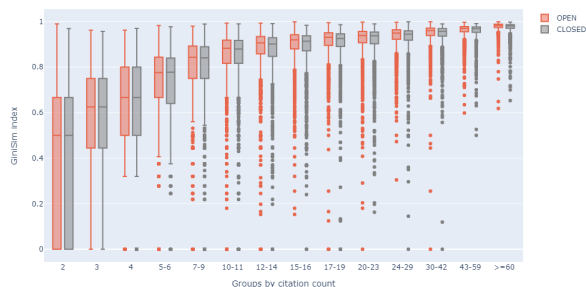


Figure: Box plots of GiniSim index on citing Institutions by citation groups for 2012
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

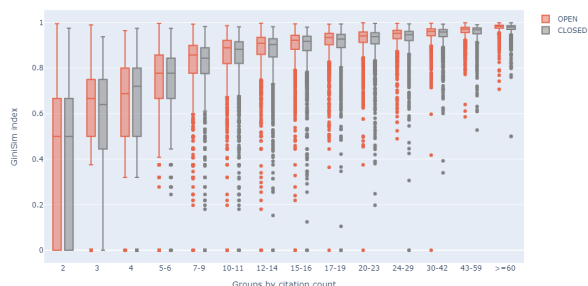


Figure: Box plots of GiniSim index on citing Institutions by citation groups for 2013
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

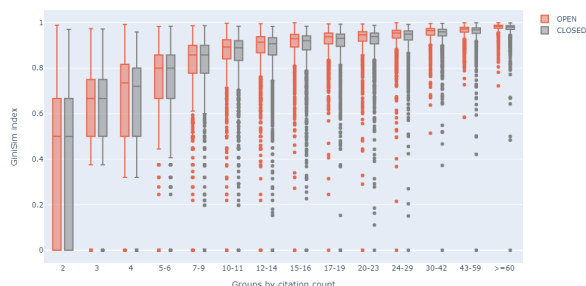


Figure: Box plots of GiniSim index on citing Institutions by citation groups for 2014
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

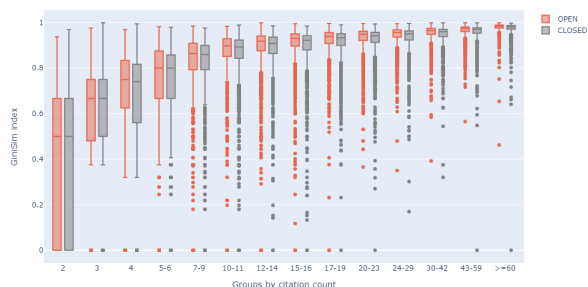


Figure: Box plots of GiniSim index on citing Institutions by citation groups for 2015
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

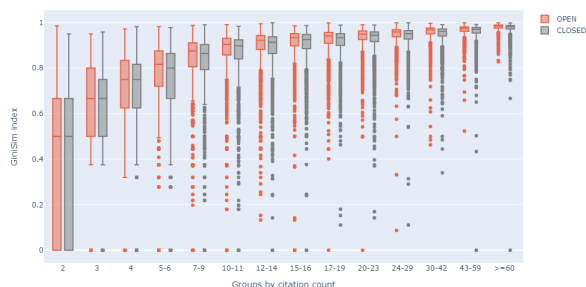


Figure: Box plots of GiniSim index on citing Institutions by citation groups for 2016
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

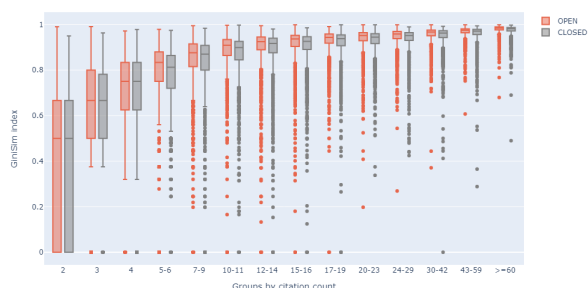


Figure: Box plots of GiniSim index on citing Institutions by citation groups for 2017
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

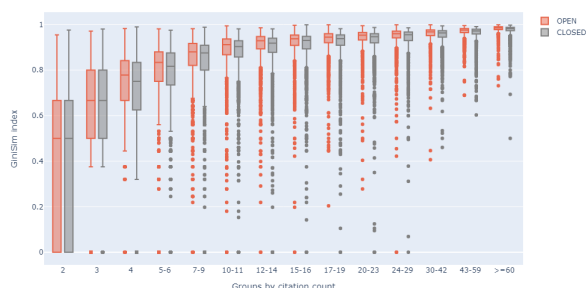


Figure: Box plots of GiniSim index on citing Institutions by citation groups for 2018
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

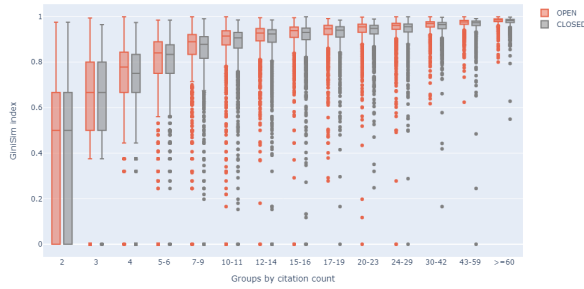
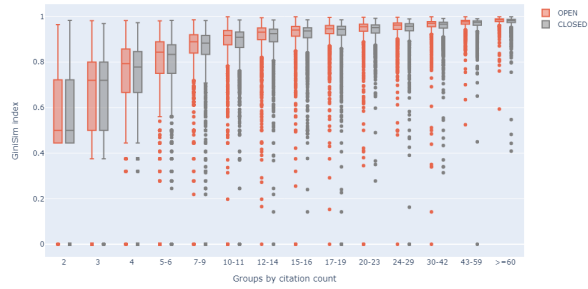


Figure: Box plots of GiniSim index on citing Institutions by citation groups for 2019
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)



The next set is based on the Gini-Simpson index and countries as citing groups:

Figure: Box plots of GiniSim index on citing Countries by citation groups for 2010
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

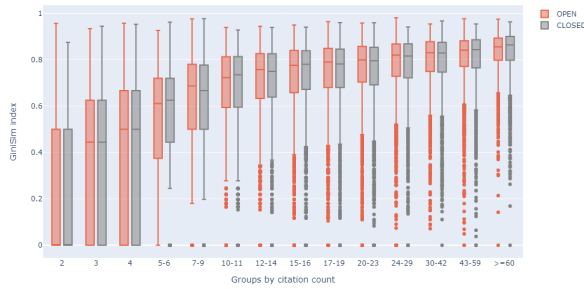


Figure: Box plots of GiniSim index on citing Countries by citation groups for 2011
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

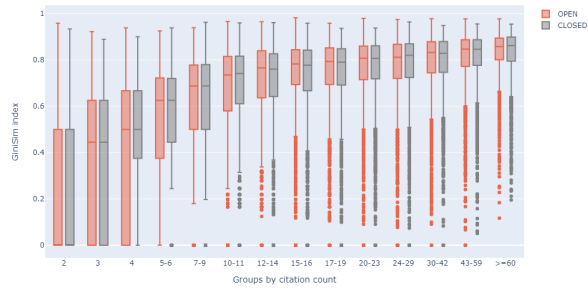


Figure: Box plots of GiniSim index on citing Countries by citation groups for 2012
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

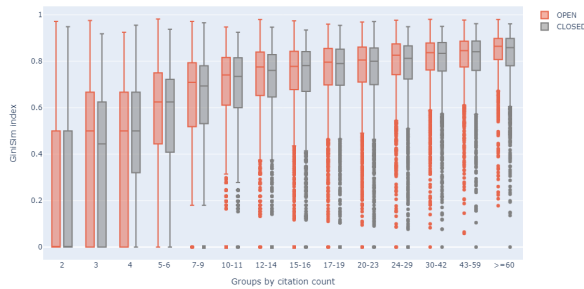


Figure: Box plots of GiniSim index on citing Countries by citation groups for 2013
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

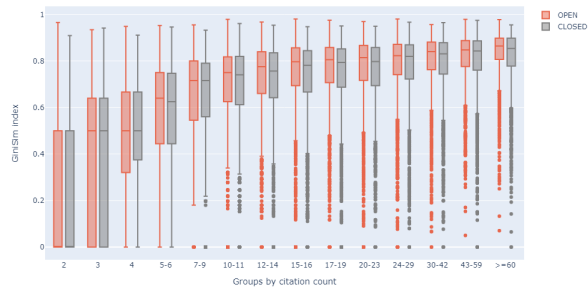


Figure: Box plots of GiniSim index on citing Countries by citation groups for 2014
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

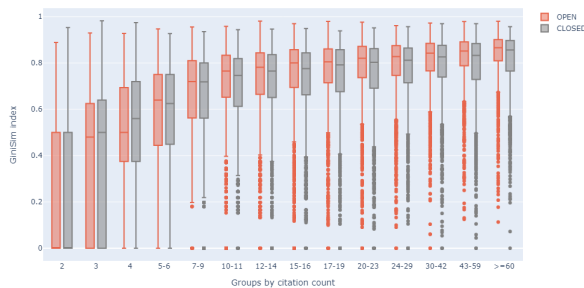


Figure: Box plots of GiniSim index on citing Countries by citation groups for 2015
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

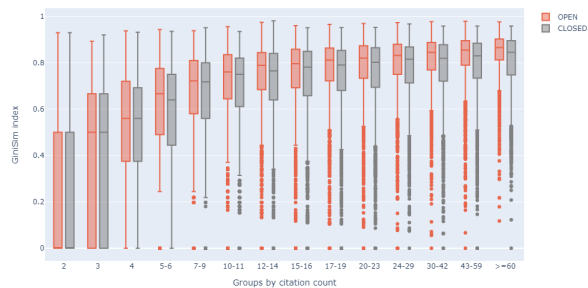


Figure: Box plots of GiniSim index on citing Countries by citation groups for 2016
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

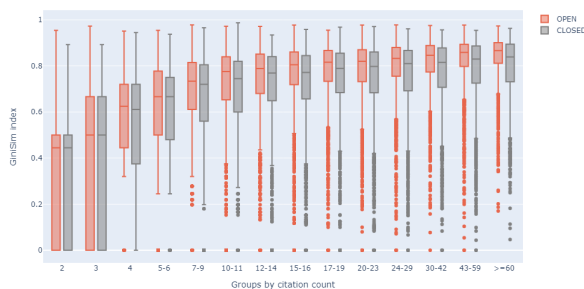


Figure: Box plots of GiniSim index on citing Countries by citation groups for 2017
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

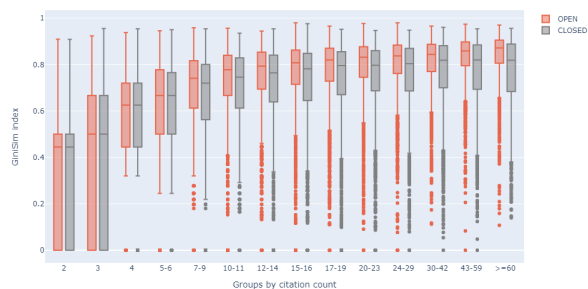


Figure: Box plots of GiniSim index on citing Countries by citation groups for 2018
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

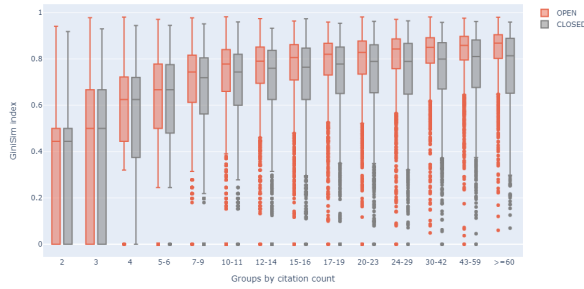
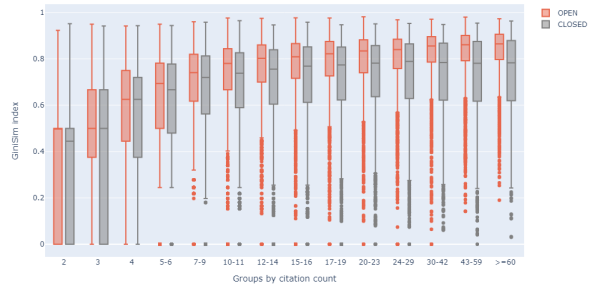


Figure: Box plots of GiniSim index on citing Countries by citation groups for 2019
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)



The next set is based on the Gini-Simpson index and Subregions as citing groups:

Figure: Box plots of GiniSim index on citing Subregions by citation groups for 2010
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

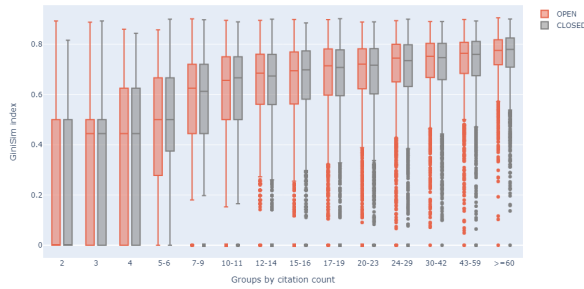


Figure: Box plots of GiniSim index on citing Subregions by citation groups for 2011
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

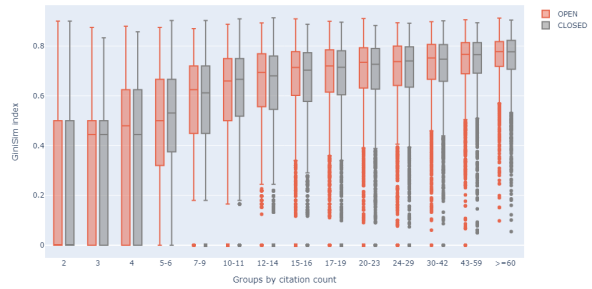


Figure: Box plots of GiniSim index on citing Subregions by citation groups for 2012
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

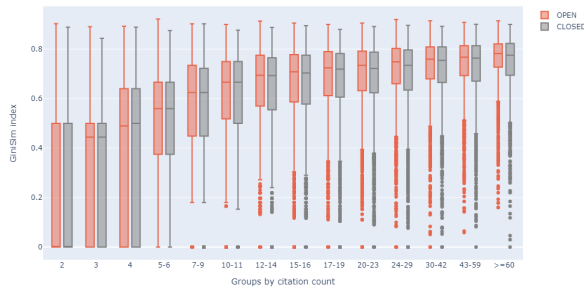


Figure: Box plots of GiniSim index on citing Subregions by citation groups for 2013
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

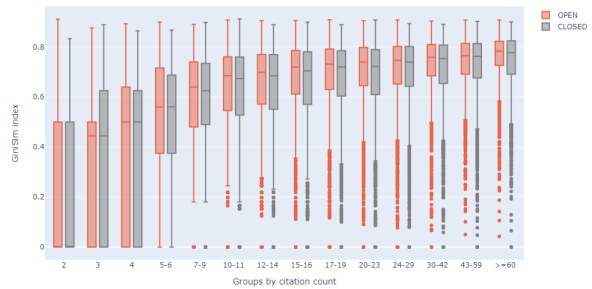


Figure: Box plots of GiniSim index on citing Subregions by citation groups for 2014
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

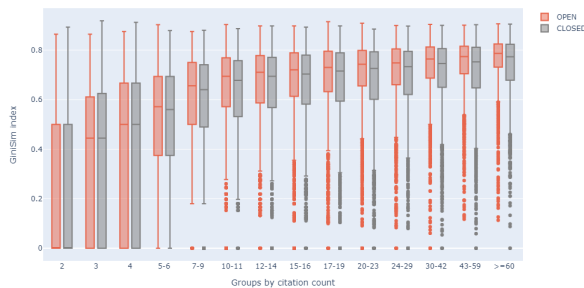


Figure: Box plots of GiniSim index on citing Subregions by citation groups for 2015
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

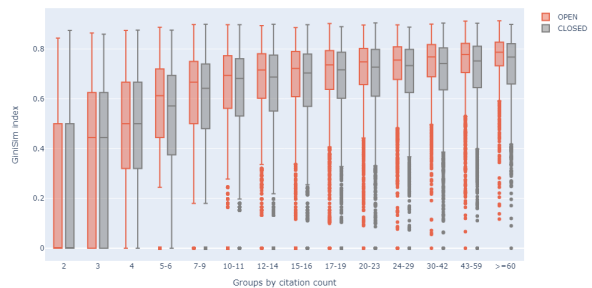


Figure: Box plots of GiniSim index on citing Subregions by citation groups for 2016
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

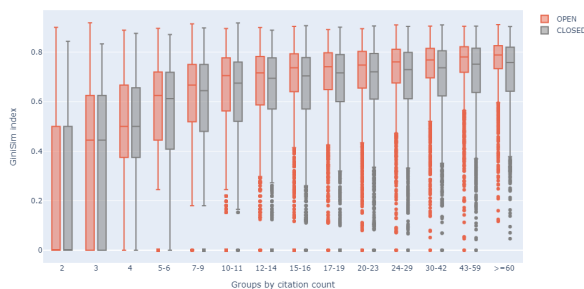


Figure: Box plots of GiniSim index on citing Subregions by citation groups for 2017
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

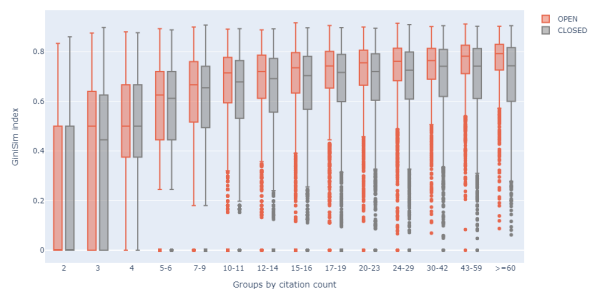


Figure: Box plots of GiniSim index on citing Subregions by citation groups for 2018
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

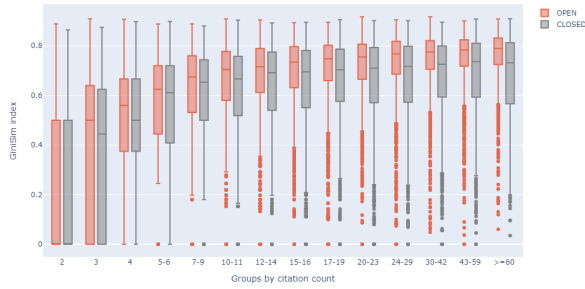
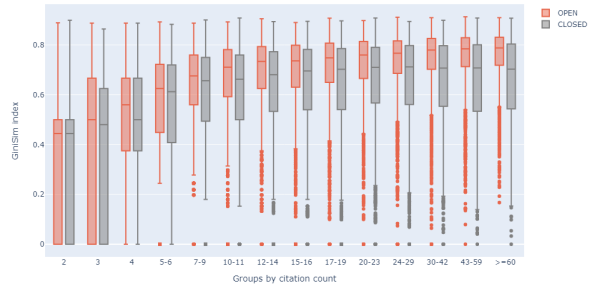


Figure: Box plots of GiniSim index on citing Subregions by citation groups for 2019
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)



The next set is based on the Gini-Simpson index and Regions as citing groups:

Figure: Box plots of GiniSim index on citing Regions by citation groups for 2010
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

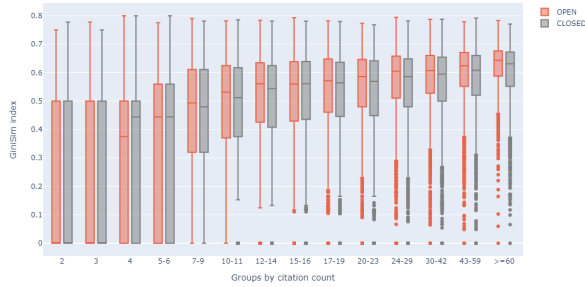


Figure: Box plots of GiniSim index on citing Regions by citation groups for 2011
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

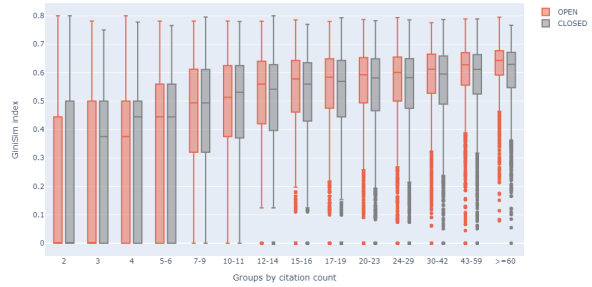


Figure: Box plots of GiniSim index on citing Regions by citation groups for 2012
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

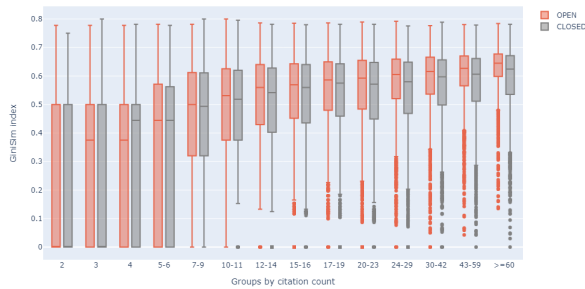


Figure: Box plots of GiniSim index on citing Regions by citation groups for 2013
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

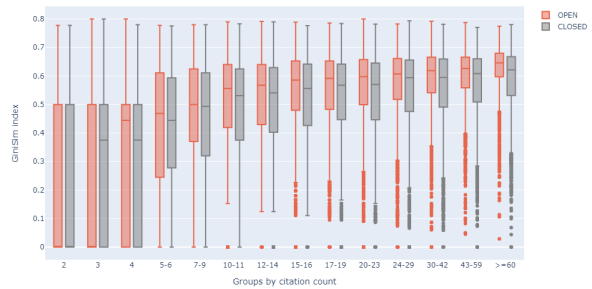


Figure: Box plots of GiniSim index on citing Regions by citation groups for 2014
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

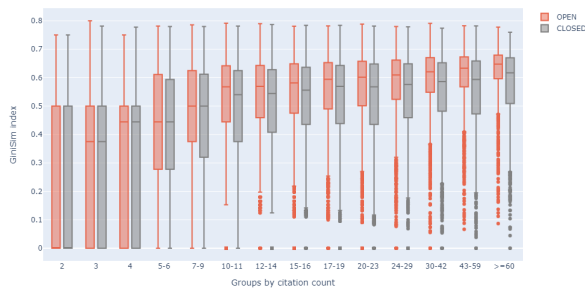


Figure: Box plots of GiniSim index on citing Regions by citation groups for 2015
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

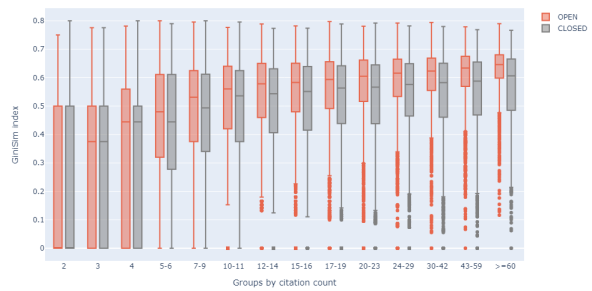


Figure: Box plots of GiniSim index on citing Regions by citation groups for 2016
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

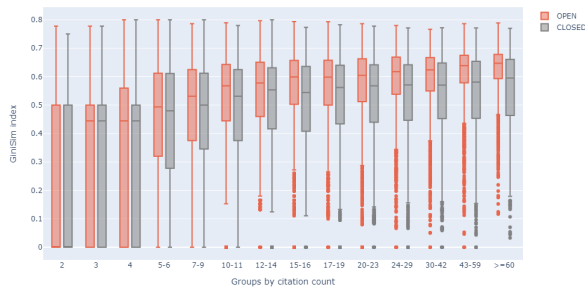


Figure: Box plots of GiniSim index on citing Regions by citation groups for 2017
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

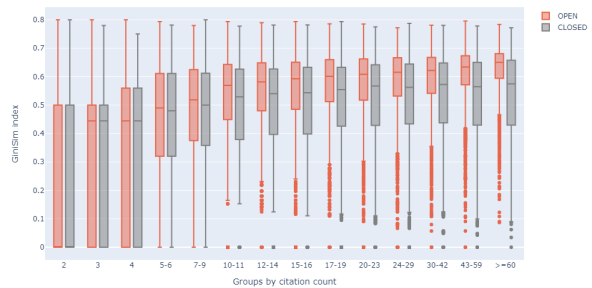


Figure: Box plots of GiniSim index on citing Regions by citation groups for 2018
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

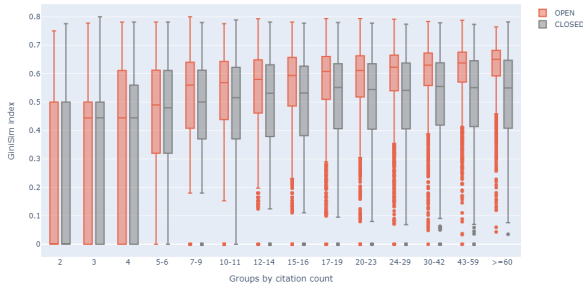
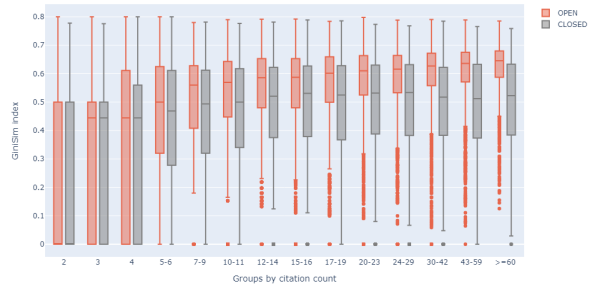


Figure: Box plots of GiniSim index on citing Regions by citation groups for 2019
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)



The next set is based on the Gini-Simpson index and Fields as citing groups:

Figure: Box plots of GiniSim index on citing Fields by citation groups for 2010
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

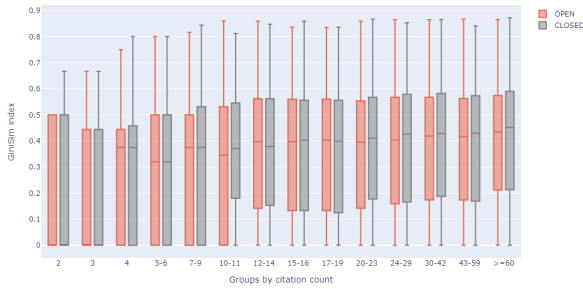


Figure: Box plots of GiniSim index on citing Fields by citation groups for 2011
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

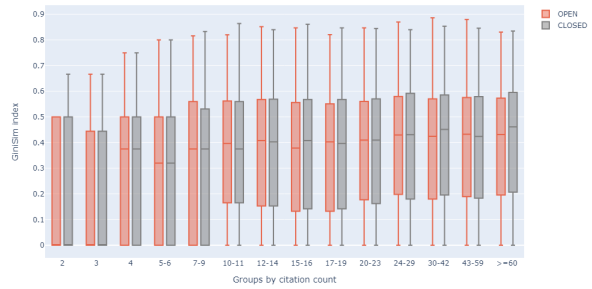


Figure: Box plots of GiniSim index on citing Fields by citation groups for 2012
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

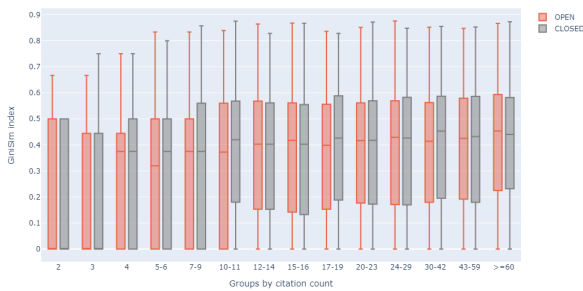


Figure: Box plots of GiniSim index on citing Fields by citation groups for 2013
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

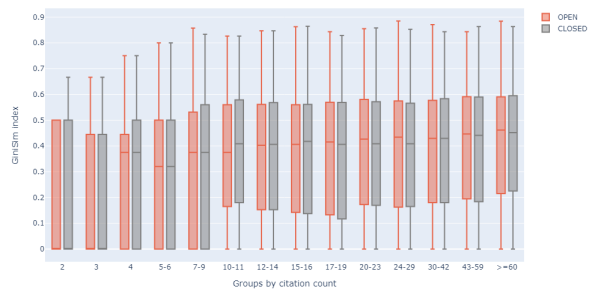


Figure: Box plots of GiniSim index on citing Fields by citation groups for 2014
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

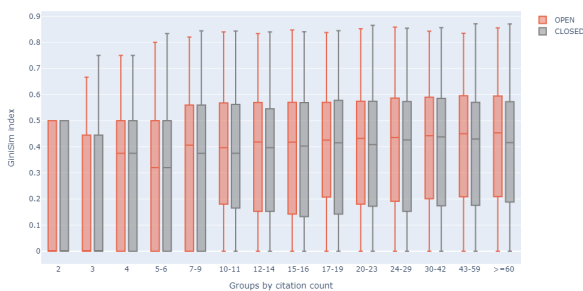


Figure: Box plots of GiniSim index on citing Fields by citation groups for 2015
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

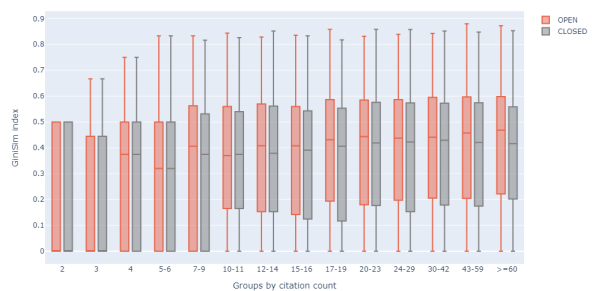


Figure: Box plots of GiniSim index on citing Fields by citation groups for 2016
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

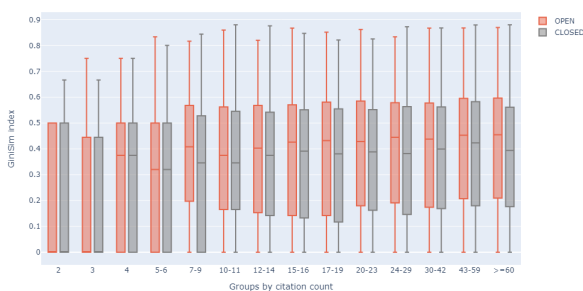
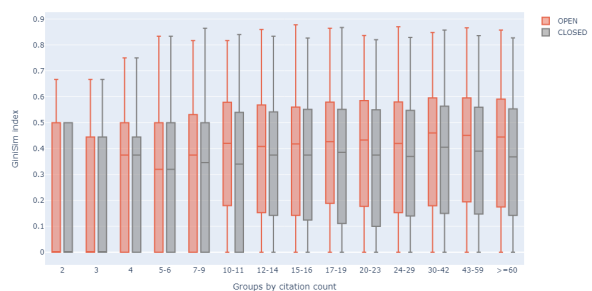


Figure: Box plots of GiniSim index on citing Fields by citation groups for 2017
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)





The next set is based on the Shannon index and institutions as citing groups:



Figure: Box plots of Shannon index on citing Institutions by citation groups for 2018
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

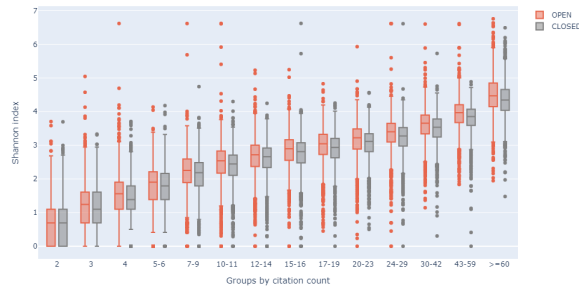
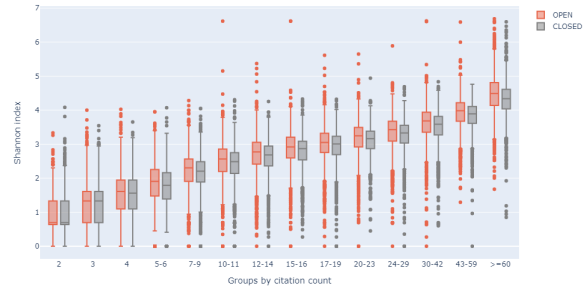


Figure: Box plots of Shannon index on citing Institutions by citation groups for 2019
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)



The next set is based on the Shannon index and countries as citing groups:

Figure: Box plots of Shannon index on citing Countries by citation groups for 2010
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

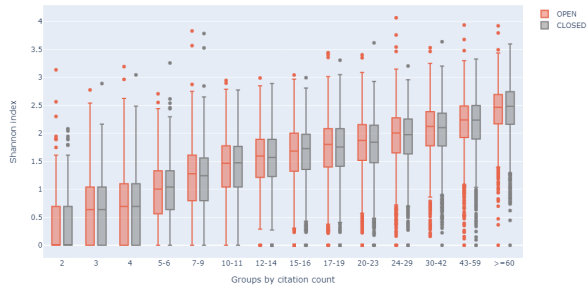


Figure: Box plots of Shannon index on citing Countries by citation groups for 2011
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

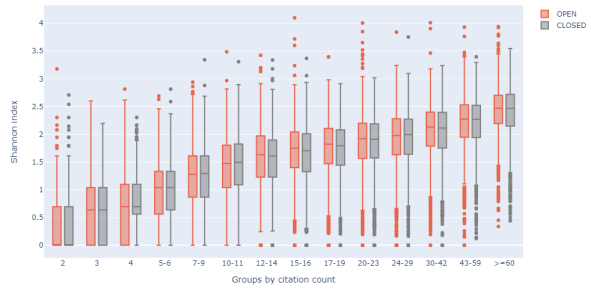


Figure: Box plots of Shannon index on citing Countries by citation groups for 2012
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

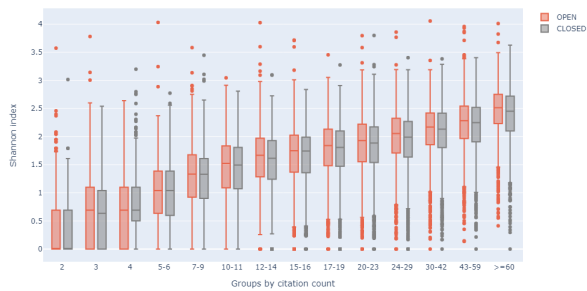


Figure: Box plots of Shannon index on citing Countries by citation groups for 2013
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

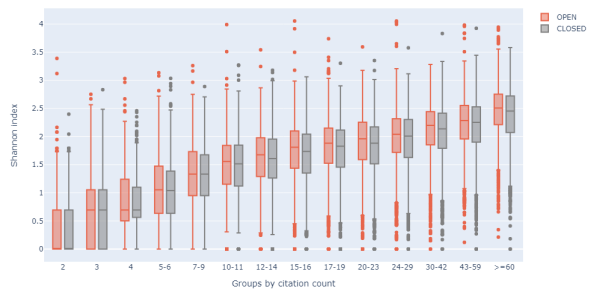


Figure: Box plots of Shannon index on citing Countries by citation groups for 2014
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

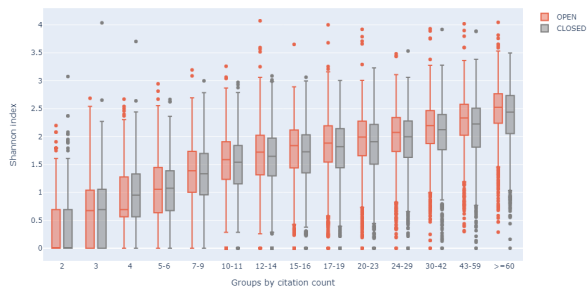


Figure: Box plots of Shannon index on citing Countries by citation groups for 2015
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

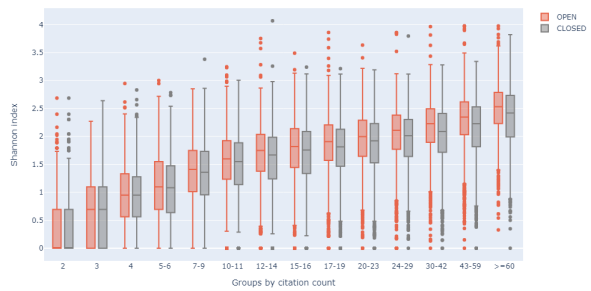


Figure: Box plots of Shannon index on citing Countries by citation groups for 2016
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

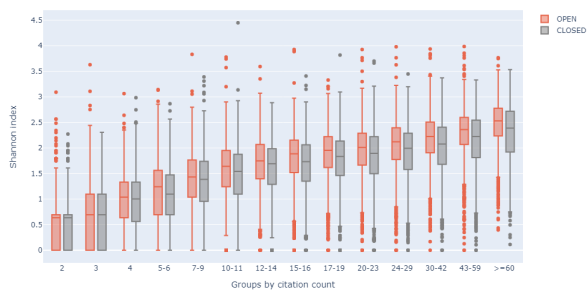


Figure: Box plots of Shannon index on citing Countries by citation groups for 2017
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

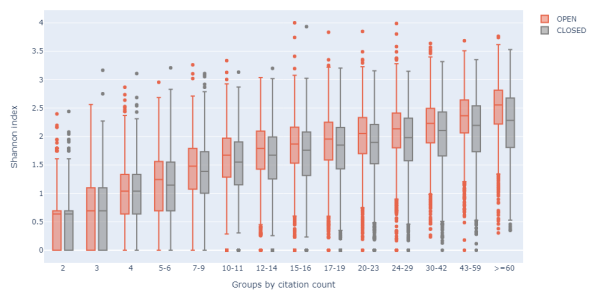


Figure: Box plots of Shannon index on citing Countries by citation groups for 2018
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

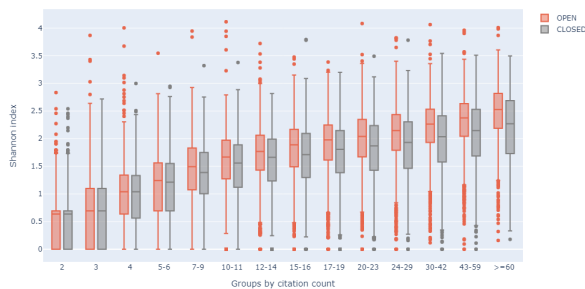
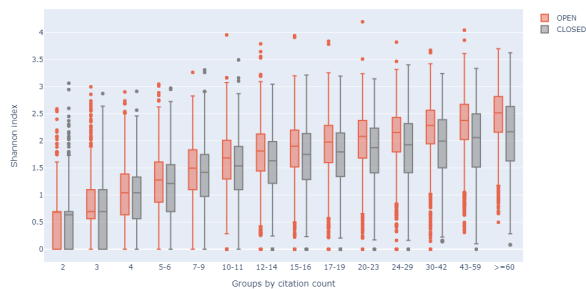


Figure: Box plots of Shannon index on citing Countries by citation groups for 2019
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)



The next set is based on the Shannon index and Subregions as citing groups:

Figure: Box plots of Shannon index on citing Subregions by citation groups for 2010
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

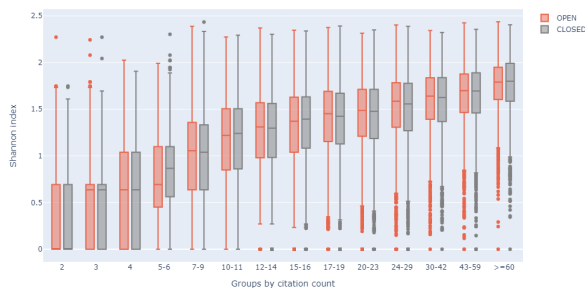


Figure: Box plots of Shannon index on citing Subregions by citation groups for 2011
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

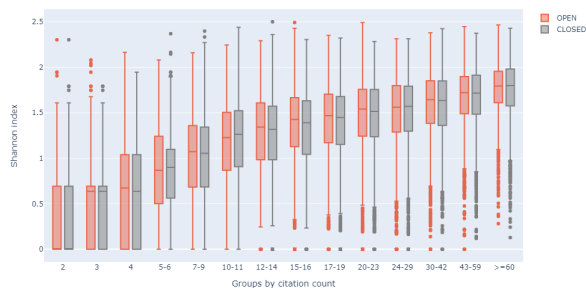


Figure: Box plots of Shannon index on citing Subregions by citation groups for 2012
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

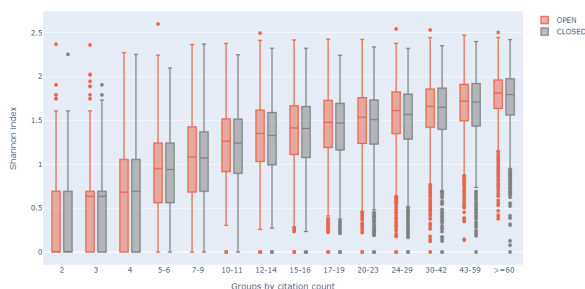


Figure: Box plots of Shannon index on citing Subregions by citation groups for 2013
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

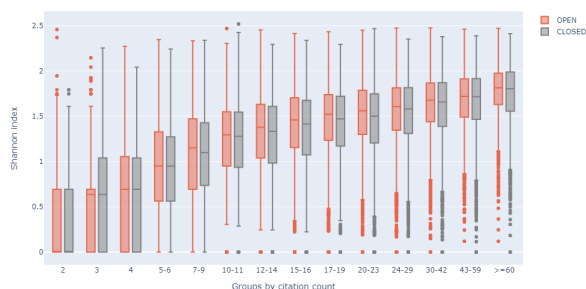


Figure: Box plots of Shannon index on citing Subregions by citation groups for 2014
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

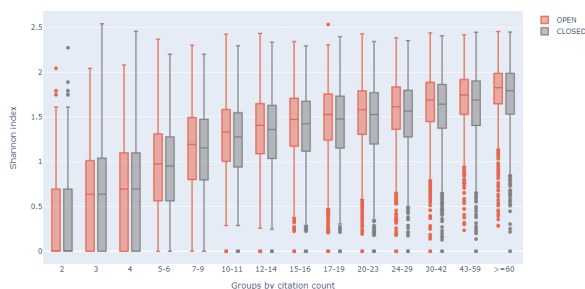


Figure: Box plots of Shannon index on citing Subregions by citation groups for 2015
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

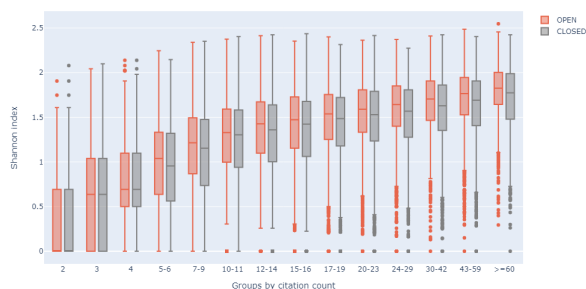


Figure: Box plots of Shannon index on citing Subregions by citation groups for 2016
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

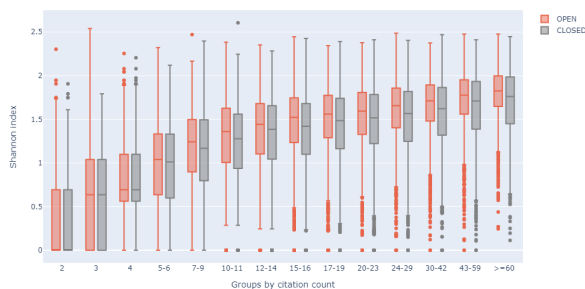


Figure: Box plots of Shannon index on citing Subregions by citation groups for 2017
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

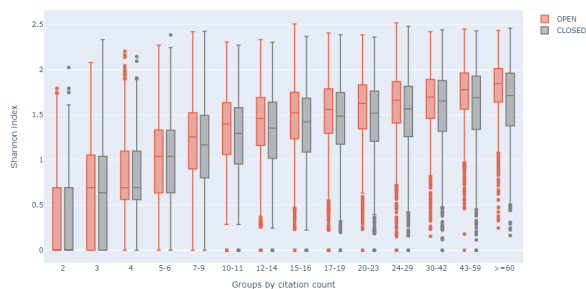


Figure: Box plots of Shannon index on citing Subregions by citation groups for 2018
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

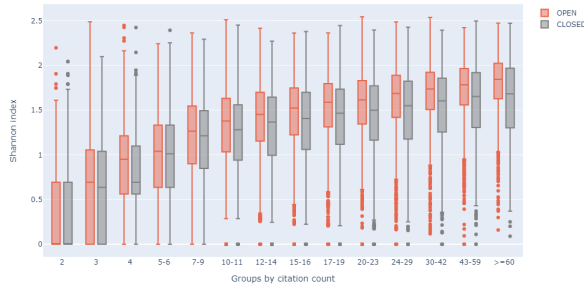
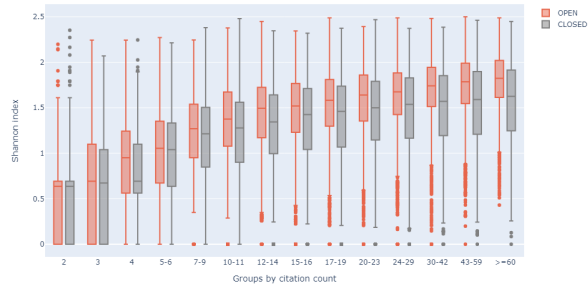


Figure: Box plots of Shannon index on citing Subregions by citation groups for 2019
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)



The next set is based on the Shannon index and Regions as citing groups:

Figure: Box plots of Shannon index on citing Regions by citation groups for 2010
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

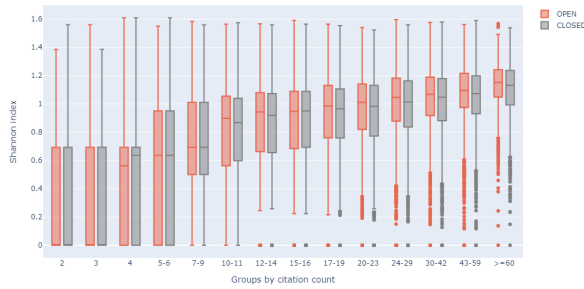


Figure: Box plots of Shannon index on citing Regions by citation groups for 2011
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

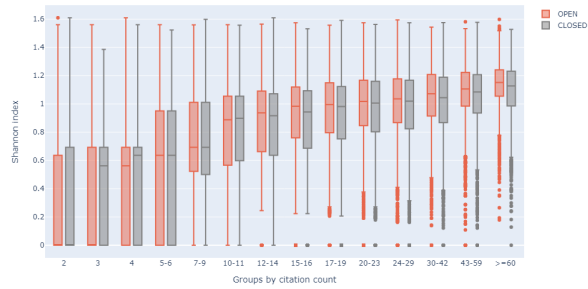


Figure: Box plots of Shannon index on citing Regions by citation groups for 2012
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

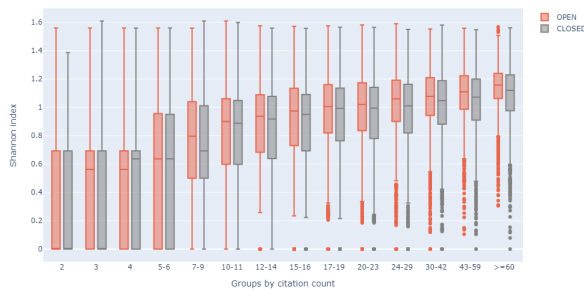


Figure: Box plots of Shannon index on citing Regions by citation groups for 2013
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

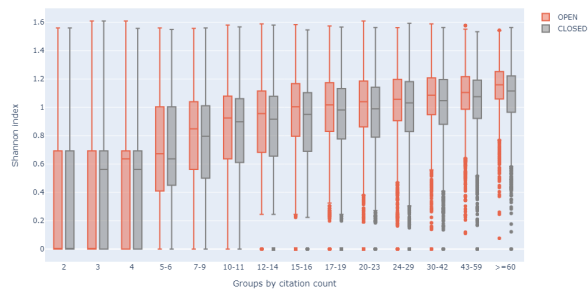


Figure: Box plots of Shannon index on citing Regions by citation groups for 2014
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

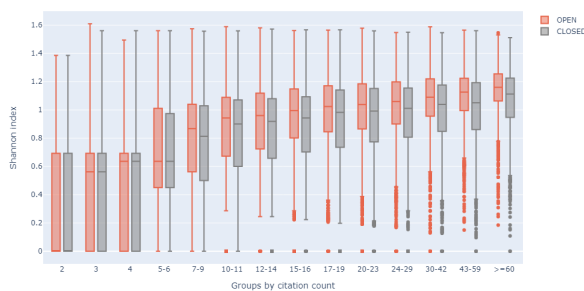


Figure: Box plots of Shannon index on citing Regions by citation groups for 2015
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

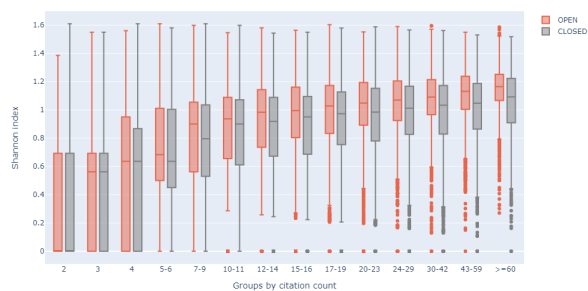


Figure: Box plots of Shannon index on citing Regions by citation groups for 2016
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

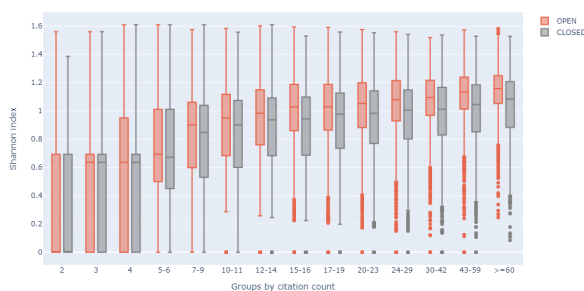


Figure: Box plots of Shannon index on citing Regions by citation groups for 2017
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

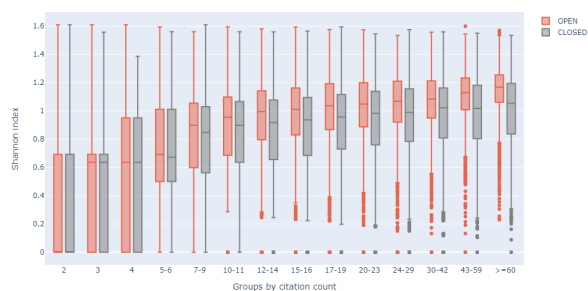


Figure: Box plots of Shannon index on citing Regions by citation groups for 2018
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

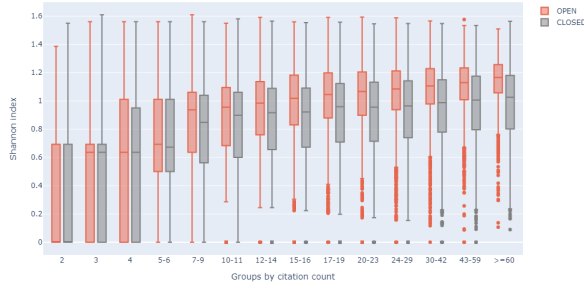
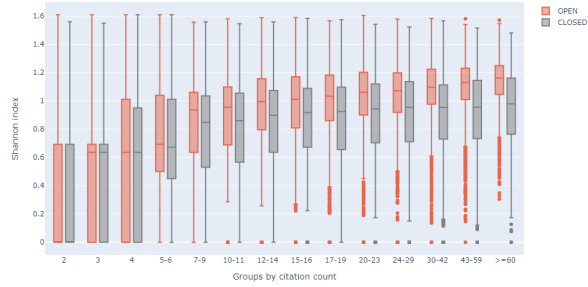


Figure: Box plots of Shannon index on citing Regions by citation groups for 2019
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)



The next set is based on the Shannon index and Fields as citing groups:

Figure: Box plots of Shannon index on citing Fields by citation groups for 2010
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

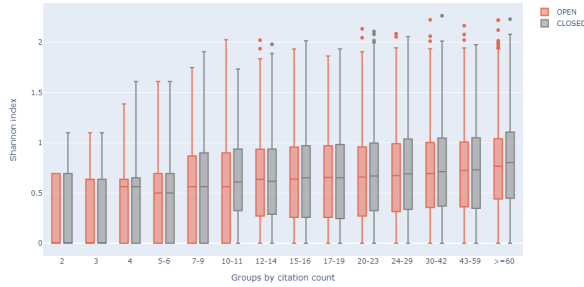


Figure: Box plots of Shannon index on citing Fields by citation groups for 2011
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

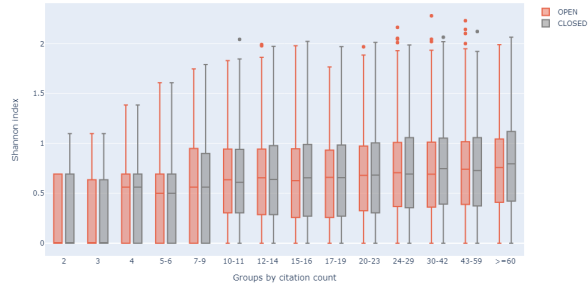


Figure: Box plots of Shannon index on citing Fields by citation groups for 2012
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

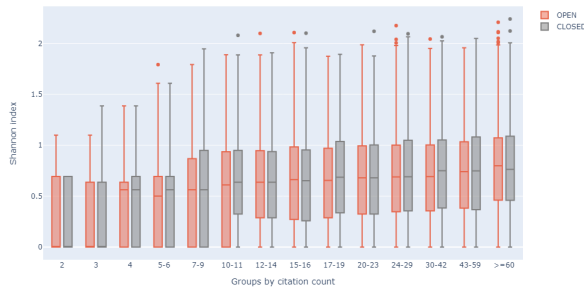


Figure: Box plots of Shannon index on citing Fields by citation groups for 2013
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

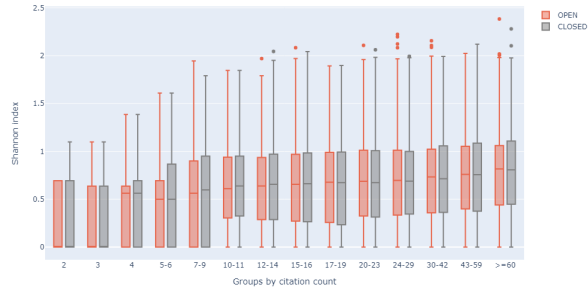


Figure: Box plots of Shannon index on citing Fields by citation groups for 2014
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

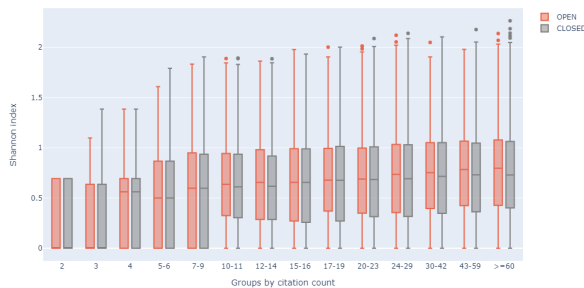


Figure: Box plots of Shannon index on citing Fields by citation groups for 2015
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

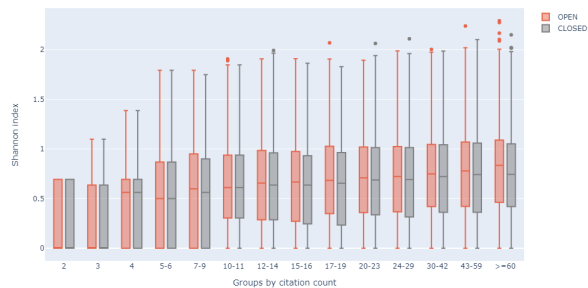


Figure: Box plots of Shannon index on citing Fields by citation groups for 2016
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

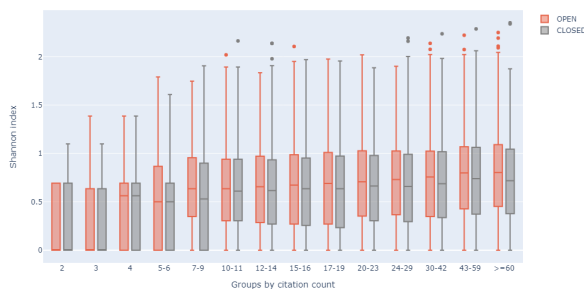


Figure: Box plots of Shannon index on citing Fields by citation groups for 2017
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

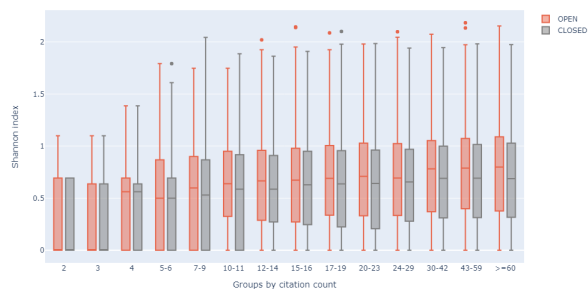


Figure: Box plots of Shannon index on citing Fields by citation groups for 2018
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)

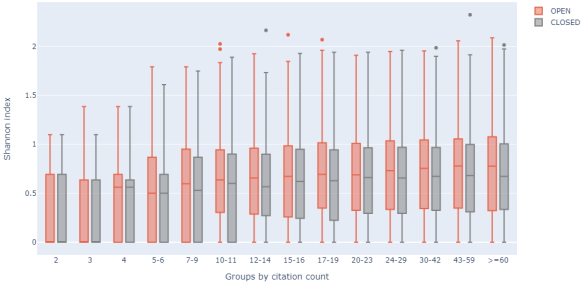
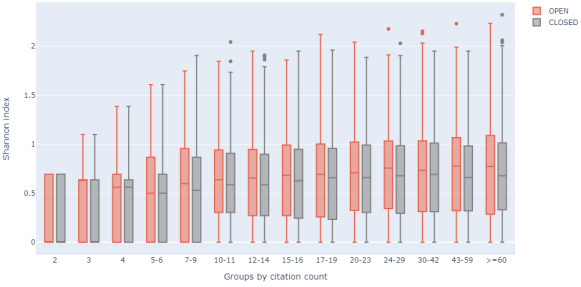


Figure: Box plots of Shannon index on citing Fields by citation groups for 2019
(A total of 56000 papers. Each group consists of a sample 2000 OA papers and 2000 non-OA papers)



Section J: Citation counts vs citation diversity scores

In the following figures, quartiles of diversity scores are tracked against citation counts for the complete data set. Instead of sampling papers by citation groups in the previous section, we include all papers in the study in the following analysis and all citation counts (not groups). This is plotted for various combinations of diversity measure, type of citing groups and publication year. Results with fields of research as citing groups are excluded, as no meaningful results are produced due to very small numbers (i.e., most papers are cited within very few fields). The aim is to further explore potential relationships between diversity scores and citation counts. Interestingly, the mild positive relationship between diversity scores and citation counts observed in the lower end of the spectrum (which is consistent with the previous section) seems to fade away as we move towards papers with very high citations. Hence, in most cases, diversity scores are not completely driven by citation counts.

The first set of these is based on the Gini-Simpson index and institutions as citing groups:

Figure: Citation count versus GiniSim index of citing Institutions for 2010

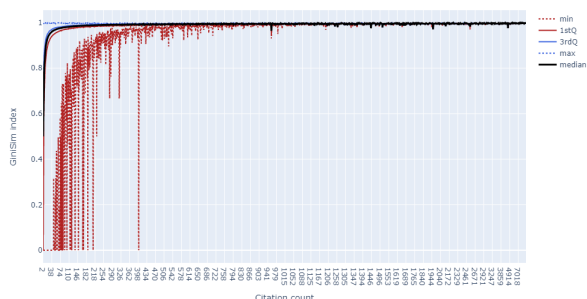


Figure: Citation count versus GiniSim index of citing Institutions for 2011

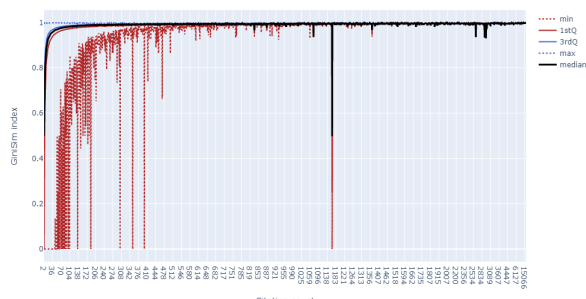


Figure: Citation count versus GiniSim index of citing Institutions for 2012

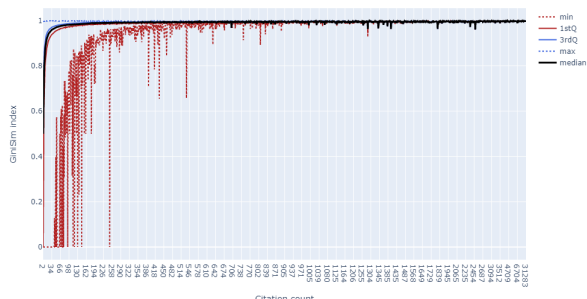


Figure: Citation count versus GiniSim index of citing Institutions for 2013

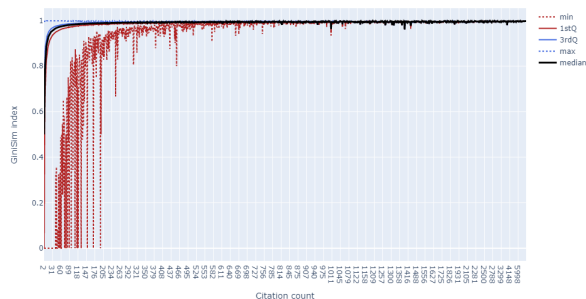


Figure: Citation count versus GiniSim index of citing Institutions for 2014

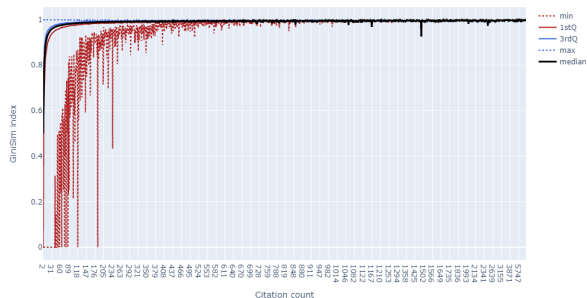


Figure: Citation count versus GiniSim index of citing Institutions for 2015

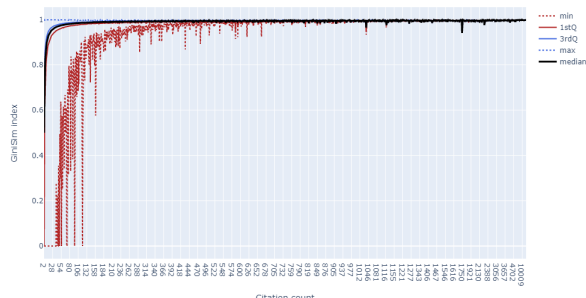


Figure: Citation count versus GiniSim index of citing Institutions for 2016

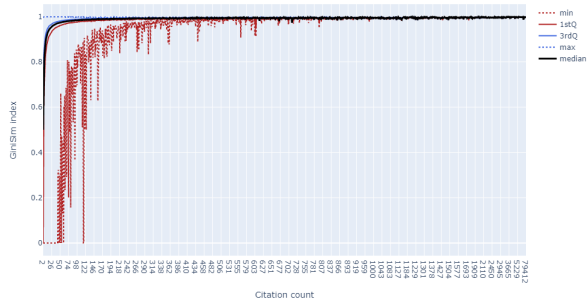


Figure: Citation count versus GiniSim index of citing Institutions for 2017

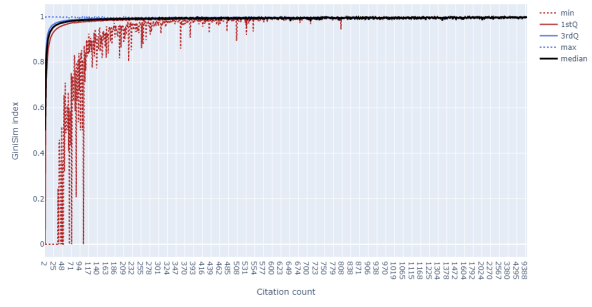


Figure: Citation count versus GiniSim index of citing Institutions for 2018

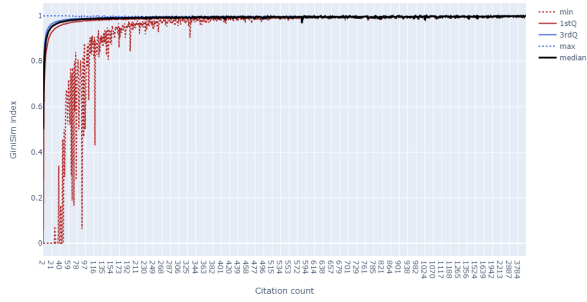
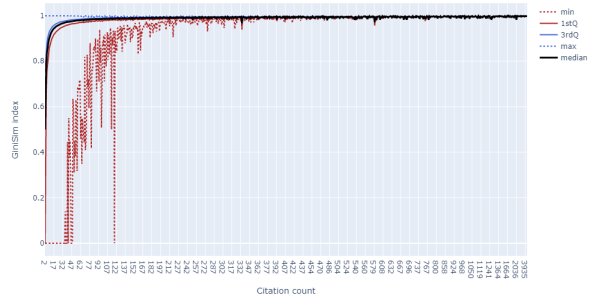


Figure: Citation count versus GiniSim index of citing Institutions for 2019



The next set is based on the Gini-Simpson index and countries as citing groups:

Figure: Citation count versus GiniSim index of citing Countries for 2010

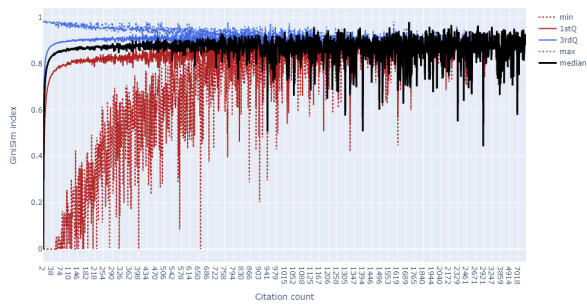


Figure: Citation count versus GiniSim index of citing Countries for 2011

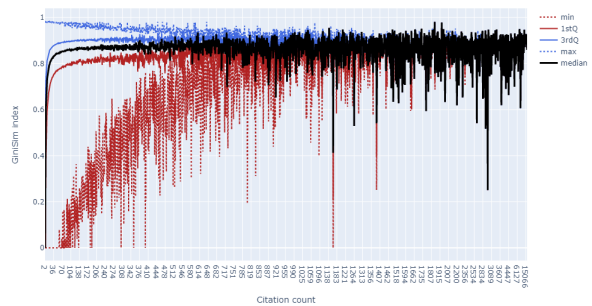


Figure: Citation count versus GiniSim index of citing Countries for 2012

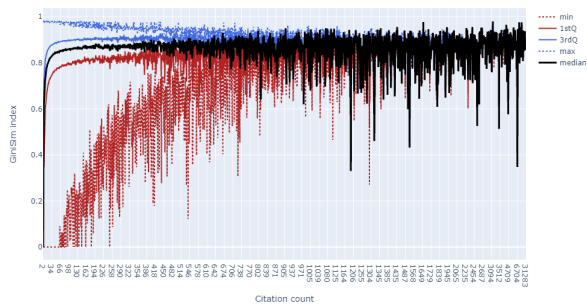


Figure: Citation count versus GiniSim index of citing Countries for 2013

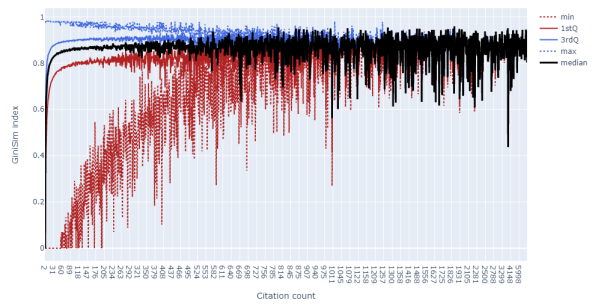


Figure: Citation count versus GiniSim index of citing Countries for 2014

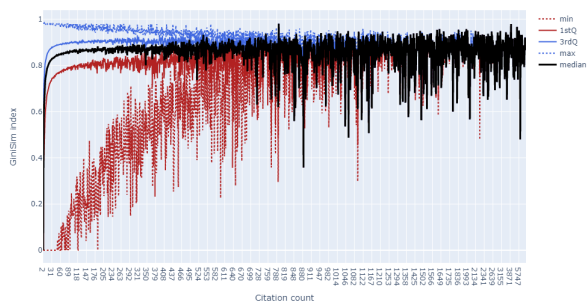


Figure: Citation count versus GiniSim index of citing Countries for 2015

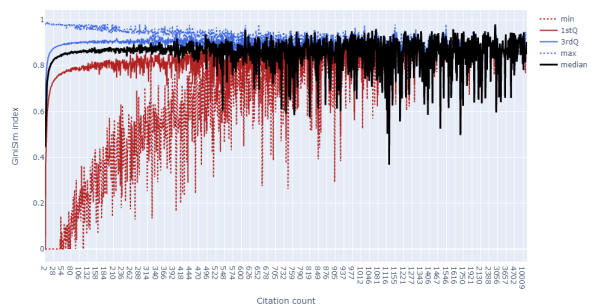


Figure: Citation count versus GiniSim index of citing Countries for 2016

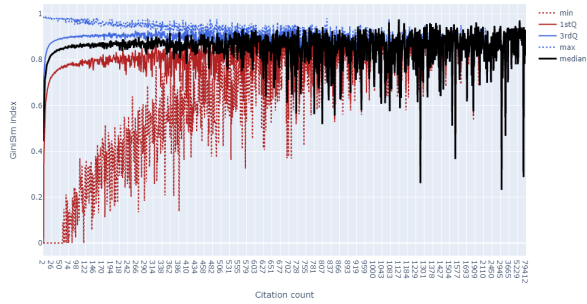


Figure: Citation count versus GiniSim index of citing Countries for 2017

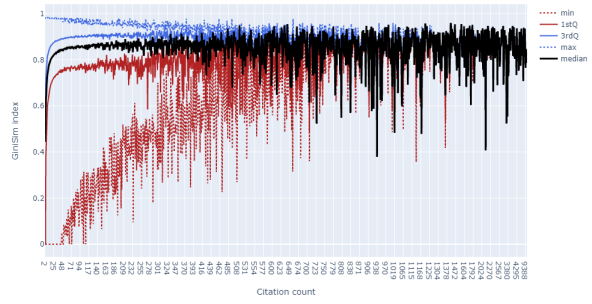


Figure: Citation count versus GiniSim index of citing Countries for 2018

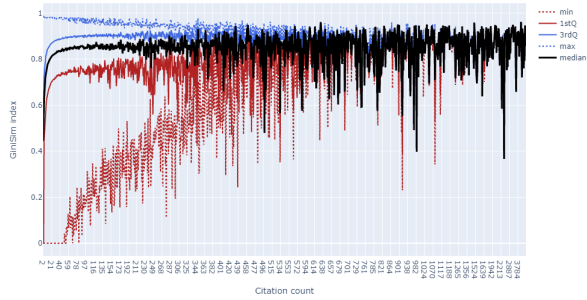
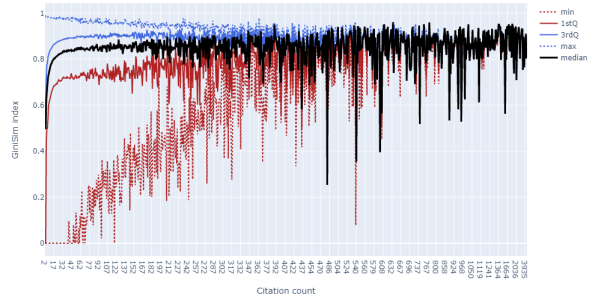


Figure: Citation count versus GiniSim index of citing Countries for 2019



The next set is based on the Gini-Simpson index and Subregions as citing groups:

Figure: Citation count versus GiniSim index of citing Subregions for 2010

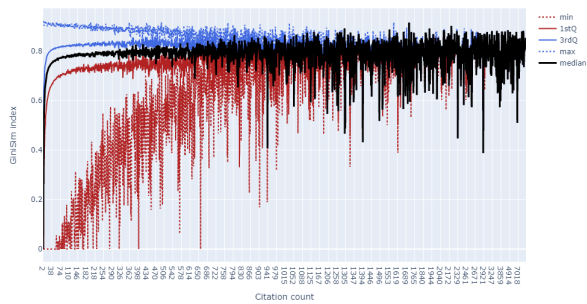


Figure: Citation count versus GiniSim index of citing Subregions for 2011

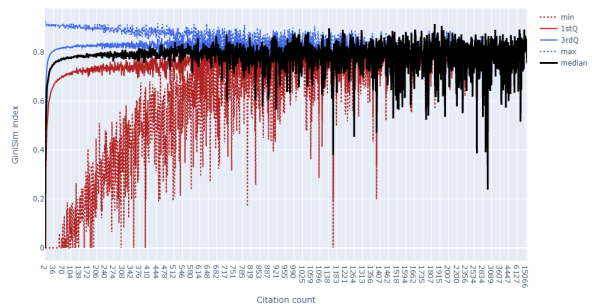


Figure: Citation count versus GiniSim index of citing Subregions for 2012

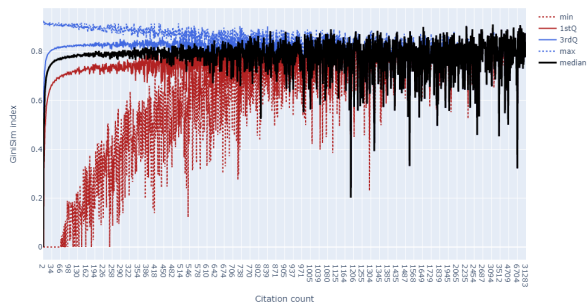


Figure: Citation count versus GiniSim index of citing Subregions for 2013

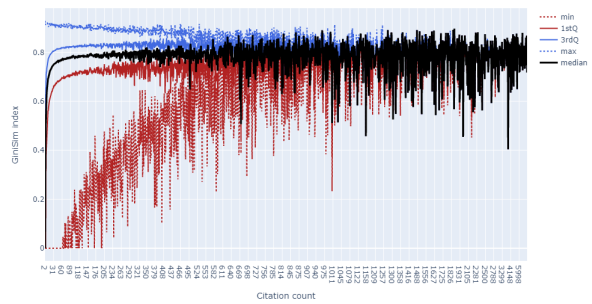


Figure: Citation count versus GiniSim index of citing Subregions for 2014

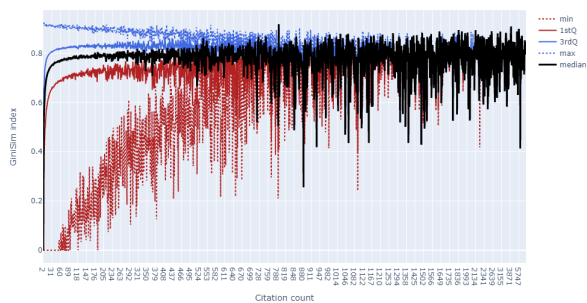


Figure: Citation count versus GiniSim index of citing Subregions for 2015

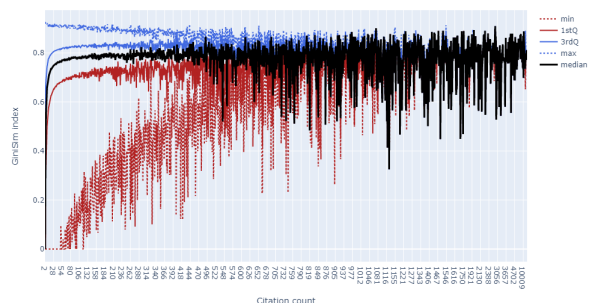


Figure: Citation count versus GiniSim index of citing Subregions for 2016

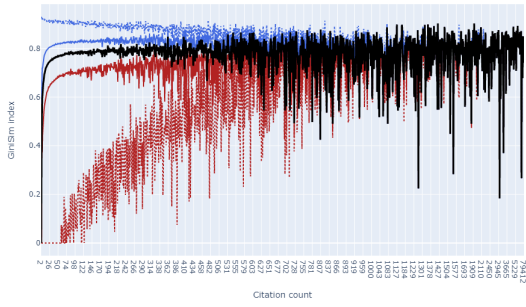


Figure: Citation count versus GiniSim index of citing Subregions for 2017

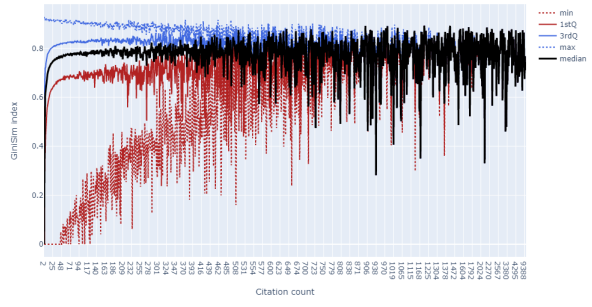


Figure: Citation count versus GiniSim index of citing Subregions for 2018

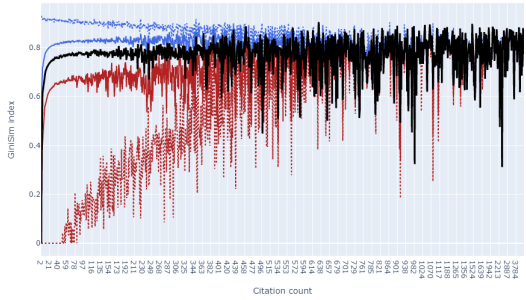
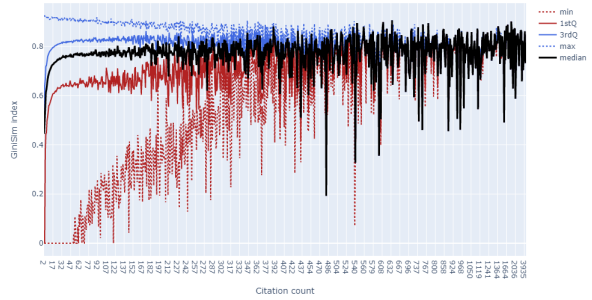


Figure: Citation count versus GiniSim index of citing Subregions for 2019



The next set is based on the Gini-Simpson index and Regions as citing groups:

Figure: Citation count versus GiniSim index of citing Regions for 2010

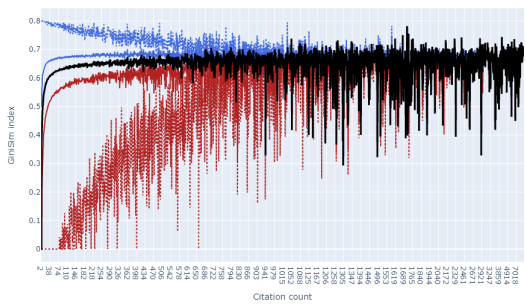


Figure: Citation count versus GiniSim index of citing Regions for 2011

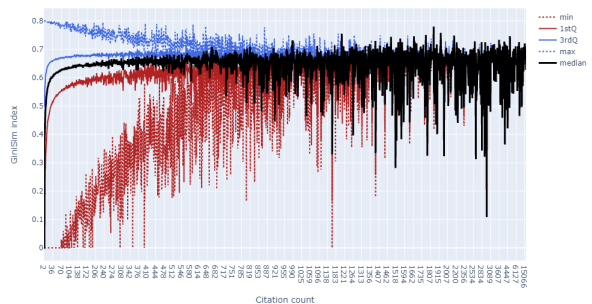


Figure: Citation count versus GiniSim index of citing Regions for 2012

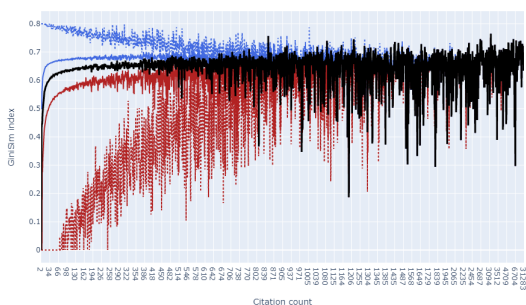


Figure: Citation count versus GiniSim index of citing Regions for 2013

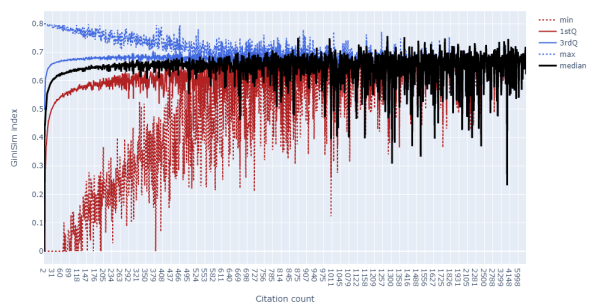


Figure: Citation count versus GiniSim index of citing Regions for 2014

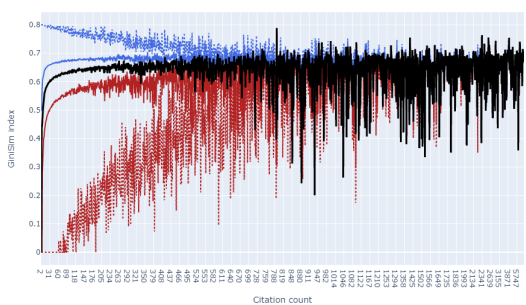


Figure: Citation count versus GiniSim index of citing Regions for 2015

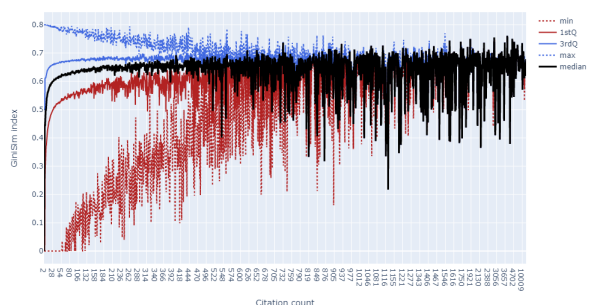


Figure: Citation count versus GiniSim index of citing Regions for 2016

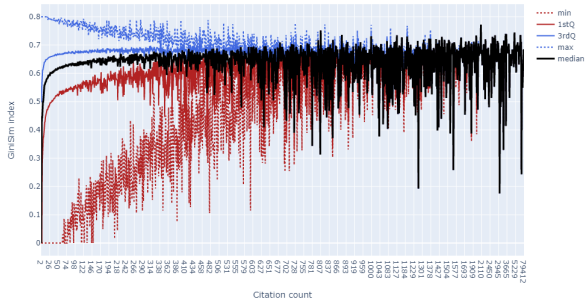


Figure: Citation count versus GiniSim index of citing Regions for 2017

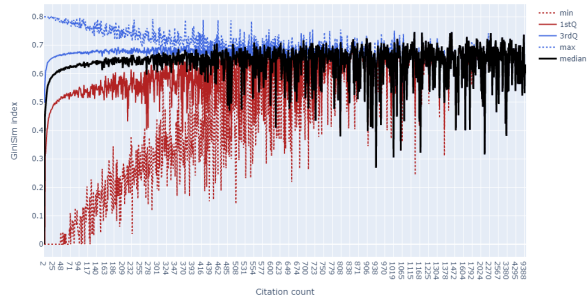


Figure: Citation count versus GiniSim index of citing Regions for 2018

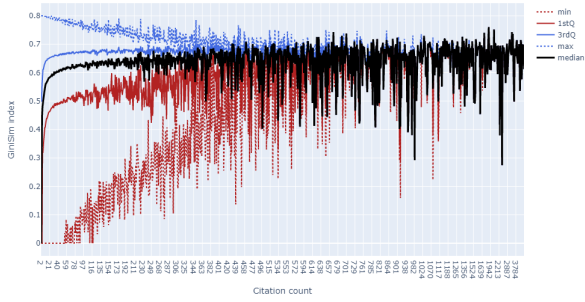
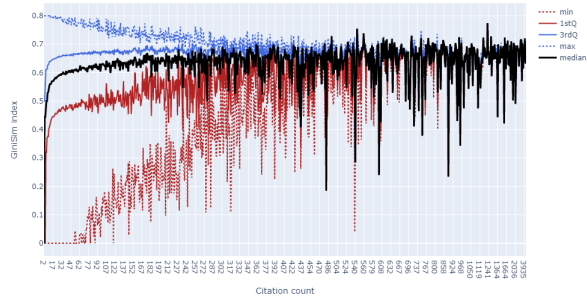


Figure: Citation count versus GiniSim index of citing Regions for 2019



The next set is based on the Shannon index and institutions as citing groups:

Figure: Citation count versus Shannon index of citing Institutions for 2010

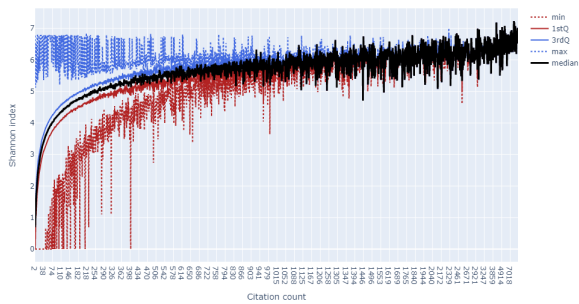


Figure: Citation count versus Shannon index of citing Institutions for 2011

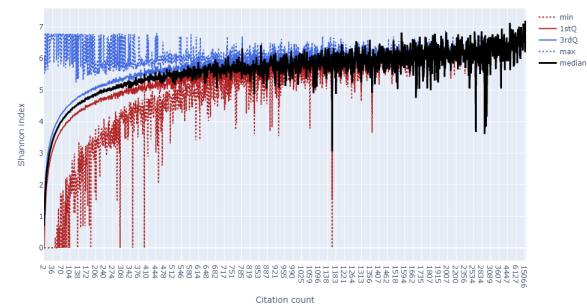


Figure: Citation count versus Shannon index of citing Institutions for 2012

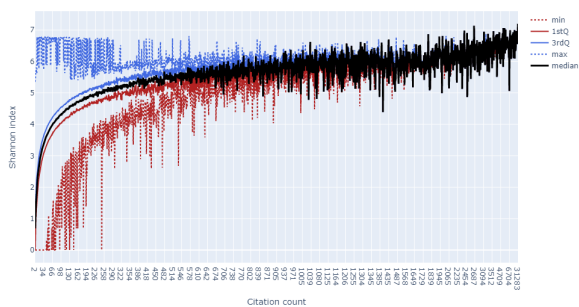


Figure: Citation count versus Shannon index of citing Institutions for 2013

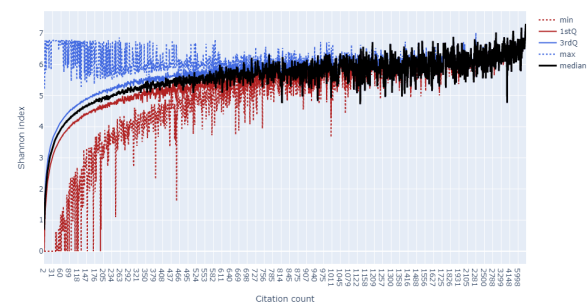


Figure: Citation count versus Shannon index of citing Institutions for 2014

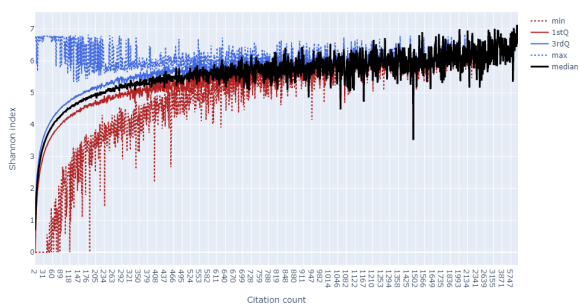


Figure: Citation count versus Shannon index of citing Institutions for 2015

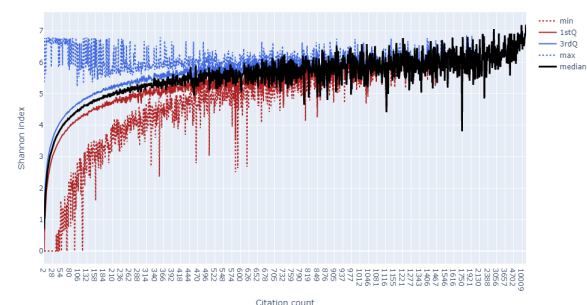


Figure: Citation count versus Shannon index of citing Institutions for 2016

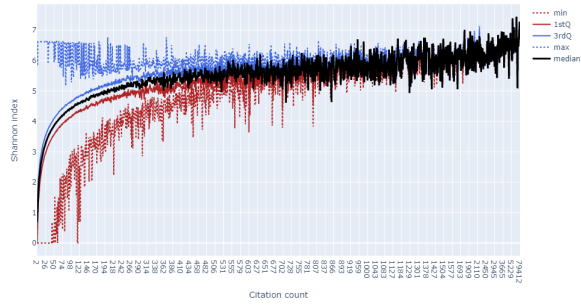


Figure: Citation count versus Shannon index of citing Institutions for 2017

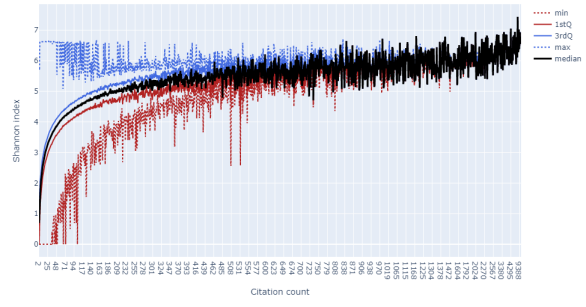


Figure: Citation count versus Shannon index of citing Institutions for 2018

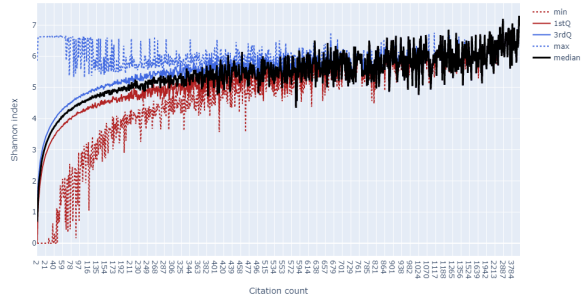
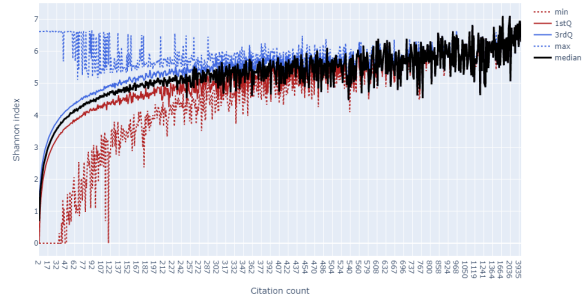


Figure: Citation count versus Shannon index of citing Institutions for 2019



The next set is based on the Shannon index and countries as citing groups:

Figure: Citation count versus Shannon index of citing Countries for 2010

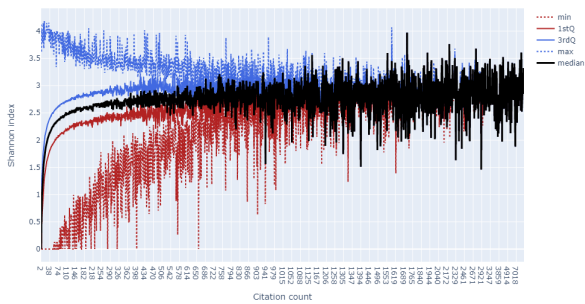


Figure: Citation count versus Shannon index of citing Countries for 2011

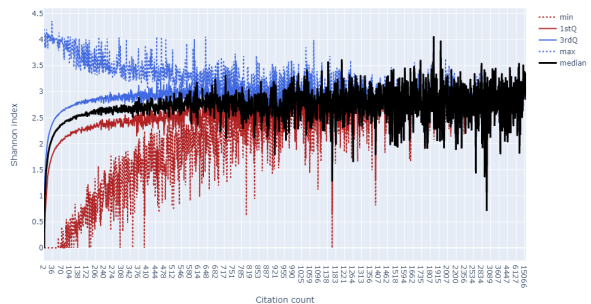


Figure: Citation count versus Shannon index of citing Countries for 2012

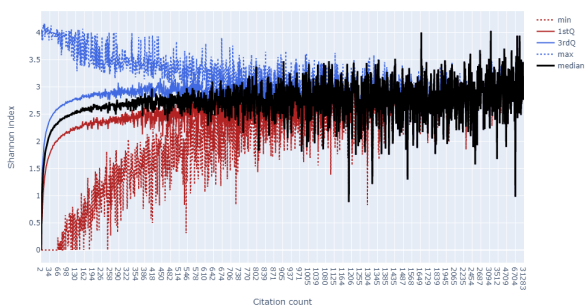


Figure: Citation count versus Shannon index of citing Countries for 2013

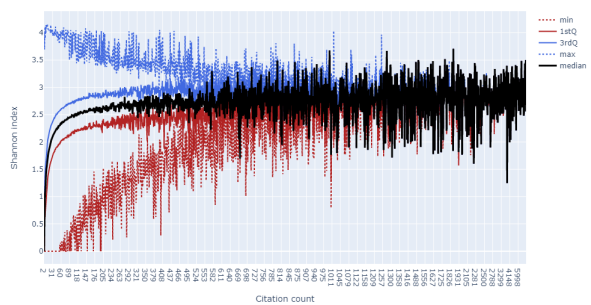


Figure: Citation count versus Shannon index of citing Countries for 2014

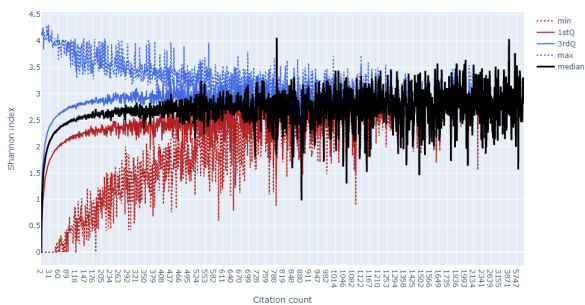


Figure: Citation count versus Shannon index of citing Countries for 2015

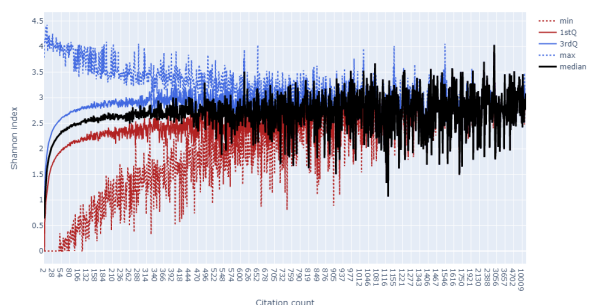


Figure: Citation count versus Shannon index of citing Countries for 2016

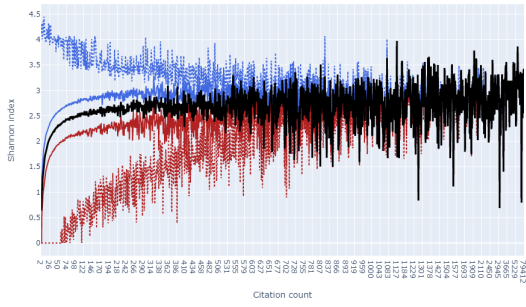


Figure: Citation count versus Shannon index of citing Countries for 2017

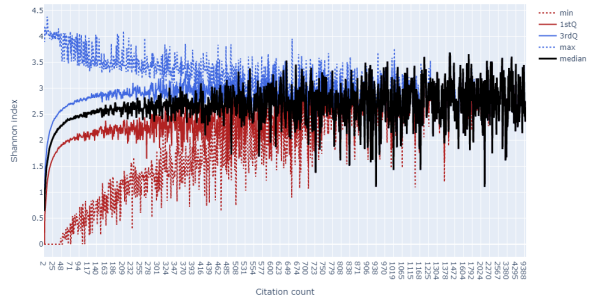


Figure: Citation count versus Shannon index of citing Countries for 2018

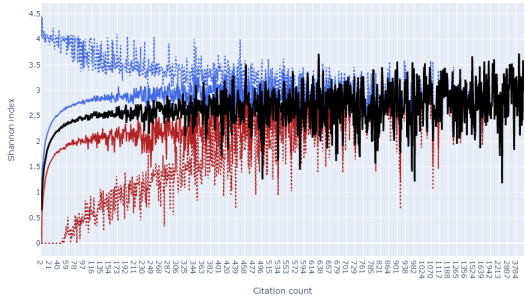


Figure: Citation count versus Shannon index of citing Countries for 2019



The next set is based on the Shannon index and Subregions as citing groups:

Figure: Citation count versus Shannon index of citing Subregions for 2010

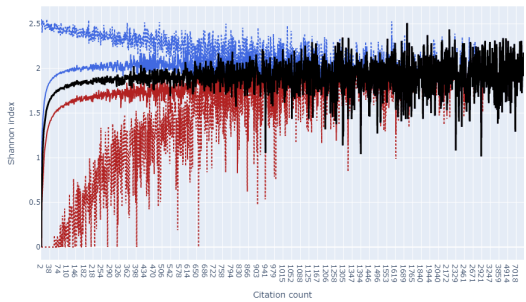


Figure: Citation count versus Shannon index of citing Subregions for 2011

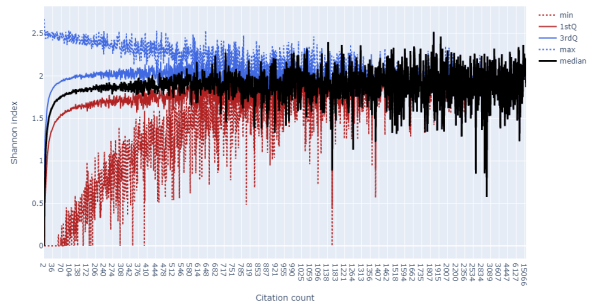


Figure: Citation count versus Shannon index of citing Subregions for 2012

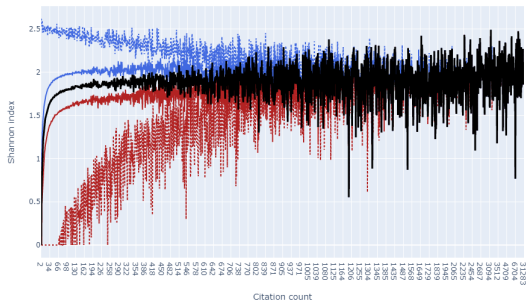


Figure: Citation count versus Shannon index of citing Subregions for 2013

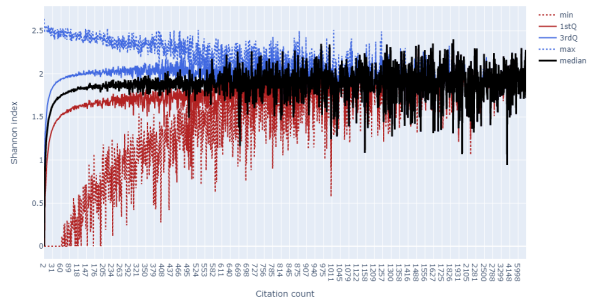


Figure: Citation count versus Shannon index of citing Subregions for 2014

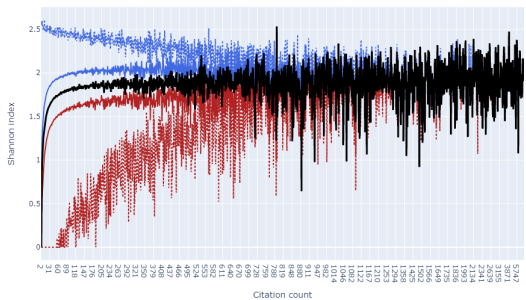


Figure: Citation count versus Shannon index of citing Subregions for 2015

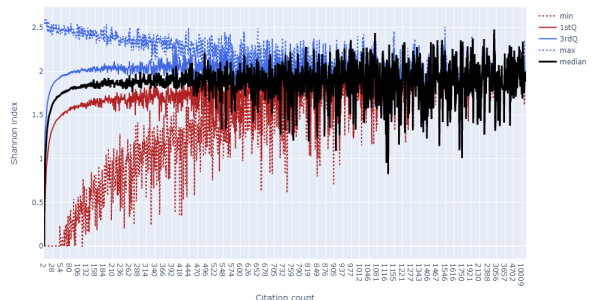


Figure: Citation count versus Shannon index of citing Subregions for 2016

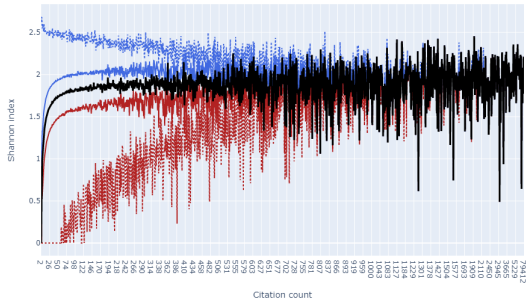


Figure: Citation count versus Shannon index of citing Subregions for 2017

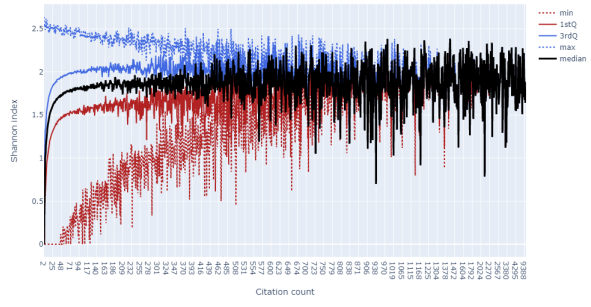


Figure: Citation count versus Shannon index of citing Subregions for 2018

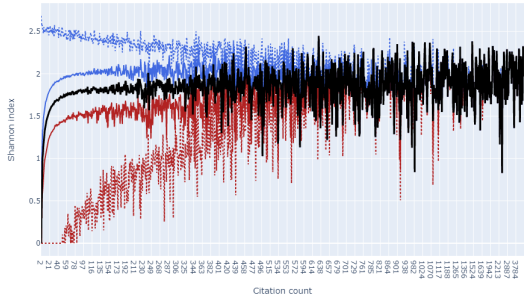
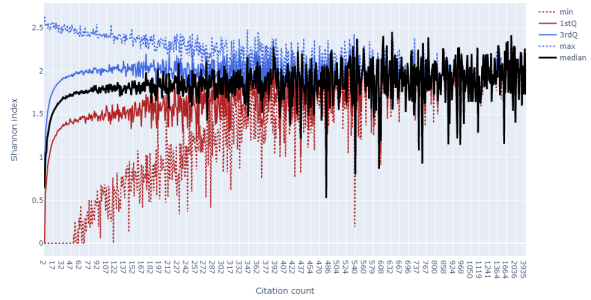


Figure: Citation count versus Shannon index of citing Subregions for 2019



The next set is based on the Shannon index and Regions as citing groups:

Figure: Citation count versus Shannon index of citing Regions for 2010

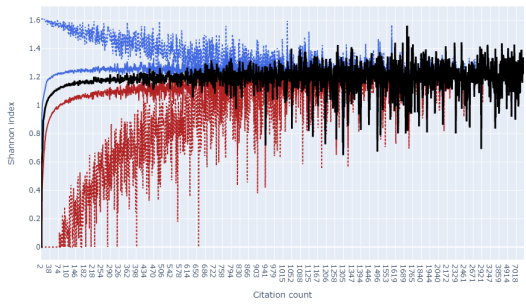


Figure: Citation count versus Shannon index of citing Regions for 2011

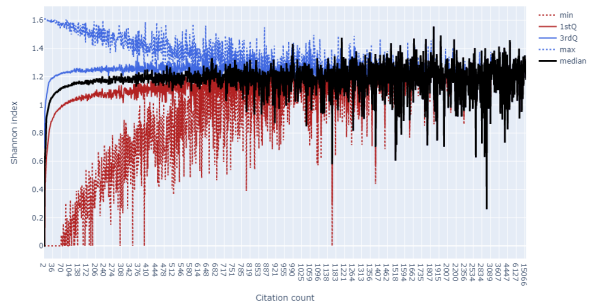


Figure: Citation count versus Shannon index of citing Regions for 2012

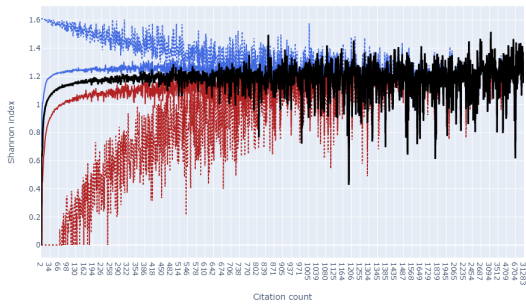


Figure: Citation count versus Shannon index of citing Regions for 2013

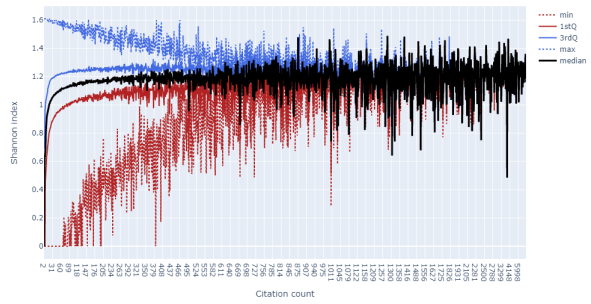


Figure: Citation count versus Shannon index of citing Regions for 2014

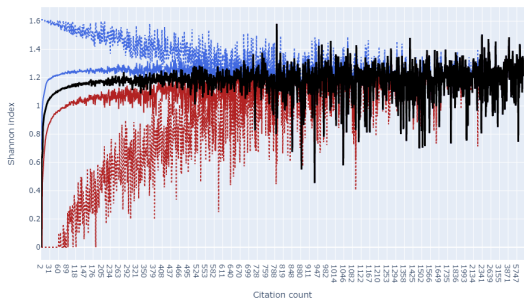


Figure: Citation count versus Shannon index of citing Regions for 2015

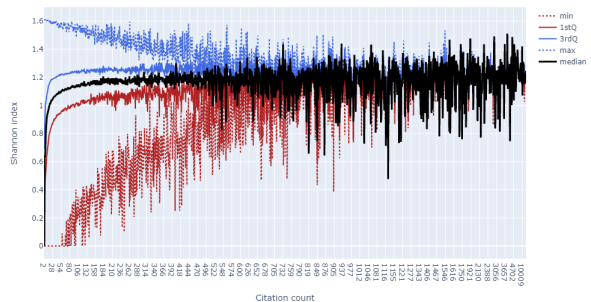


Figure: Citation count versus Shannon index of citing Regions for 2016

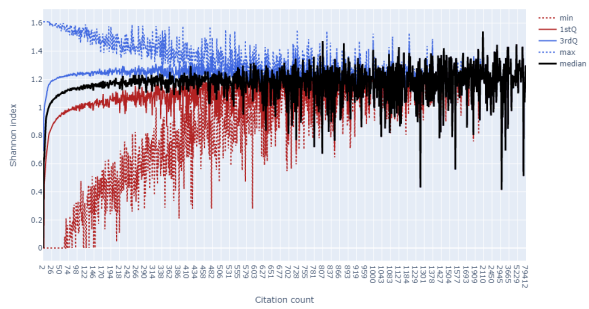


Figure: Citation count versus Shannon index of citing Regions for 2017

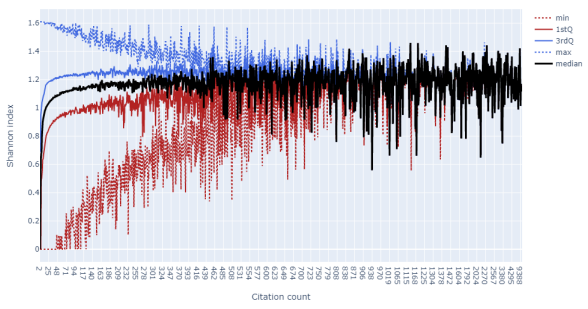


Figure: Citation count versus Shannon index of citing Regions for 2018

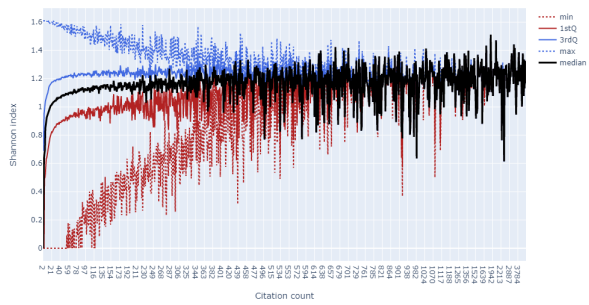
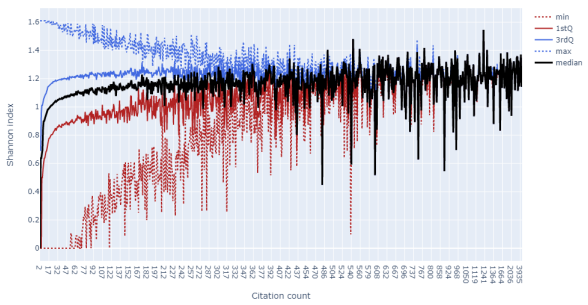


Figure: Citation count versus Shannon index of citing Regions for 2019



Section K: OA citation advantage for subregions using average citation ratios

This section explores the OA citation advantage in terms of how much more citations OA papers garner, on average, over time. The average citation ratio (i.e., percentage ratio in average citation) is calculated as the average number of citations to OA papers, divided by the average number of citations to non-OA papers, and times by one hundred. For papers affiliated to a given subregion, this percentage is calculated for all inward citations from each subregion, for each of the ten-year period. A value above 100% indicates the set of OA papers attracts more citations than the corresponding set of non-OA papers, from a specific subregion in that year.

Figure: % ratios in average citations to papers affiliated to Eastern Asia
(% ratios are calculated based on citations to OA over non-OA papers)

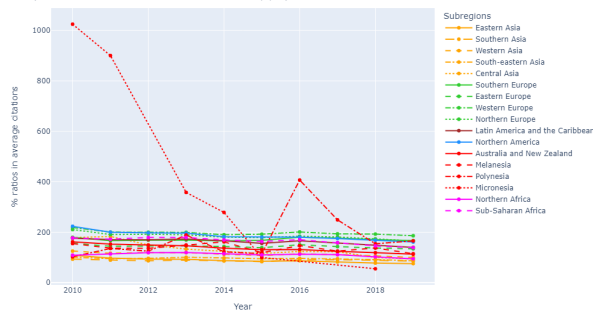


Figure: % ratios in average citations to papers affiliated to Southern Asia
(% ratios are calculated based on citations to OA over non-OA papers)

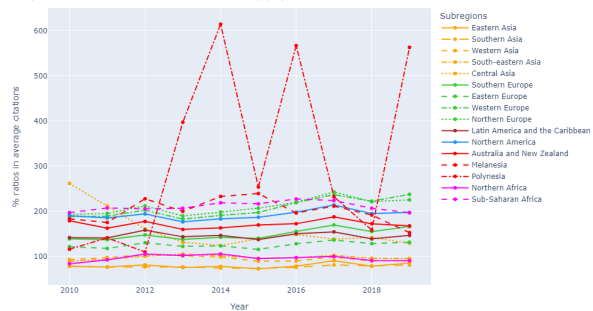


Figure: % ratios in average citations to papers affiliated to Western Asia
(% ratios are calculated based on citations to OA over non-OA papers)

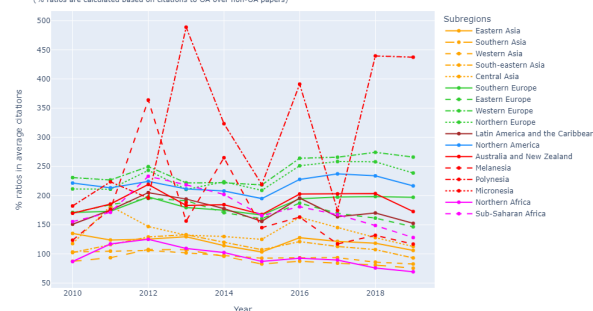


Figure: % ratios in average citations to papers affiliated to South-eastern Asia
(% ratios are calculated based on citations to OA over non-OA papers)

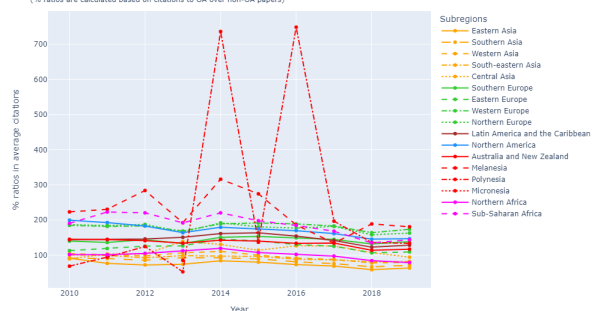


Figure: % ratios in average citations to papers affiliated to Central Asia
(% ratios are calculated based on citations to OA over non-OA papers)

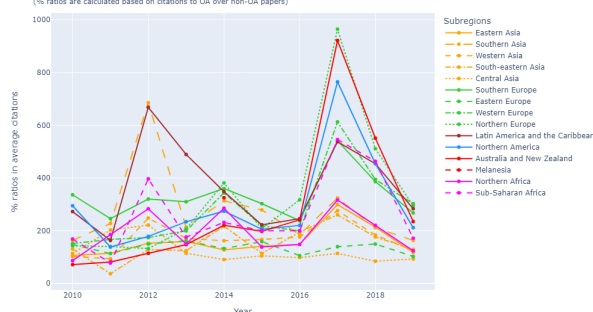


Figure: % ratios in average citations to papers affiliated to Southern Europe
(% ratios are calculated based on citations to OA over non-OA papers)

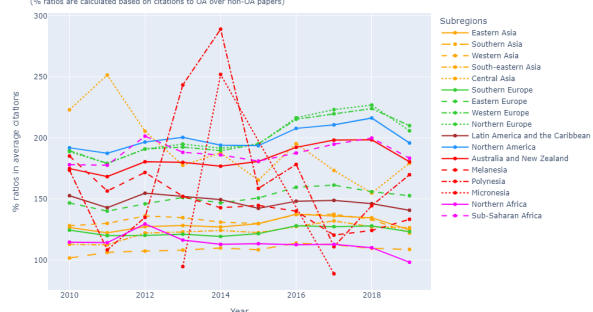


Figure: % ratios in average citations to papers affiliated to Eastern Europe
(% ratios are calculated based on citations to OA over non-OA papers)

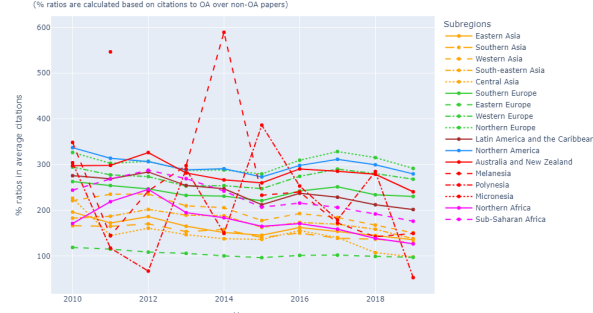


Figure: % ratios in average citations to papers affiliated to Western Europe
(% ratios are calculated based on citations to OA over non-OA papers)

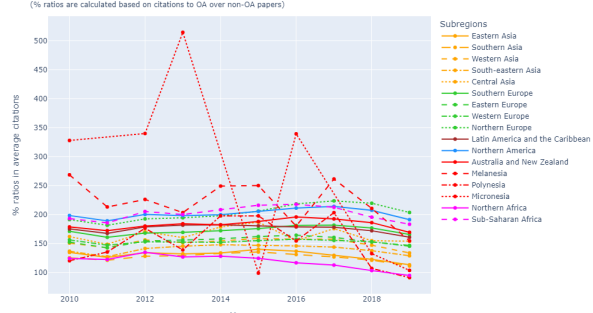


Figure: % ratios in average citations to papers affiliated to Northern Europe
(% ratios are calculated based on citations to OA over non-OA papers)

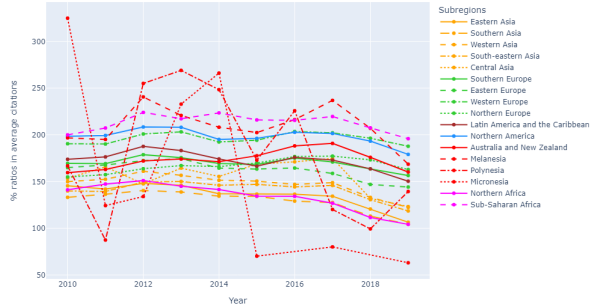


Figure: % ratios in average citations to papers affiliated to Latin America and the Caribbean
(% ratios are calculated based on citations to OA over non-OA papers)

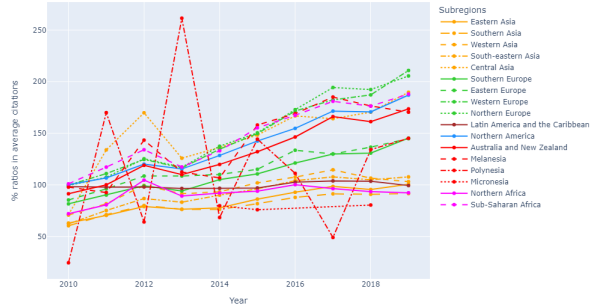


Figure: % ratios in average citations to papers affiliated to Northern America
(% ratios are calculated based on citations to OA over non-OA papers)

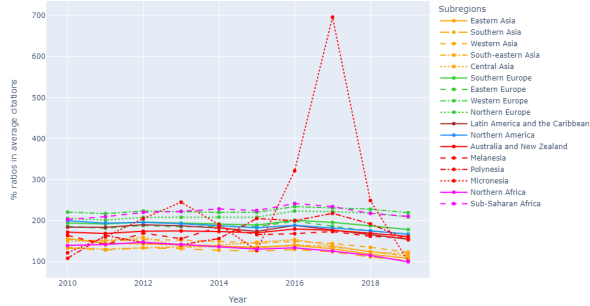


Figure: % ratios in average citations to papers affiliated to Australia and New Zealand
(% ratios are calculated based on citations to OA over non-OA papers)

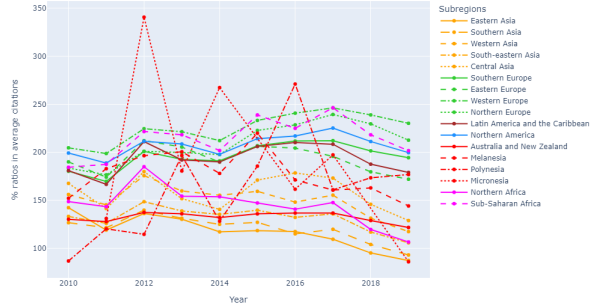


Figure: % ratios in average citations to papers affiliated to Melanesia
(% ratios are calculated based on citations to OA over non-OA papers)

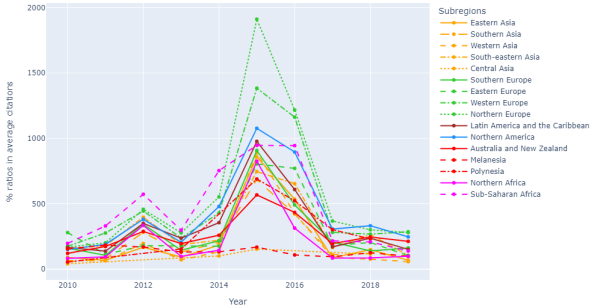


Figure: % ratios in average citations to papers affiliated to Polynesia
(% ratios are calculated based on citations to OA over non-OA papers)

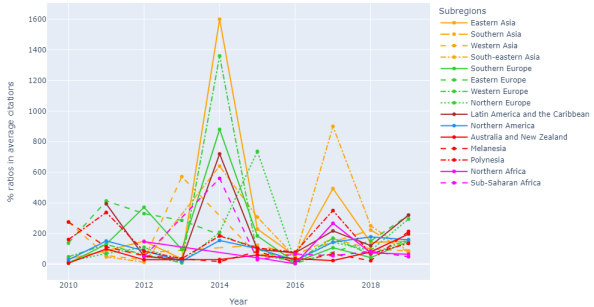


Figure: % ratios in average citations to papers affiliated to Micronesia
(% ratios are calculated based on citations to OA over non-OA papers)

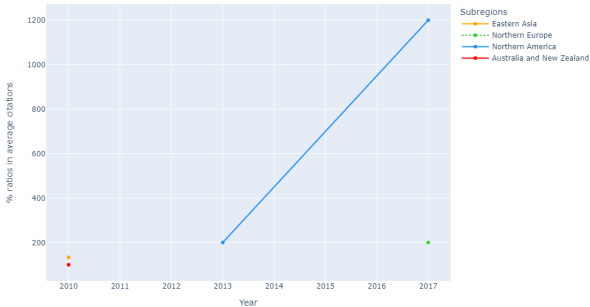


Figure: % ratios in average citations to papers affiliated to Northern Africa
(% ratios are calculated based on citations to OA over non-OA papers)

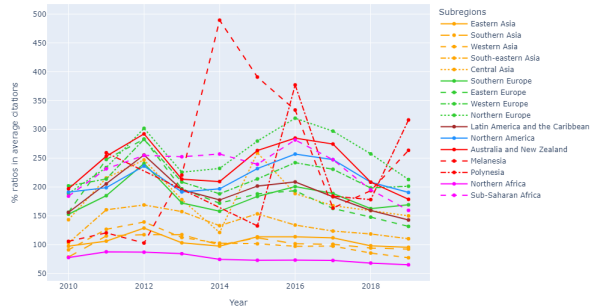
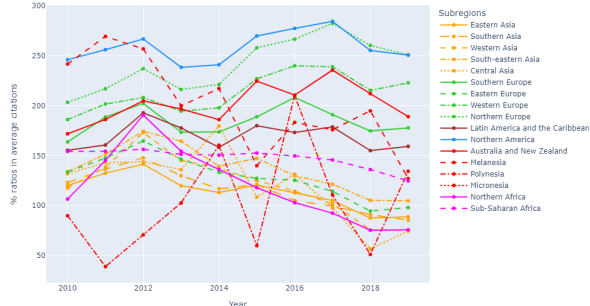


Figure: % ratios in average citations to papers affiliated to Sub-Saharan Africa
(% ratios are calculated based on citations to OA over non-OA papers)



Section L: OA citation advantage for regions using average citation ratios

Continuing from the previous section, the corresponding results for regions are presented here. Similar to the previous section, there appears to be something peculiar with papers affiliated to Asia and Asian subregions. This is potentially the result of several factors. First, our data's coverage of the Chinese language publications are relatively low as a result of using only Crossref DOIs. Secondly, Asia-affiliated papers in our data show a lower level of OA as compared to other regions.

Figure: % ratios in average citations to papers affiliated to Asia
(% ratios are calculated based on citations to OA over non-OA papers)

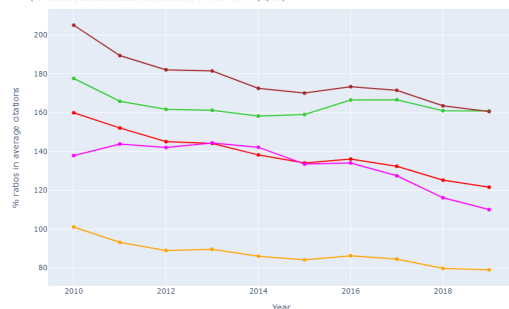


Figure: % ratios in average citations to papers affiliated to Europe
(% ratios are calculated based on citations to OA over non-OA papers)

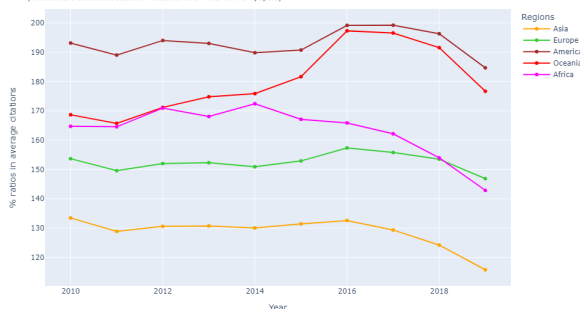


Figure: % ratios in average citations to papers affiliated to Americas
(% ratios are calculated based on citations to OA over non-OA papers)

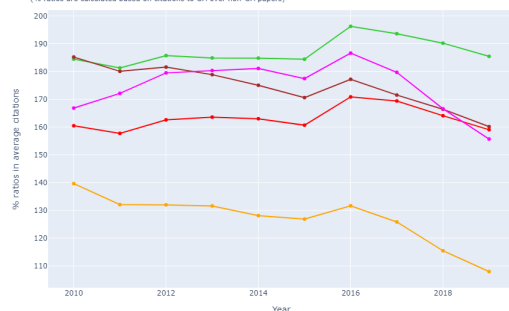


Figure: % ratios in average citations to papers affiliated to Oceania
(% ratios are calculated based on citations to OA over non-OA papers)

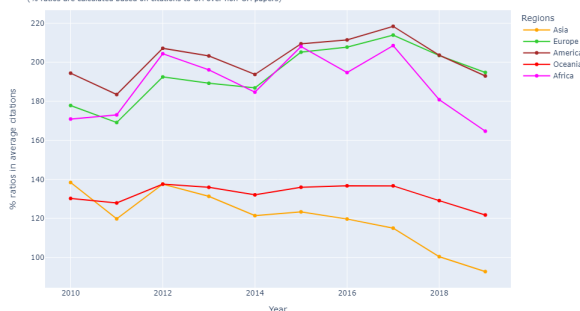
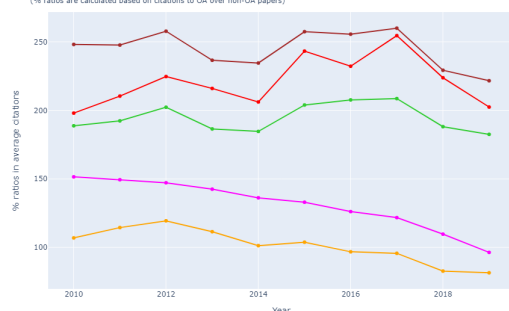


Figure: % ratios in average citations to papers affiliated to Africa
(% ratios are calculated based on citations to OA over non-OA papers)



Section M: OA citation advantage for subregions using percentage change in total citations

In this section we take an alternative look at where citations are coming from. Total citation numbers are used to calculate the percentage changes, i.e., total citations to OA papers minus total citations to non-OA papers, then divided by total citations to non-OA papers, and multiplied by one hundred. We note that the levels of OA are lower in earlier years as compared to more recent years and this has an effect on the total citation counts. As the level of OA becomes more comparable with the proportion of non-OA papers (more recent years), the effect of OA becomes far more clear. While the general trend is that most subregions benefits from received increased citations, there are subregions that benefits more than others, i.e., Northern America and Western Europe. However, there are also signals that some traditionally disadvantaged subregions benefiting greatly from OA, such as Sub-Saharan Africa.

For papers affiliated to Eastern Asia:

Figure: % change in total citations to OA/non-OA paper affiliated to Eastern Asia for 2010

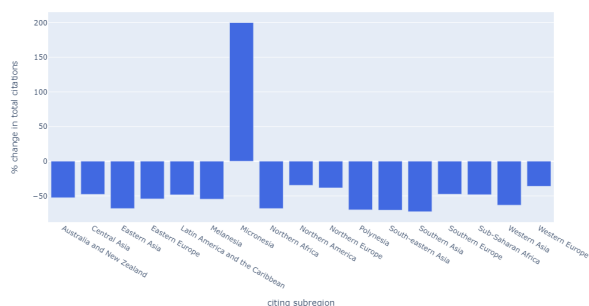


Figure: % change in total citations to OA/non-OA paper affiliated to Eastern Asia for 2011

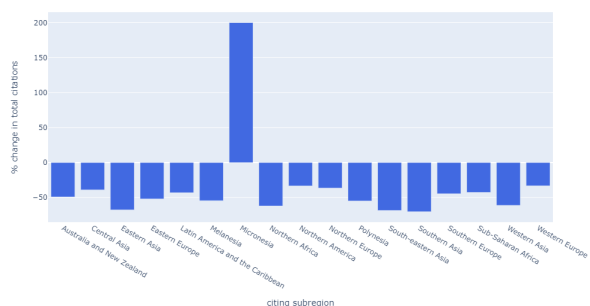


Figure: % change in total citations to OA/non-OA paper affiliated to Eastern Asia for 2012

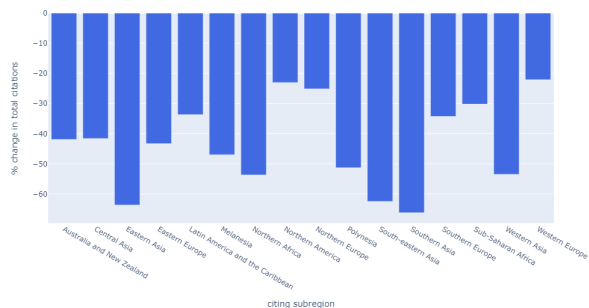


Figure: % change in total citations to OA/non-OA paper affiliated to Eastern Asia for 2013

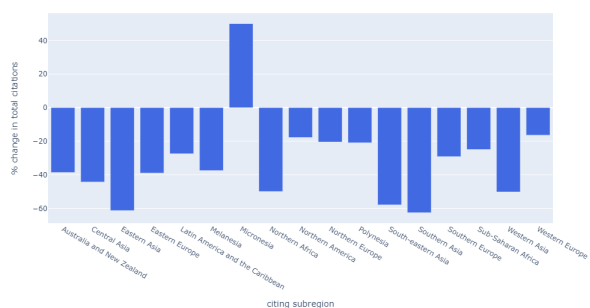


Figure: % change in total citations to OA/non-OA paper affiliated to Eastern Asia for 2014

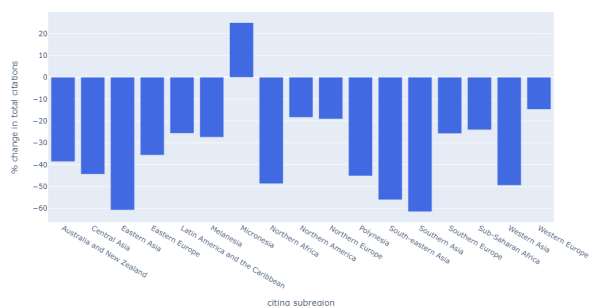


Figure: % change in total citations to OA/non-OA paper affiliated to Eastern Asia for 2015

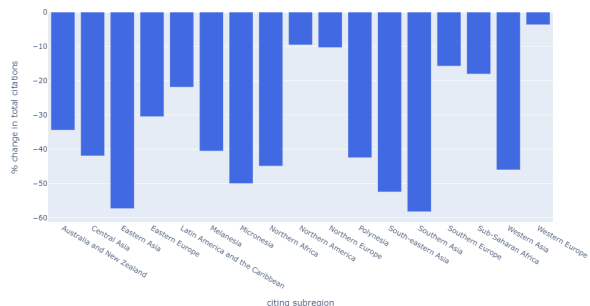


Figure: % change in total citations to OA/non-OA paper affiliated to Eastern Asia for 2016

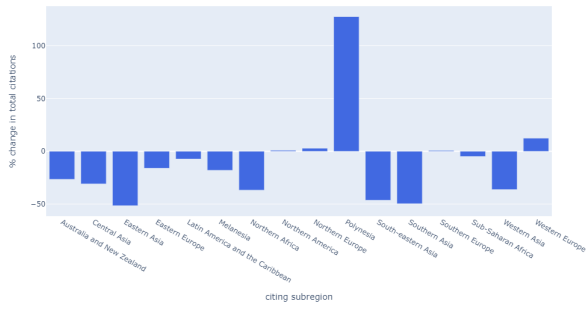


Figure: % change in total citations to OA/non-OA paper affiliated to Eastern Asia for 2017

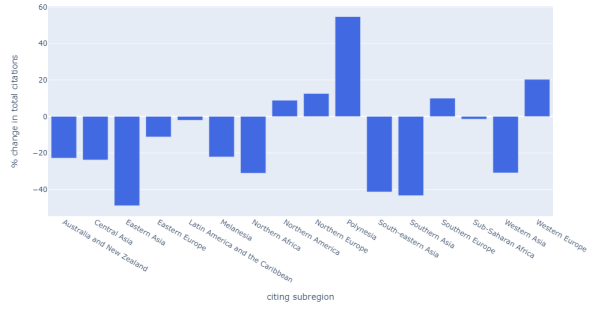


Figure: % change in total citations to OA/non-OA paper affiliated to Eastern Asia for 2018

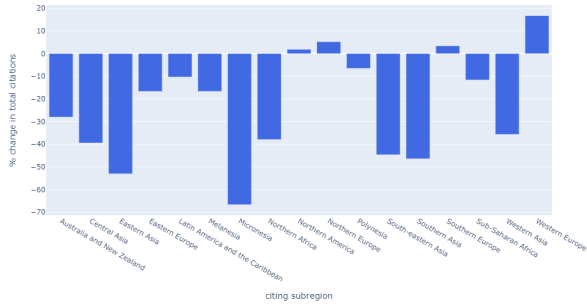
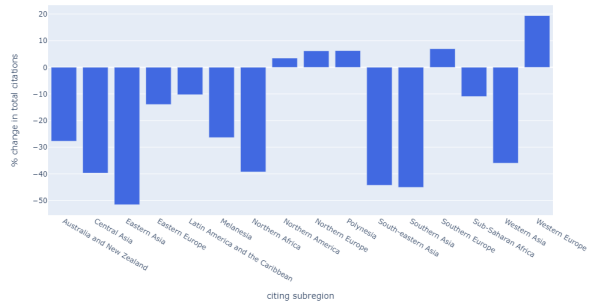


Figure: % change in total citations to OA/non-OA paper affiliated to Eastern Asia for 2019



For papers affiliated to Southern Asia:

Figure: % change in total citations to OA/non-OA paper affiliated to Southern Asia for 2010

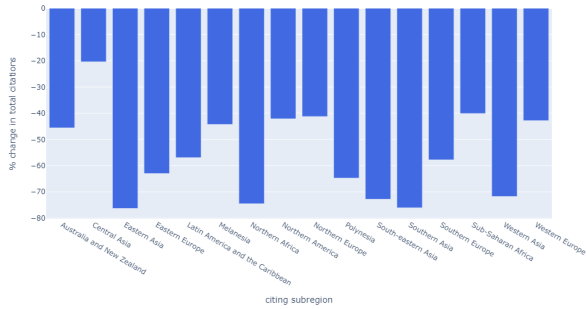


Figure: % change in total citations to OA/non-OA paper affiliated to Southern Asia for 2011

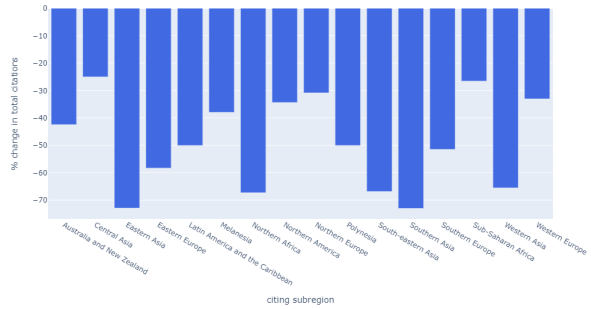


Figure: % change in total citations to OA/non-OA paper affiliated to Southern Asia for 2012

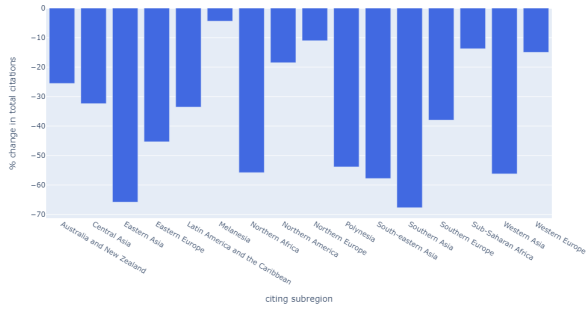


Figure: % change in total citations to OA/non-OA paper affiliated to Southern Asia for 2013

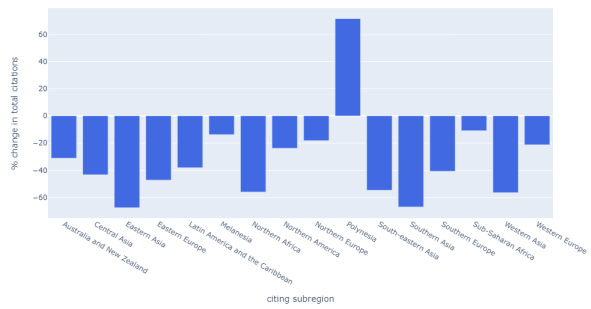


Figure: % change in total citations to OA/non-OA paper affiliated to Southern Asia for 2014

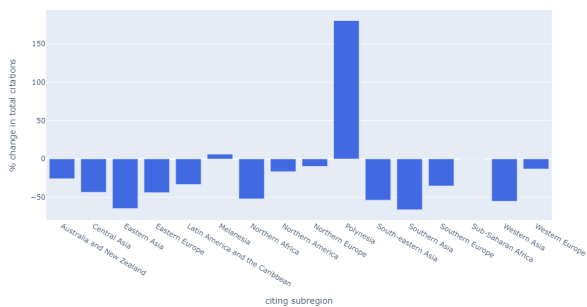


Figure: % change in total citations to OA/non-OA paper affiliated to Southern Asia for 2015

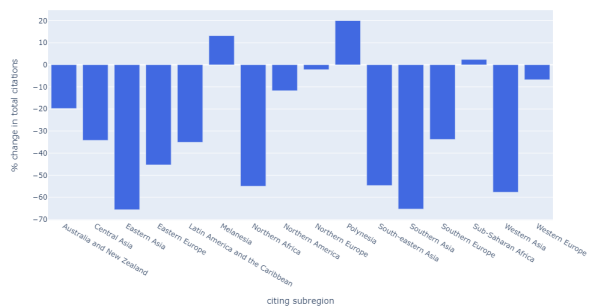


Figure: % change in total citations to OA/non-OA paper affiliated to Southern Asia for 2016

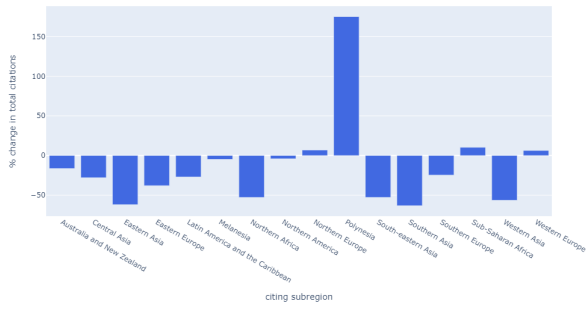


Figure: % change in total citations to OA/non-OA paper affiliated to Southern Asia for 2017

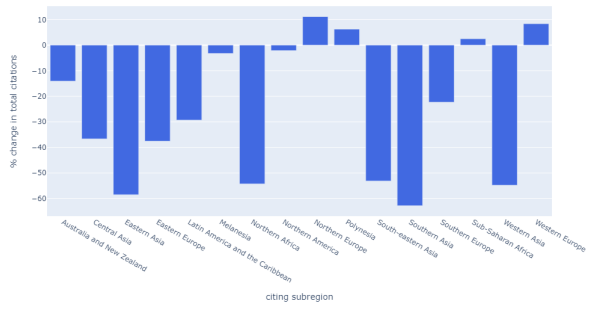


Figure: % change in total citations to OA/non-OA paper affiliated to Southern Asia for 2018

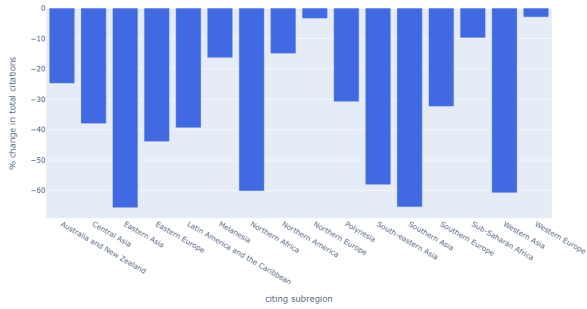
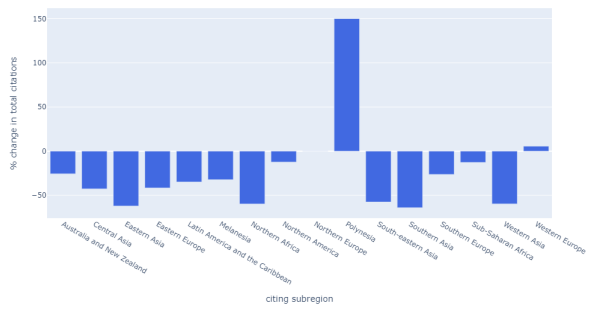


Figure: % change in total citations to OA/non-OA paper affiliated to Southern Asia for 2019



For papers affiliated to Western Asia:

Figure: % change in total citations to OA/non-OA paper affiliated to Western Asia for 2010

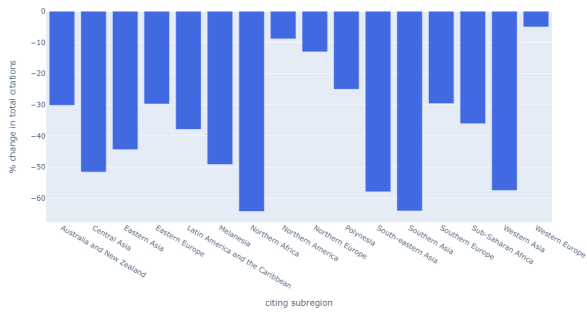


Figure: % change in total citations to OA/non-OA paper affiliated to Western Asia for 2011

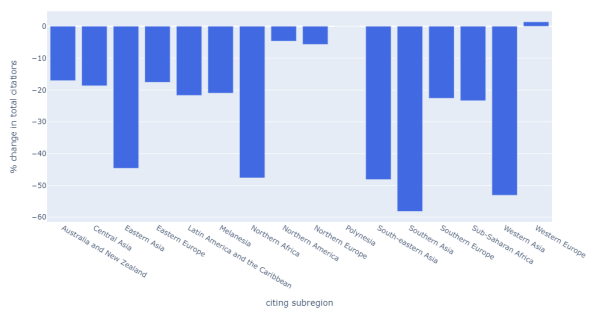


Figure: % change in total citations to OA/non-OA paper affiliated to Western Asia for 2012

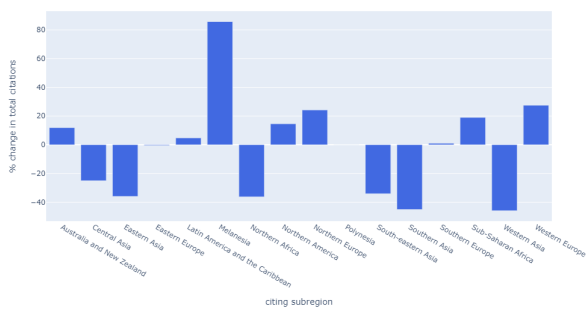


Figure: % change in total citations to OA/non-OA paper affiliated to Western Asia for 2013

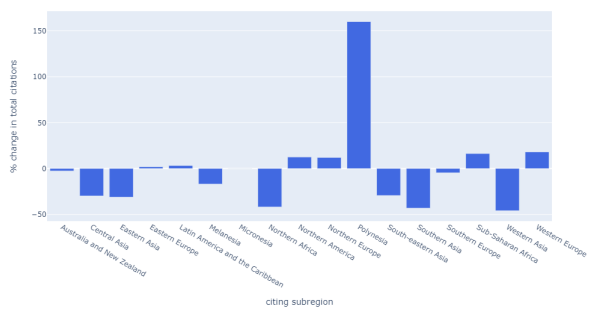


Figure: % change in total citations to OA/non-OA paper affiliated to Western Asia for 2014

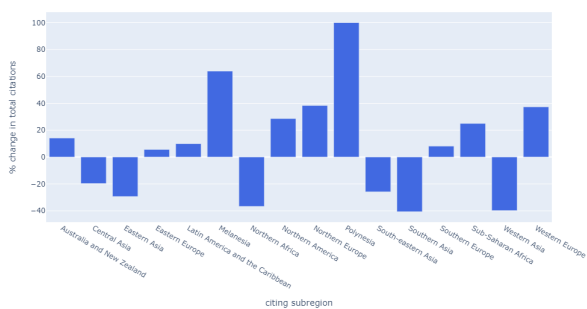


Figure: % change in total citations to OA/non-OA paper affiliated to Western Asia for 2015

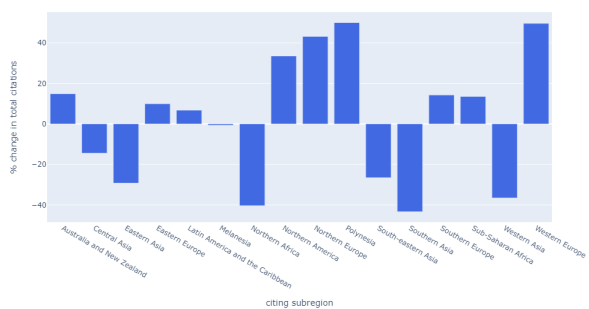


Figure: % change in total citations to OA/non-OA paper affiliated to Western Asia for 2016

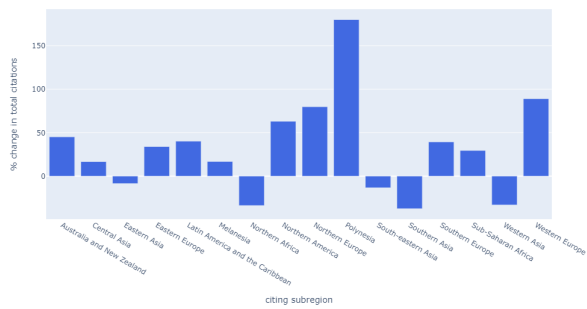


Figure: % change in total citations to OA/non-OA paper affiliated to Western Asia for 2017

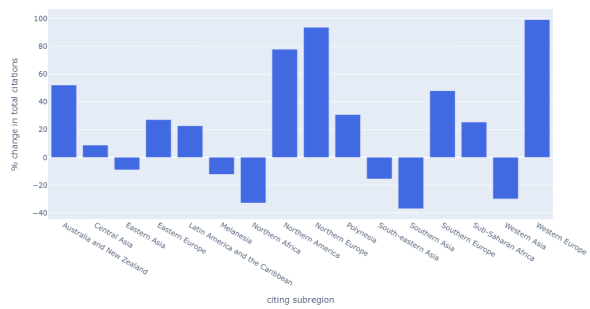


Figure: % change in total citations to OA/non-OA paper affiliated to Western Asia for 2018

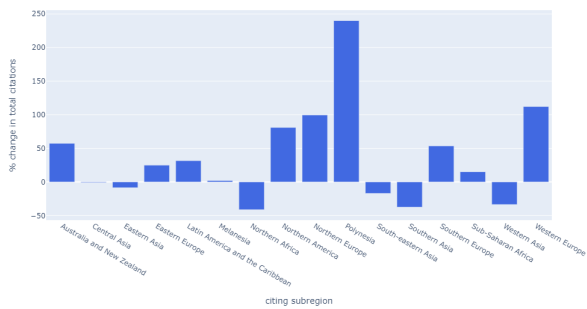
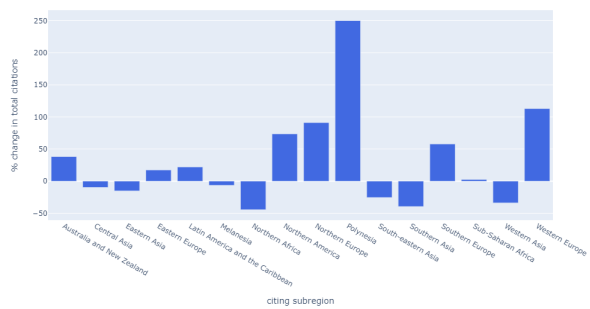


Figure: % change in total citations to OA/non-OA paper affiliated to Western Asia for 2019



For papers affiliated to South-eastern Asia:

Figure: % change in total citations to OA/non-OA paper affiliated to South-eastern Asia for 2010

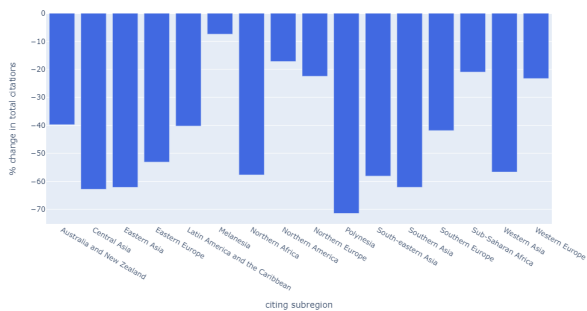


Figure: % change in total citations to OA/non-OA paper affiliated to South-eastern Asia for 2011

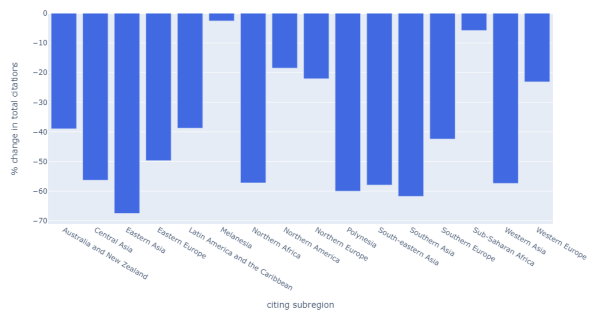


Figure: % change in total citations to OA/non-OA paper affiliated to South-eastern Asia for 2012

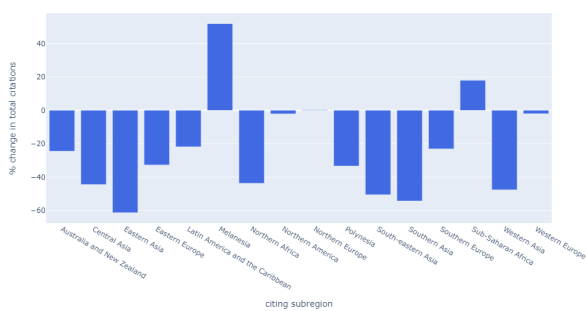


Figure: % change in total citations to OA/non-OA paper affiliated to South-eastern Asia for 2013

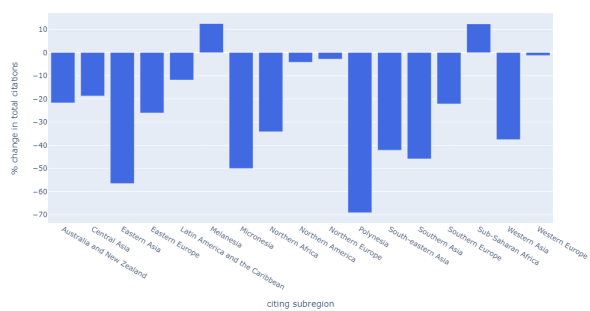


Figure: % change in total citations to OA/non-OA paper affiliated to South-eastern Asia for 2014

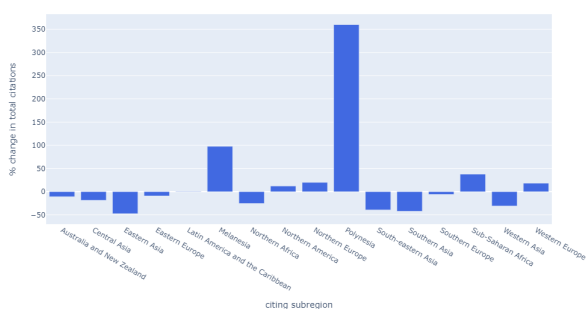


Figure: % change in total citations to OA/non-OA paper affiliated to South-eastern Asia for 2015

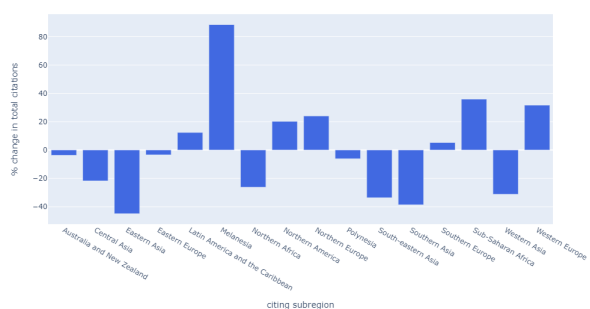


Figure: % change in total citations to OA/non-OA paper affiliated to South-eastern Asia for 2016

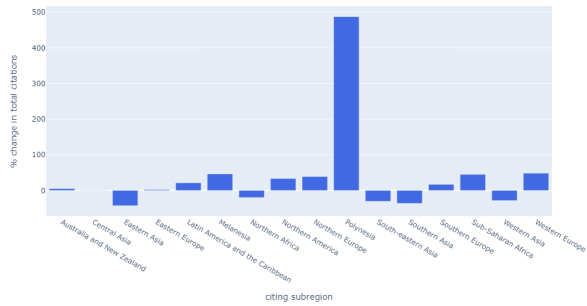


Figure: % change in total citations to OA/non-OA paper affiliated to South-eastern Asia for 2017

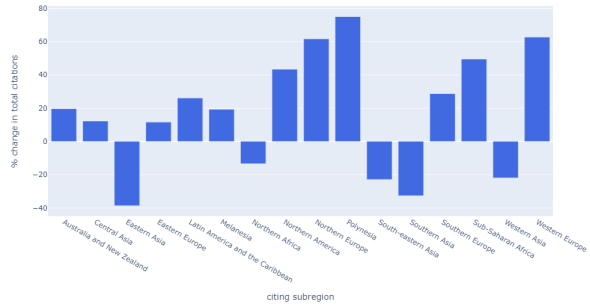


Figure: % change in total citations to OA/non-OA paper affiliated to South-eastern Asia for 2018

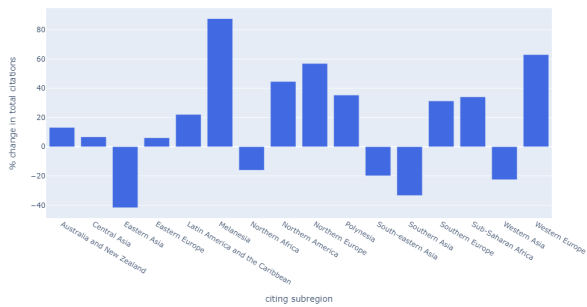
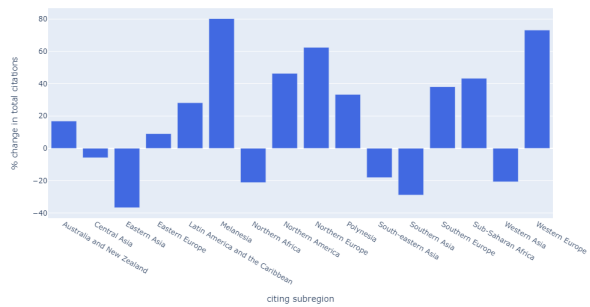


Figure: % change in total citations to OA/non-OA paper affiliated to South-eastern Asia for 2019



For papers affiliated to Central Asia:

Figure: % change in total citations to OA/non-OA paper affiliated to Central Asia for 2010

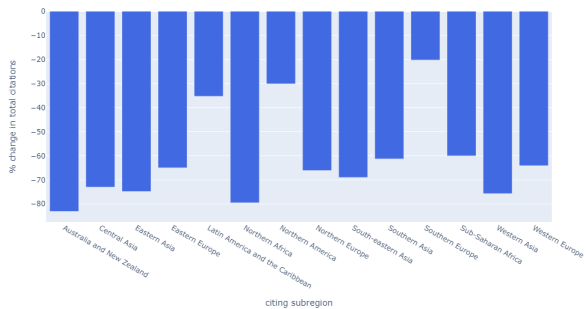


Figure: % change in total citations to OA/non-OA paper affiliated to Central Asia for 2011

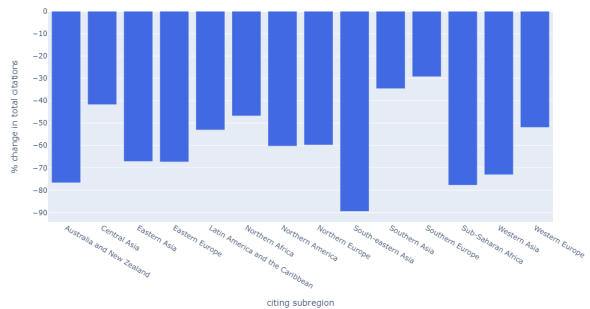


Figure: % change in total citations to OA/non-OA paper affiliated to Central Asia for 2012

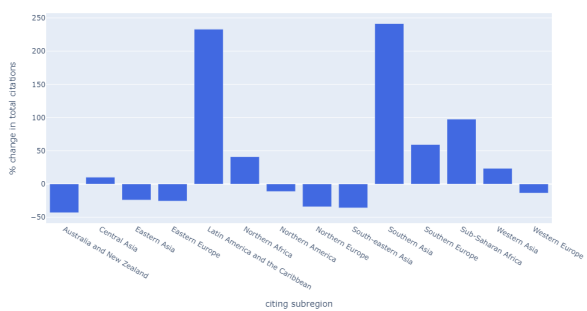


Figure: % change in total citations to OA/non-OA paper affiliated to Central Asia for 2013

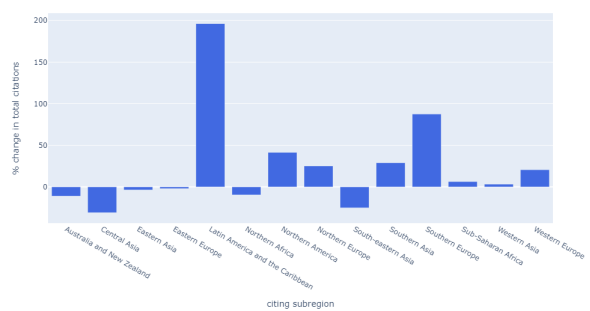


Figure: % change in total citations to OA/non-OA paper affiliated to Central Asia for 2014

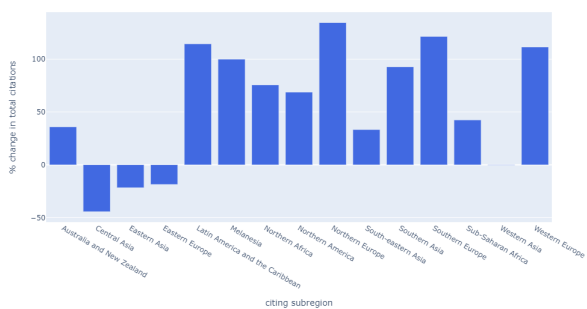


Figure: % change in total citations to OA/non-OA paper affiliated to Central Asia for 2015

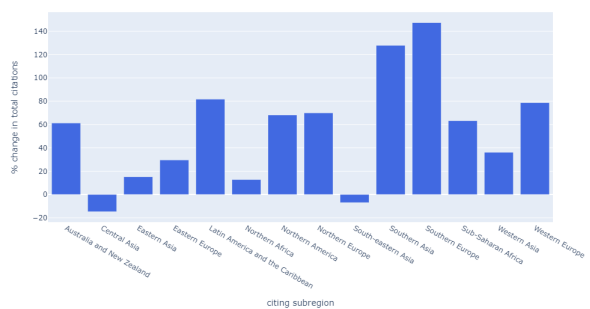


Figure: % change in total citations to OA/non-OA paper affiliated to Central Asia for 2016

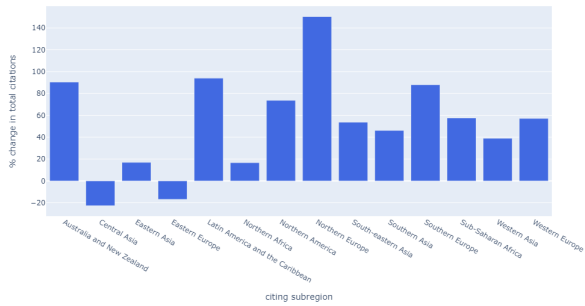


Figure: % change in total citations to OA/non-OA paper affiliated to Central Asia for 2017

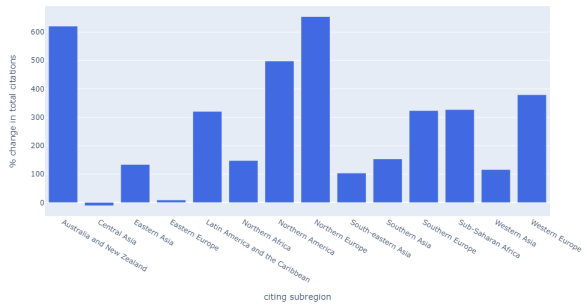


Figure: % change in total citations to OA/non-OA paper affiliated to Central Asia for 2018

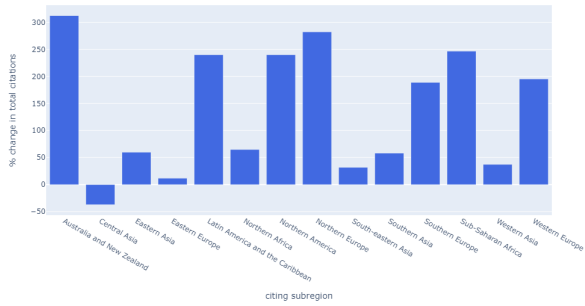
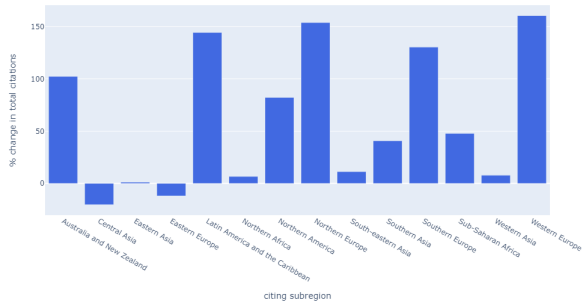


Figure: % change in total citations to OA/non-OA paper affiliated to Central Asia for 2019



For papers affiliated to Southern Europe:

Figure: % change in total citations to OA/non-OA paper affiliated to Southern Europe for 2010

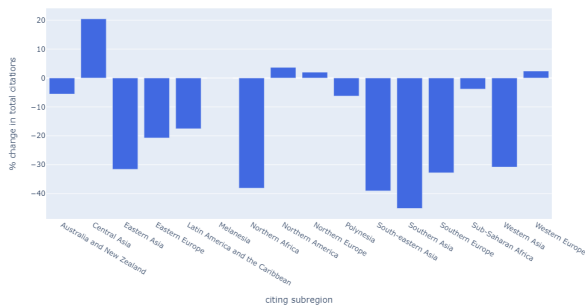


Figure: % change in total citations to OA/non-OA paper affiliated to Southern Europe for 2011

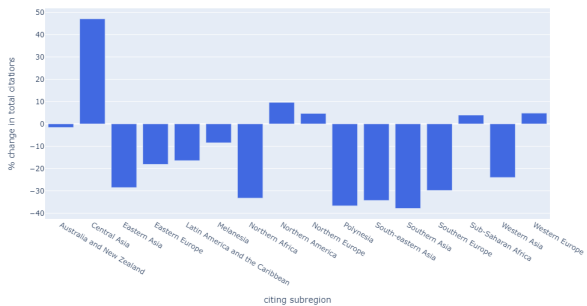


Figure: % change in total citations to OA/non-OA paper affiliated to Southern Europe for 2012

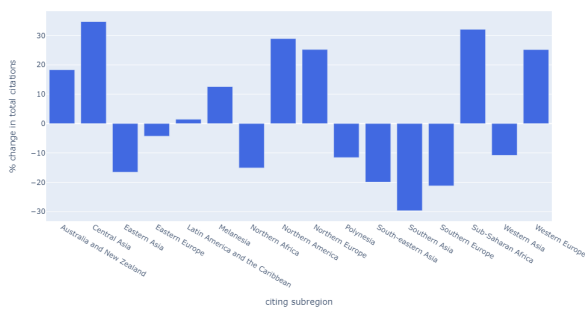


Figure: % change in total citations to OA/non-OA paper affiliated to Southern Europe for 2013

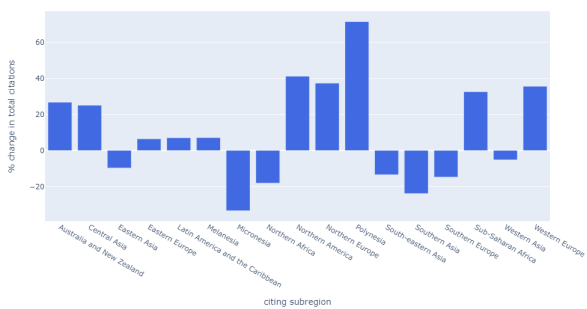


Figure: % change in total citations to OA/non-OA paper affiliated to Southern Europe for 2014

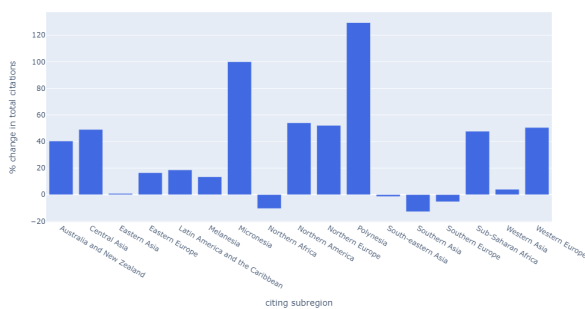


Figure: % change in total citations to OA/non-OA paper affiliated to Southern Europe for 2015

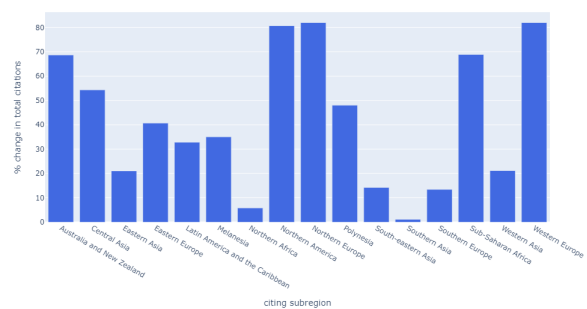


Figure: % change in total citations to OA/non-OA paper affiliated to Southern Europe for 2016

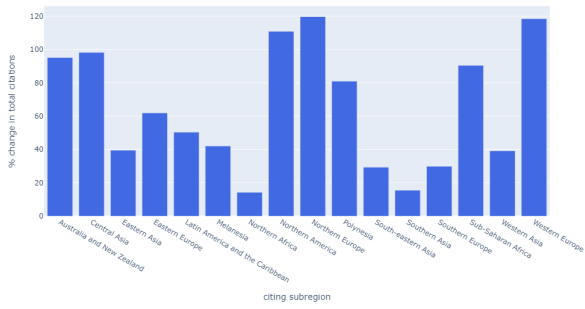


Figure: % change in total citations to OA/non-OA paper affiliated to Southern Europe for 2017

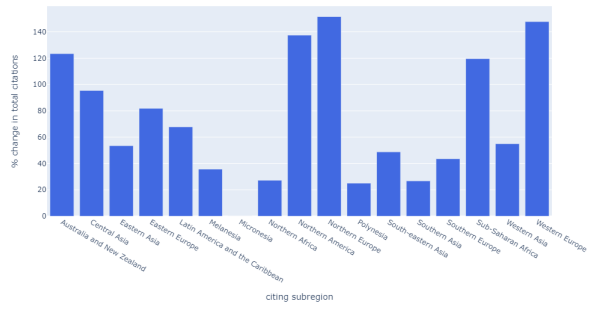


Figure: % change in total citations to OA/non-OA paper affiliated to Southern Europe for 2018

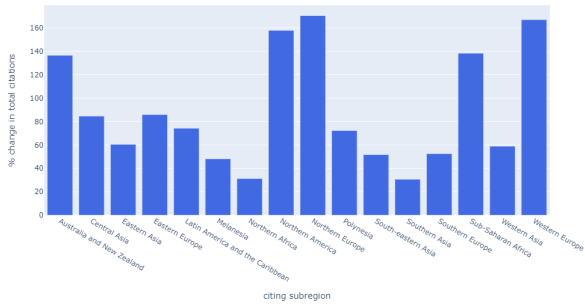
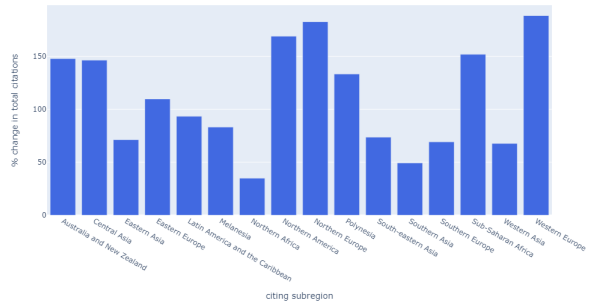


Figure: % change in total citations to OA/non-OA paper affiliated to Southern Europe for 2019



For papers affiliated to Eastern Europe:

Figure: % change in total citations to OA/non-OA paper affiliated to Eastern Europe for 2010

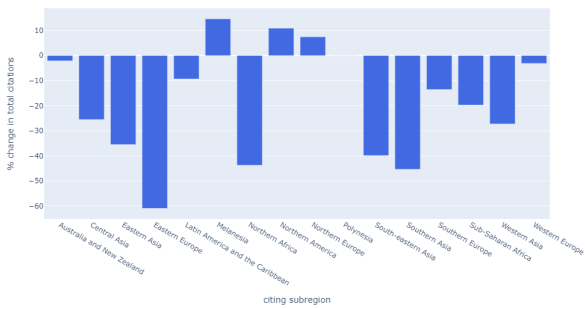


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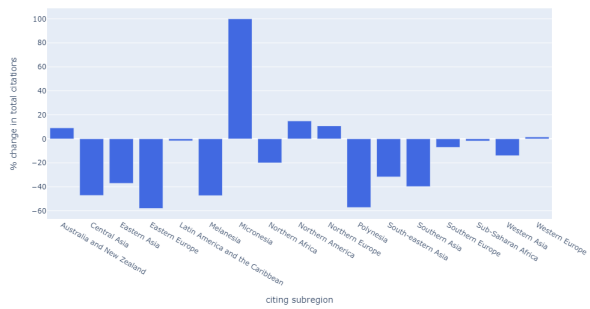


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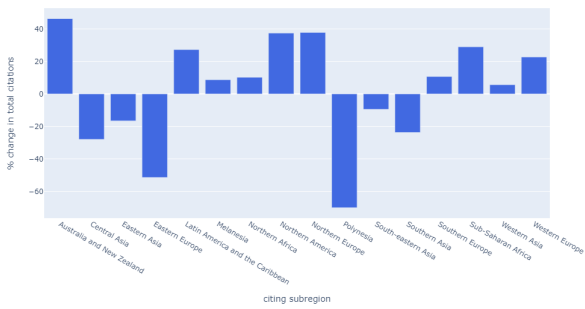


Figure: % change in total citations to OA/non-OA paper affiliated to Eastern Europe for 2013

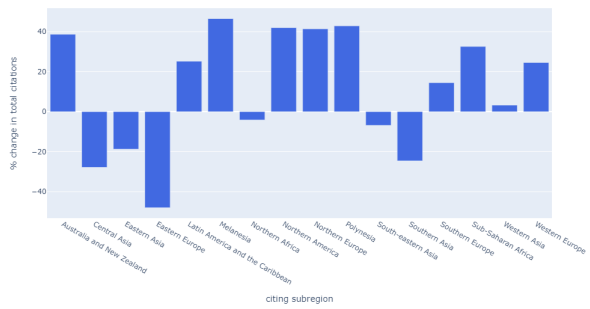


Figure: % change in total citations to OA/non-OA paper affiliated to Eastern Europe for 2014

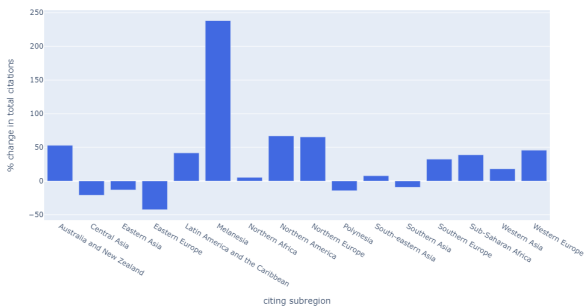


Figure: % change in total citations to OA/non-OA paper affiliated to Eastern Europe for 2015

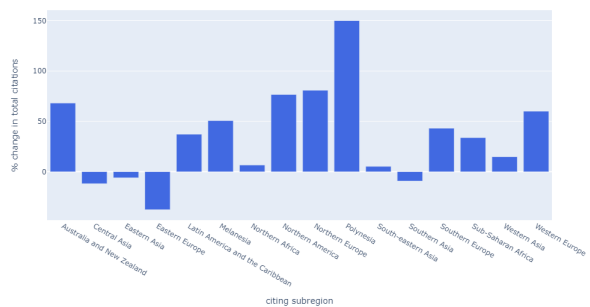


Figure: % change in total citations to OA/non-OA paper affiliated to Eastern Europe for 2016

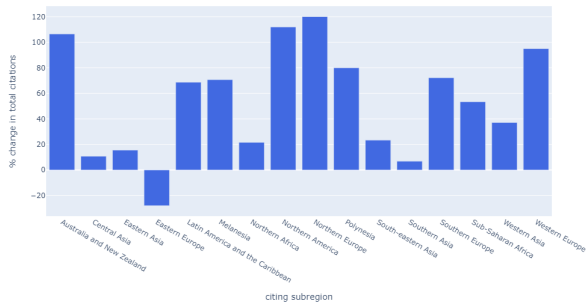


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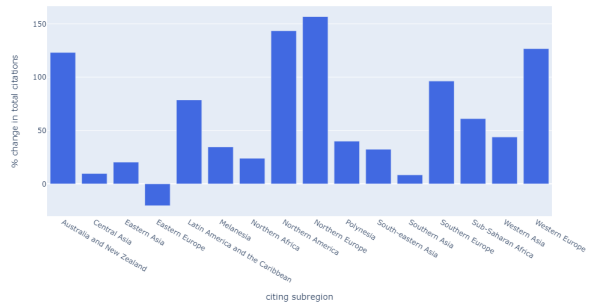


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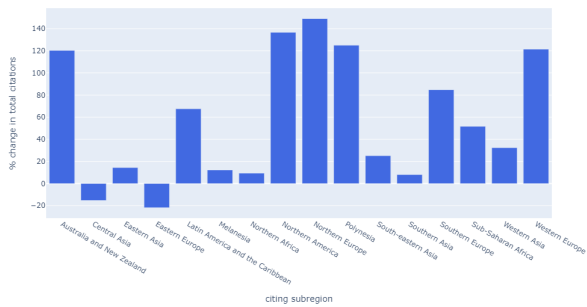
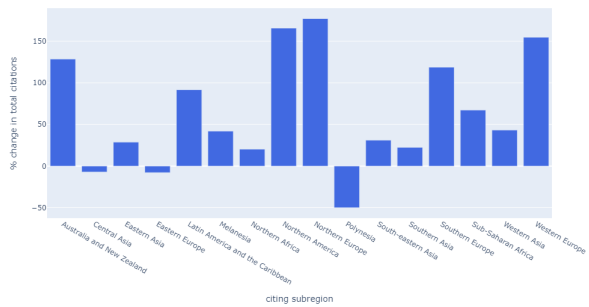


Figure: % change in total citations to OA/non-OA paper affiliated to Eastern Europe for 2019



For papers affiliated to Western Europe:

Figure: % change in total citations to OA/non-OA paper affiliated to Western Europe for 2010

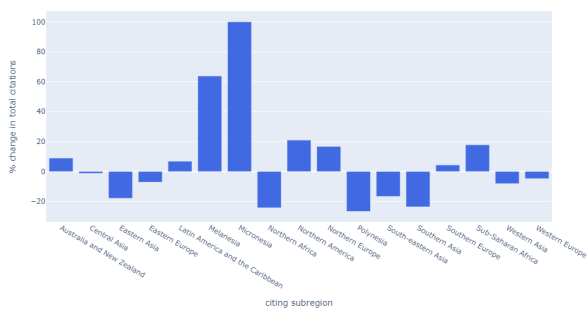


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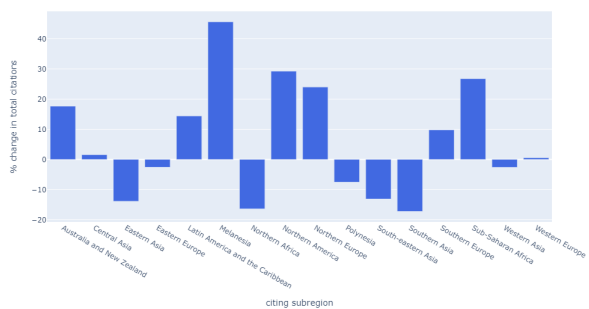


Figure: % change in total citations to OA/non-OA paper affiliated to Western Europe for 2012

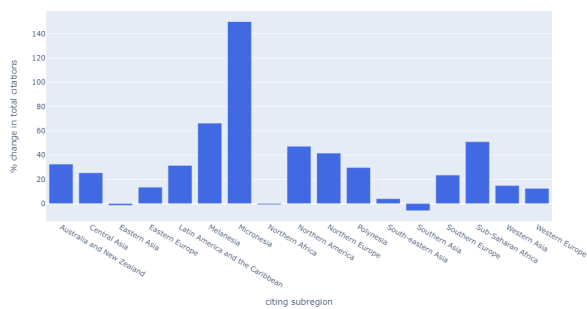


Figure: % change in total citations to OA/non-OA paper affiliated to Western Europe for 2013

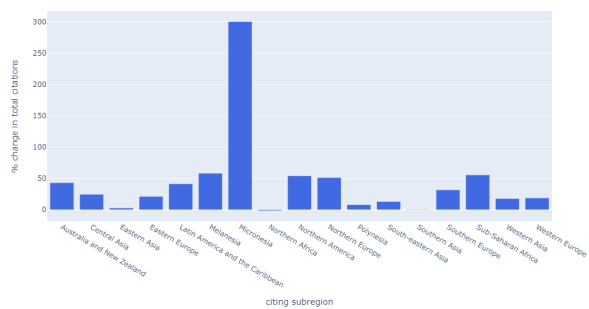


Figure: % change in total citations to OA/non-OA paper affiliated to Western Europe for 2014

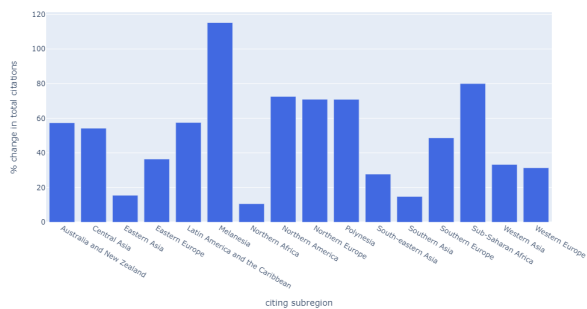


Figure: % change in total citations to OA/non-OA paper affiliated to Western Europe for 2015

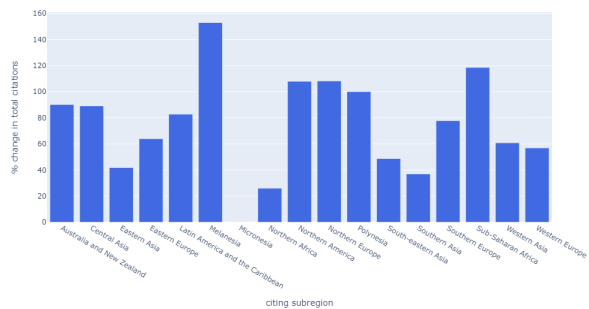


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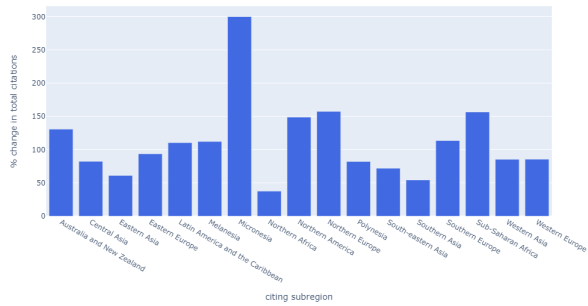


Figure: % change in total citations to OA/non-OA paper affiliated to Western Europe for 2017

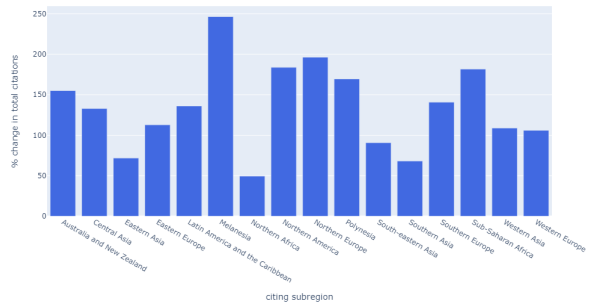


Figure: % change in total citations to OA/non-OA paper affiliated to Western Europe for 2018

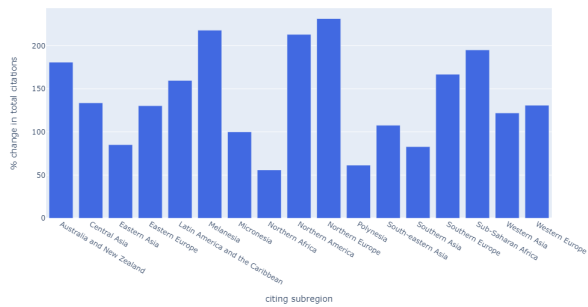
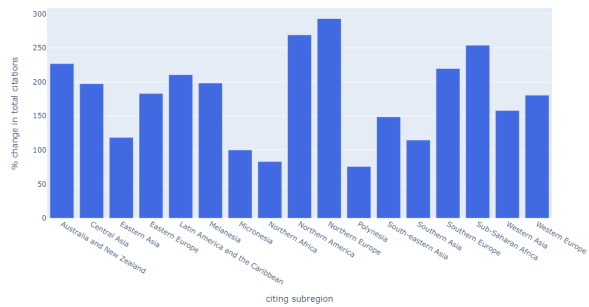


Figure: % change in total citations to OA/non-OA paper affiliated to Western Europe for 2019



For papers affiliated to Northern Europe:

Figure: % change in total citations to OA/non-OA paper affiliated to Northern Europe for 2010

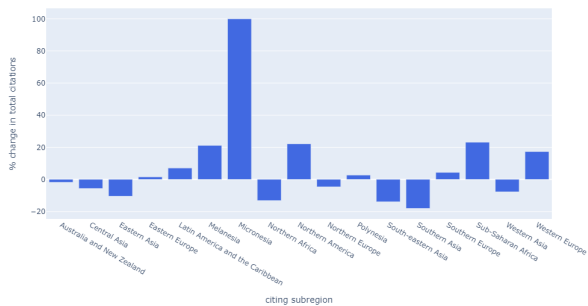


Figure: % change in total citations to OA/non-OA paper affiliated to Northern Europe for 2011



Figure: % change in total citations to OA/non-OA paper affiliated to Northern Europe for 2012

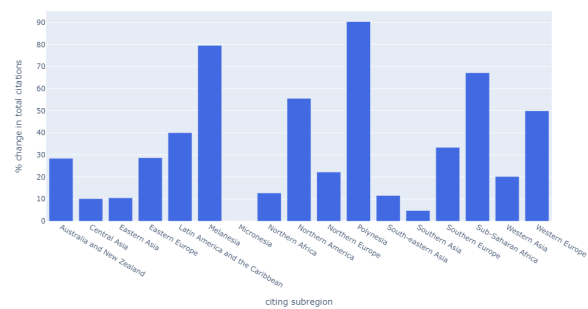


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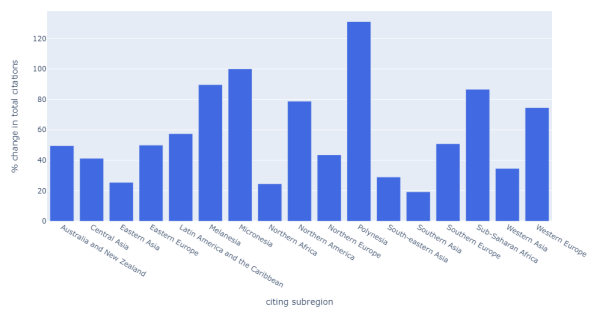


Figure: % change in total citations to OA/non-OA paper affiliated to Northern Europe for 2014

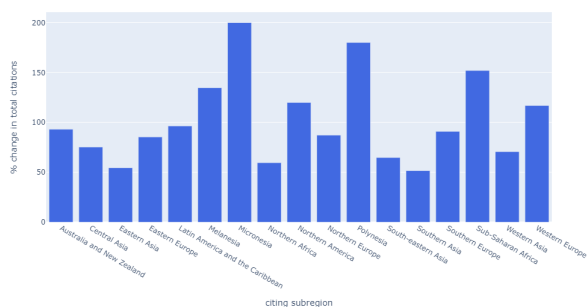


Figure: % change in total citations to OA/non-OA paper affiliated to Northern Europe for 2015

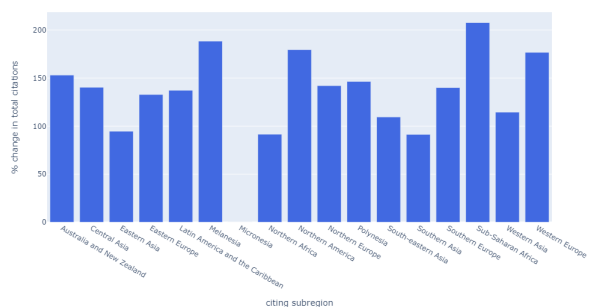


Figure: % change in total citations to OA/non-OA paper affiliated to Northern Europe for 2016

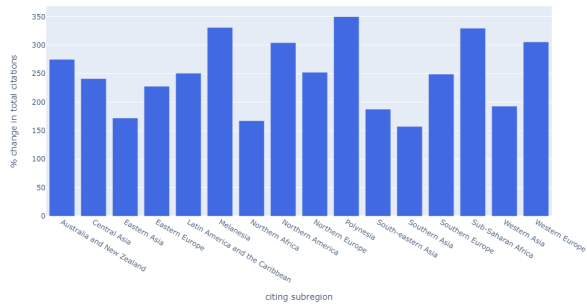


Figure: % change in total citations to OA/non-OA paper affiliated to Northern Europe for 2017

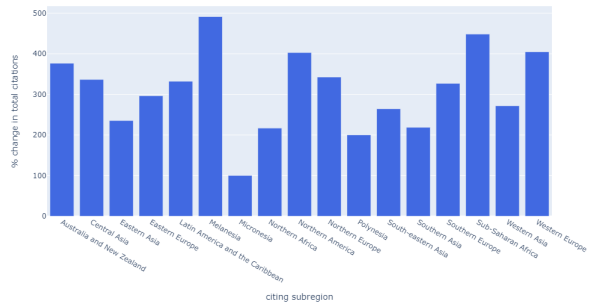


Figure: % change in total citations to OA/non-OA paper affiliated to Northern Europe for 2018

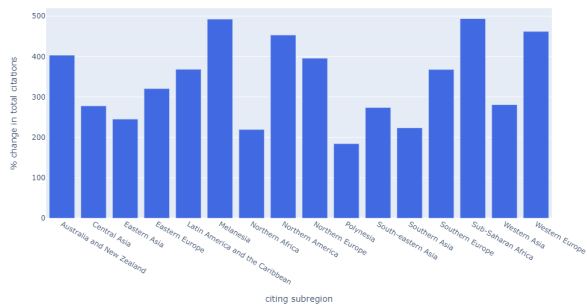
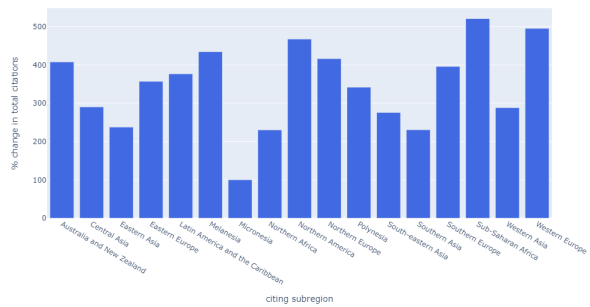


Figure: % change in total citations to OA/non-OA paper affiliated to Northern Europe for 2019



For papers affiliated to Latin America and the Caribbean:

Figure: % change in total citations to OA/non-OA paper affiliated to Latin America and the Caribbean for 2010

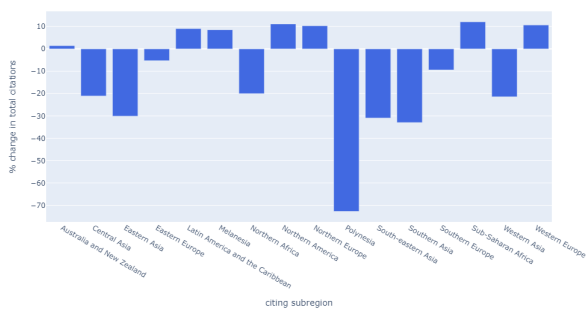


Figure: % change in total citations to OA/non-OA paper affiliated to Latin America and the Caribbean for 2011

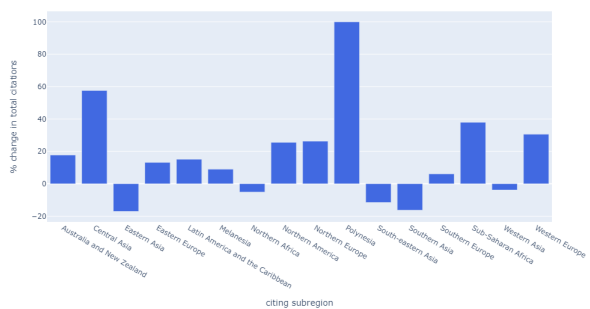


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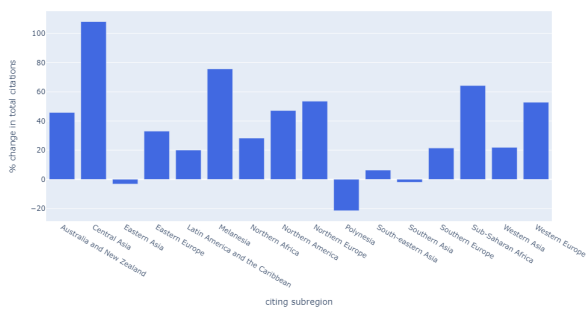


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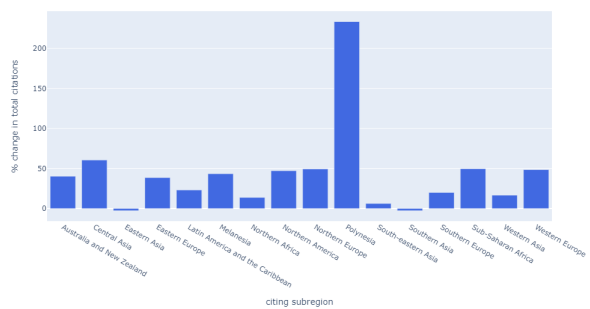


Figure: % change in total citations to OA/non-OA paper affiliated to Latin America and the Caribbean for 2014

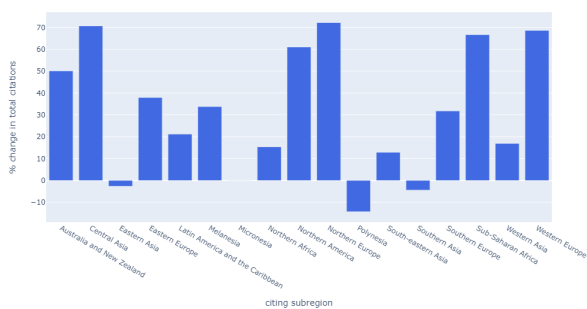


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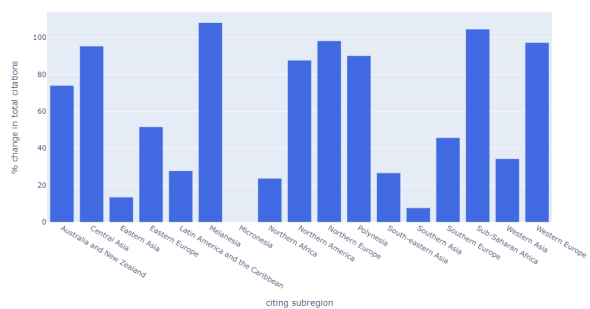


Figure: % change in total citations to OA/non-OA paper affiliated to Latin America and the Caribbean for 2016

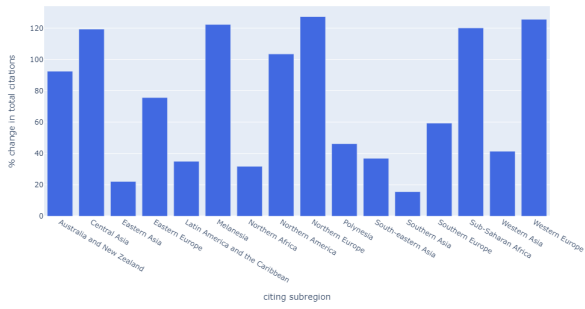


Figure: % change in total citations to OA/non-OA paper affiliated to Latin America and the Caribbean for 2017

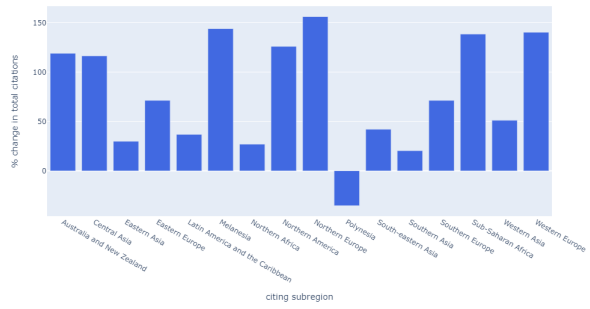


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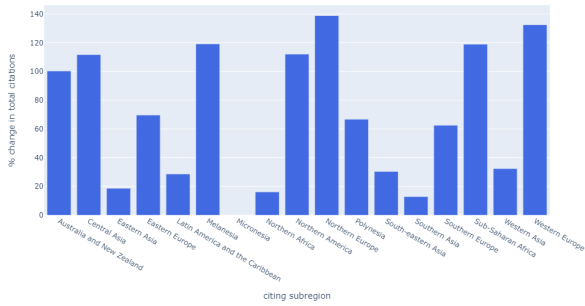
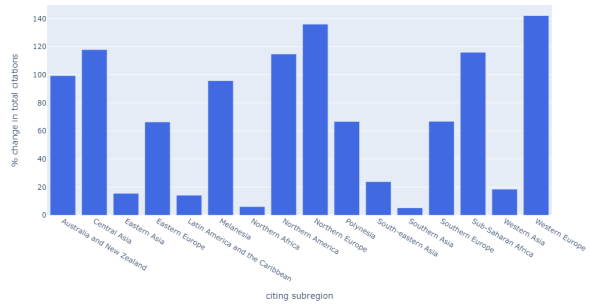


Figure: % change in total citations to OA/non-OA paper affiliated to Latin America and the Caribbean for 2019



For papers affiliated to Northern America:

Figure: % change in total citations to OA/non-OA paper affiliated to Northern America for 2010

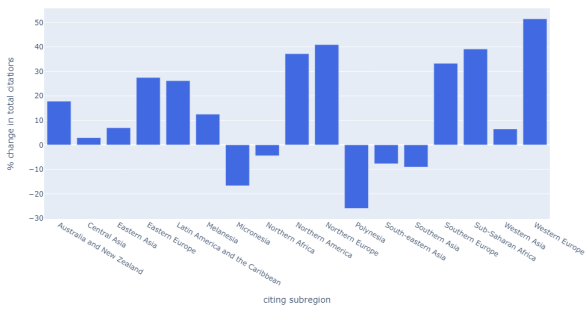


Figure: % change in total citations to OA/non-OA paper affiliated to Northern America for 2011

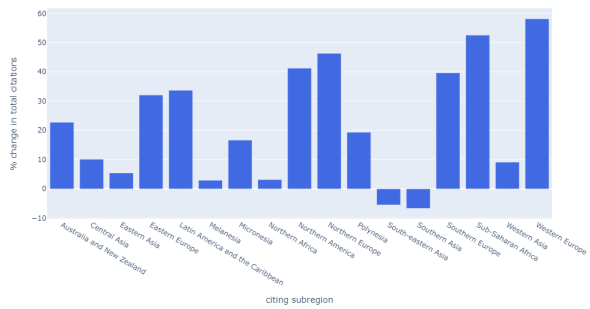


Figure: % change in total citations to OA/non-OA paper affiliated to Northern America for 2012

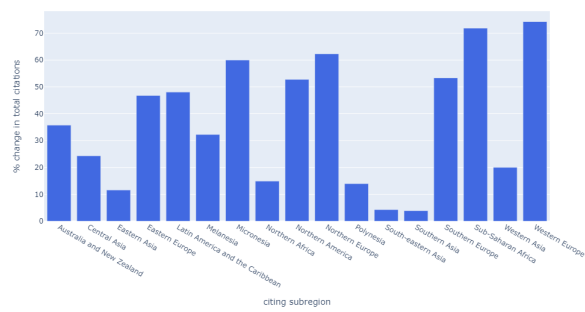


Figure: % change in total citations to OA/non-OA paper affiliated to Northern America for 2013

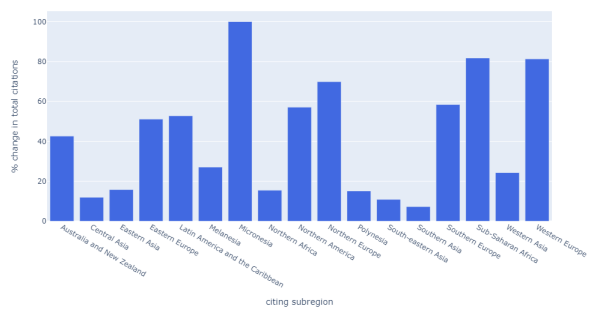


Figure: % change in total citations to OA/non-OA paper affiliated to Northern America for 2014

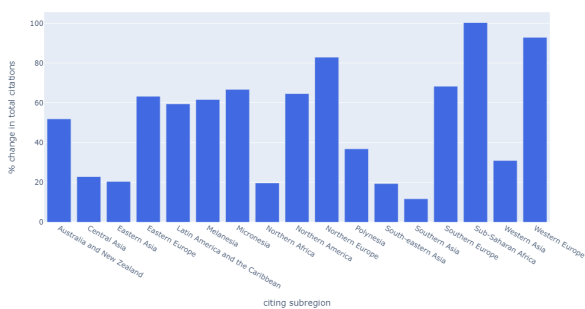


Figure: % change in total citations to OA/non-OA paper affiliated to Northern America for 2015

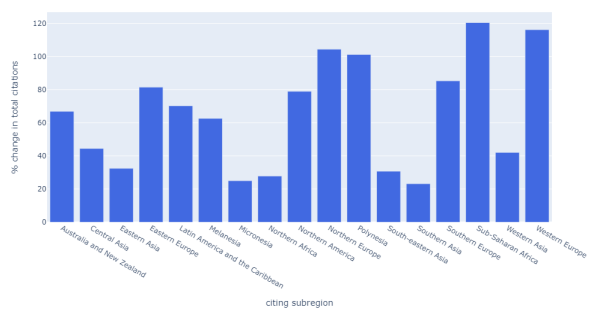


Figure: % change in total citations to OA/non-OA paper affiliated to Northern America for 2016

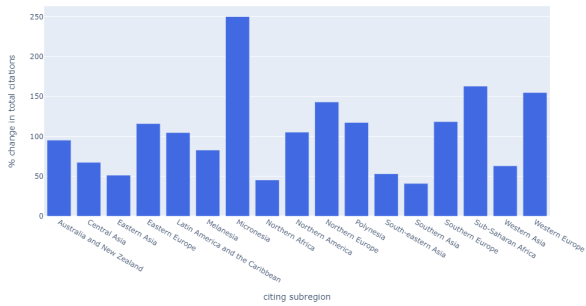


Figure: % change in total citations to OA/non-OA paper affiliated to Northern America for 2017

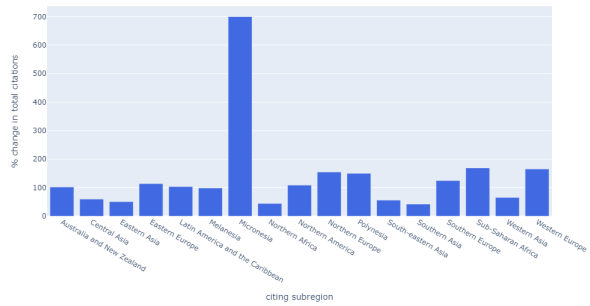


Figure: % change in total citations to OA/non-OA paper affiliated to Northern America for 2018

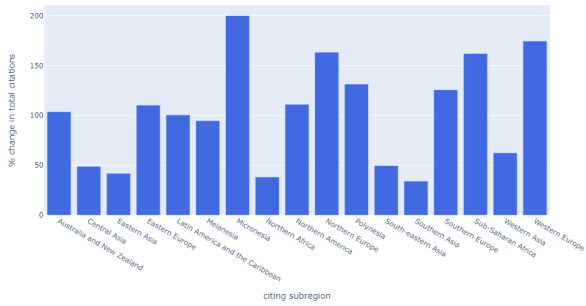
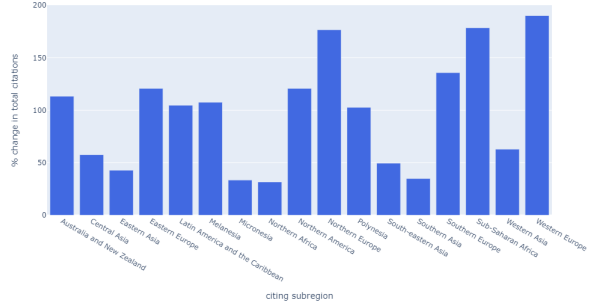


Figure: % change in total citations to OA/non-OA paper affiliated to Northern America for 2019



For papers affiliated to Australia and New Zealand:

Figure: % change in total citations to OA/non-OA paper affiliated to Australia and New Zealand for 2010

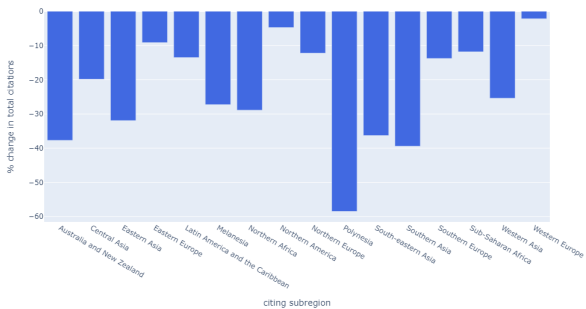


Figure: % change in total citations to OA/non-OA paper affiliated to Australia and New Zealand for 2011

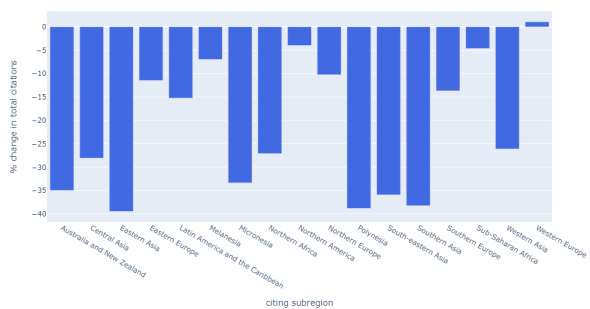


Figure: % change in total citations to OA/non-OA paper affiliated to Australia and New Zealand for 2012

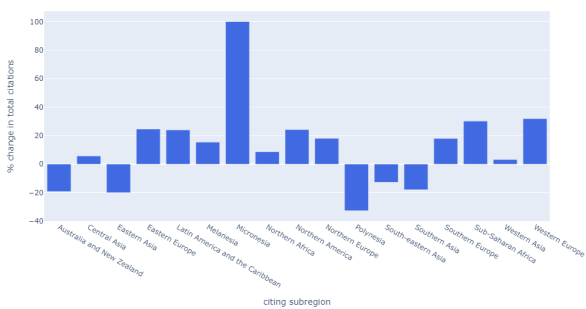


Figure: % change in total citations to OA/non-OA paper affiliated to Australia and New Zealand for 2013

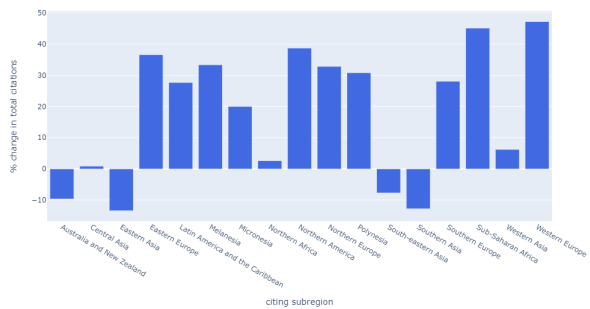


Figure: % change in total citations to OA/non-OA paper affiliated to Australia and New Zealand for 2014

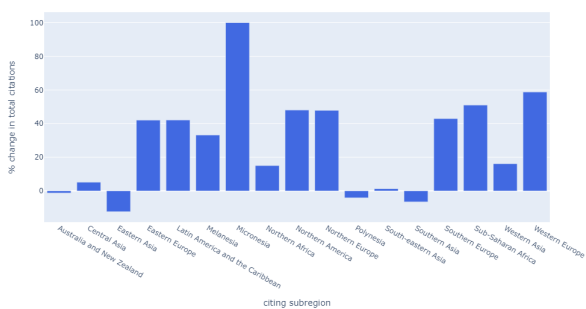


Figure: % change in total citations to OA/non-OA paper affiliated to Australia and New Zealand for 2015

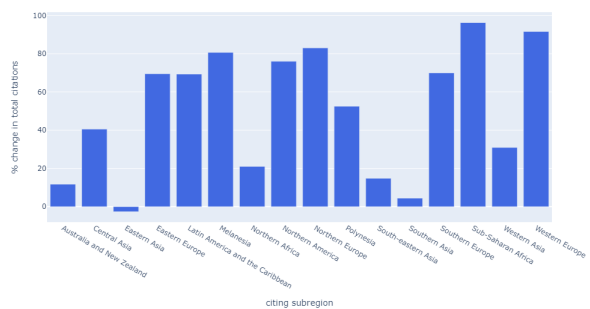


Figure: % change in total citations to OA/non-OA paper affiliated to Australia and New Zealand for 2016

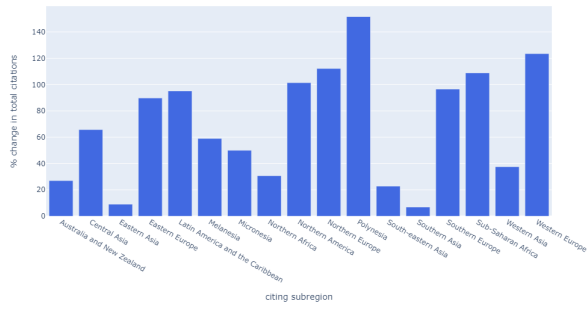


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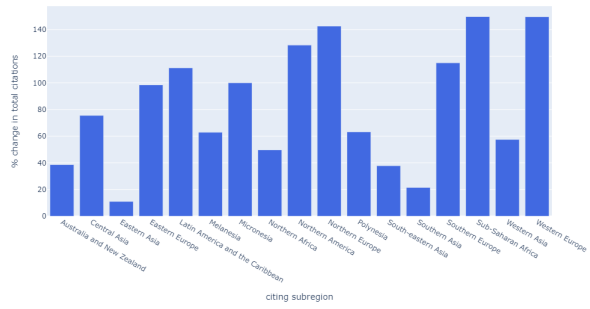


Figure: % change in total citations to OA/non-OA paper affiliated to Australia and New Zealand for 2018

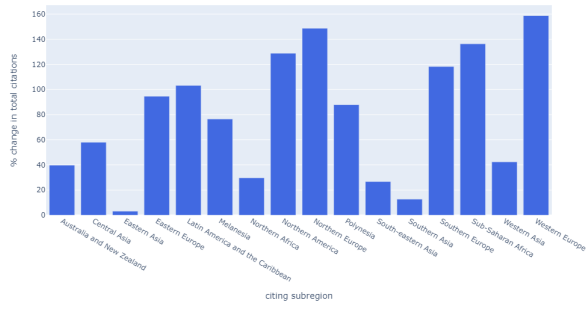
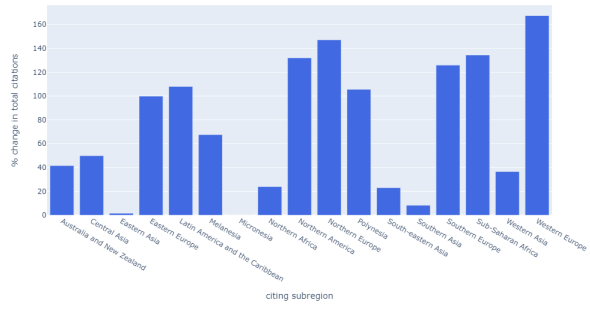


Figure: % change in total citations to OA/non-OA paper affiliated to Australia and New Zealand for 2019



For papers affiliated to Melanesia:

Figure: % change in total citations to OA/non-OA paper affiliated to Melanesia for 2010

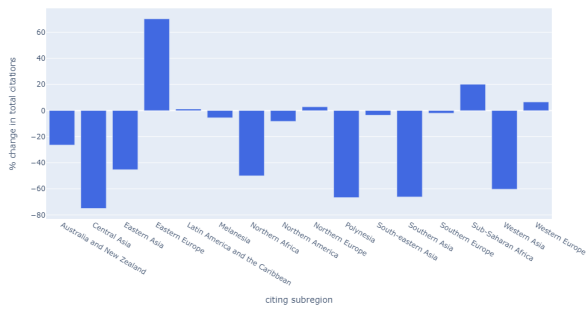


Figure: % change in total citations to OA/non-OA paper affiliated to Melanesia for 2011

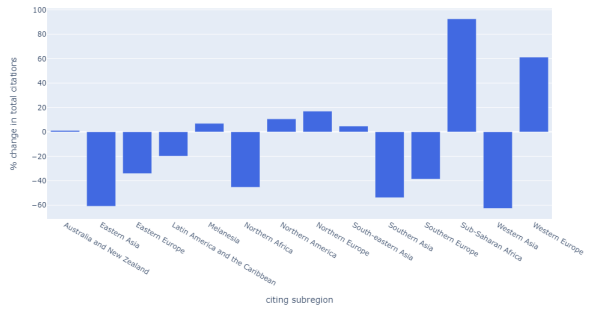


Figure: % change in total citations to OA/non-OA paper affiliated to Melanesia for 2012

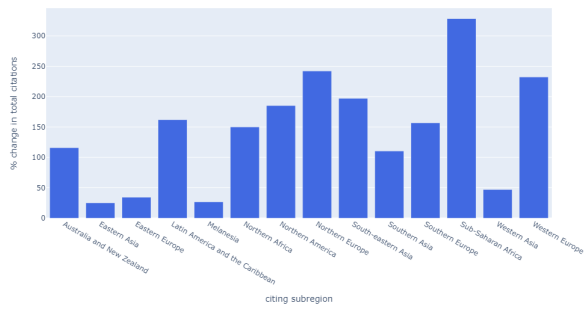


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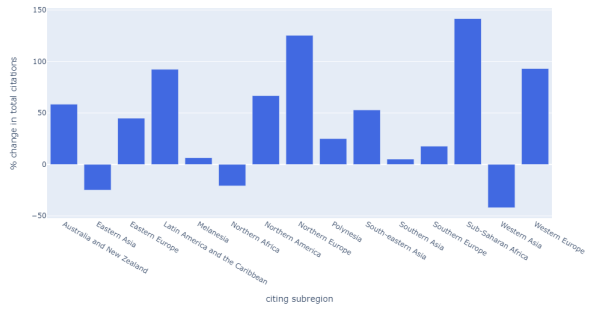


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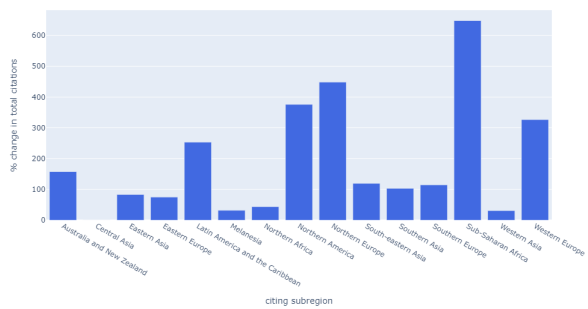


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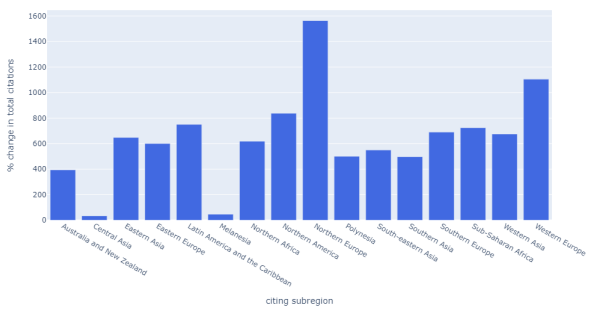


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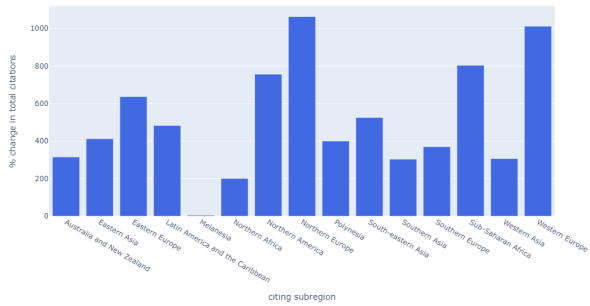


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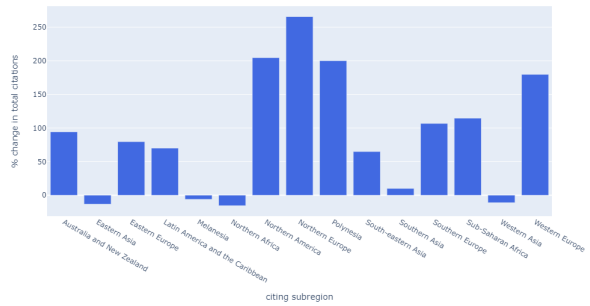


Figure: % change in total citations to OA/non-OA paper affiliated to Melanesia for 2018

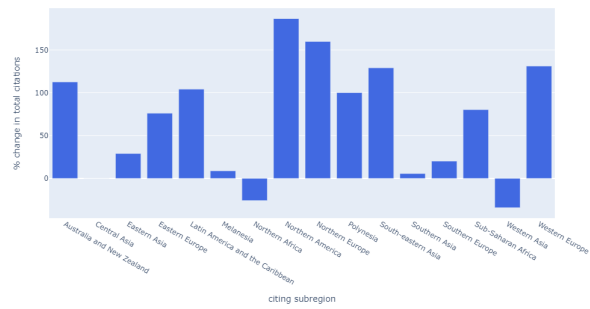
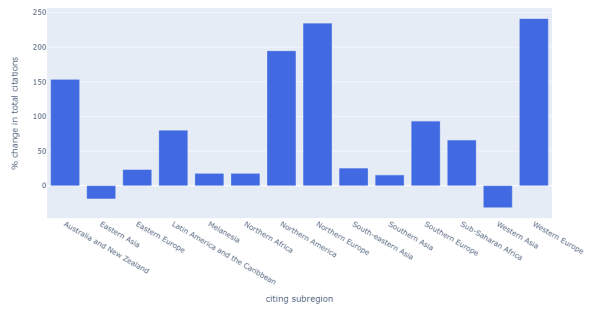


Figure: % change in total citations to OA/non-OA paper affiliated to Melanesia for 2019



For papers affiliated to Polynesia:

Figure: % change in total citations to OA/non-OA paper affiliated to Polynesia for 2010

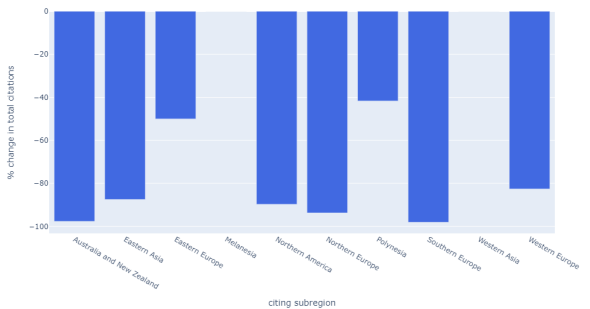


Figure: % change in total citations to OA/non-OA paper affiliated to Polynesia for 2011

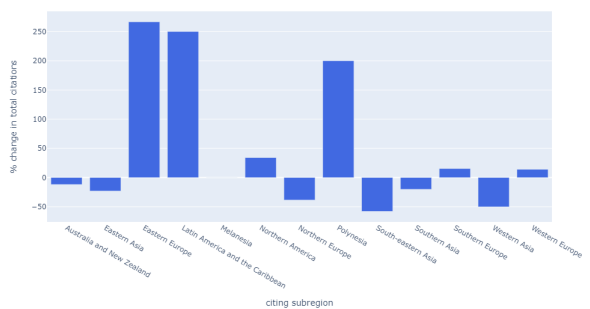


Figure: % change in total citations to OA/non-OA paper affiliated to Polynesia for 2012

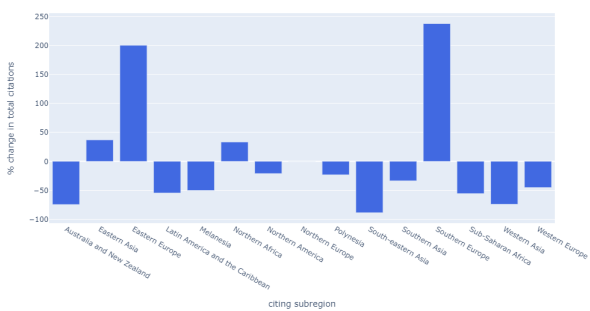


Figure: % change in total citations to OA/non-OA paper affiliated to Polynesia for 2013

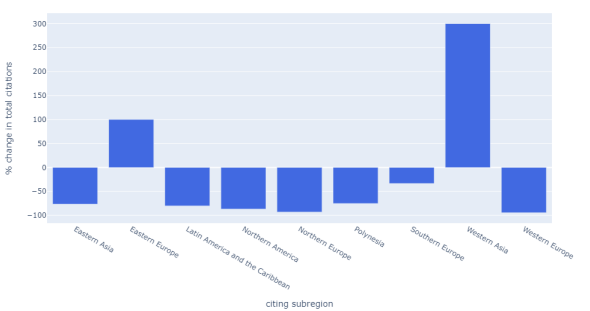


Figure: % change in total citations to OA/non-OA paper affiliated to Polynesia for 2014

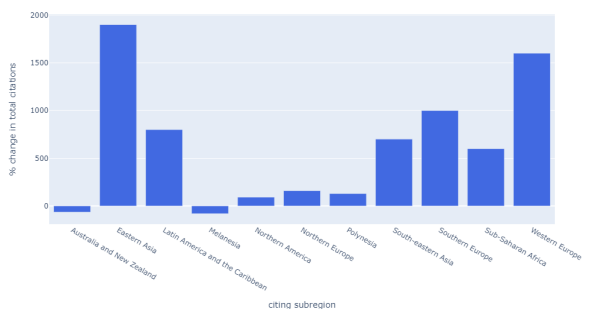


Figure: % change in total citations to OA/non-OA paper affiliated to Polynesia for 2015

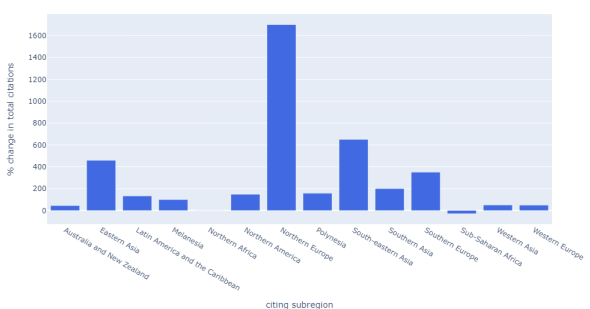


Figure: % change in total citations to OA/non-OA paper affiliated to Polynesia for 2016

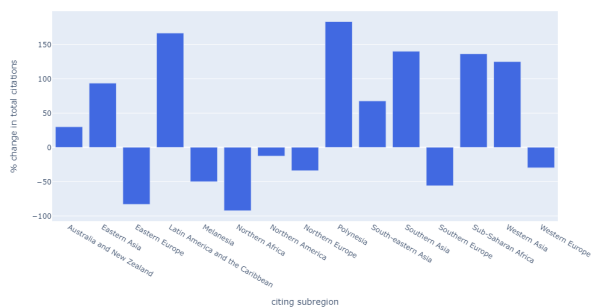


Figure: % change in total citations to OA/non-OA paper affiliated to Polynesia for 2017

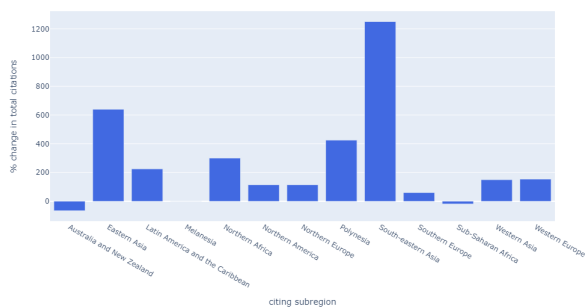


Figure: % change in total citations to OA/non-OA paper affiliated to Polynesia for 2018

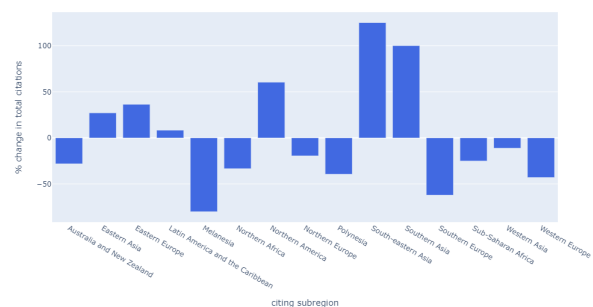
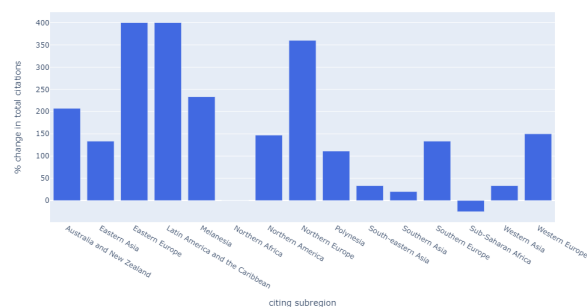


Figure: % change in total citations to OA/non-OA paper affiliated to Polynesia for 2019



For papers affiliated to Micronesia:

Figure: % change in total citations to OA/non-OA paper affiliated to Micronesia for 2010

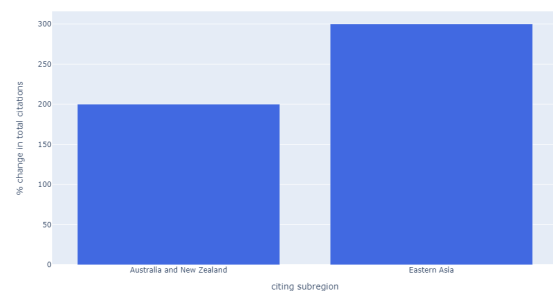
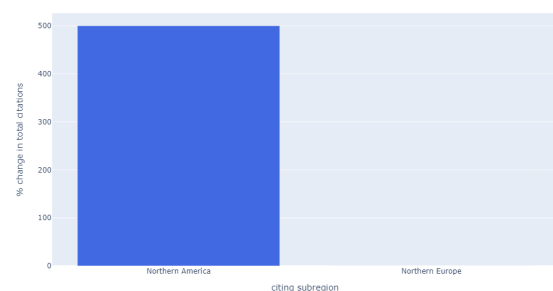


Figure: % change in total citations to OA/non-OA paper affiliated to Micronesia for 2013



Figure: % change in total citations to OA/non-OA paper affiliated to Micronesia for 2017



For papers affiliated to Northern Africa:

Figure: % change in total citations to OA/non-OA paper affiliated to Northern Africa for 2010

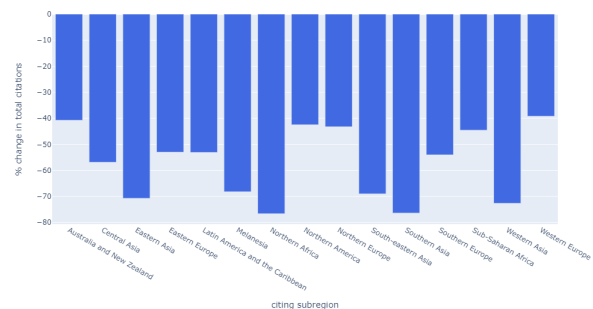


Figure: % change in total citations to OA/non-OA paper affiliated to Northern Africa for 2011

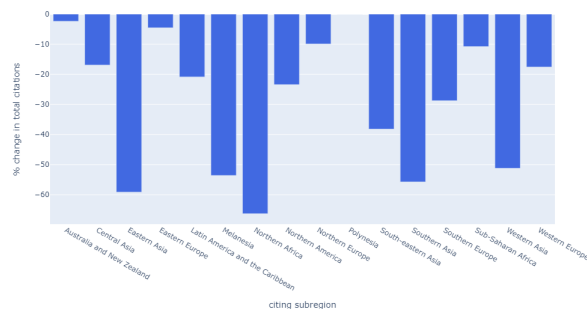


Figure: % change in total citations to OA/non-OA paper affiliated to Northern Africa for 2012

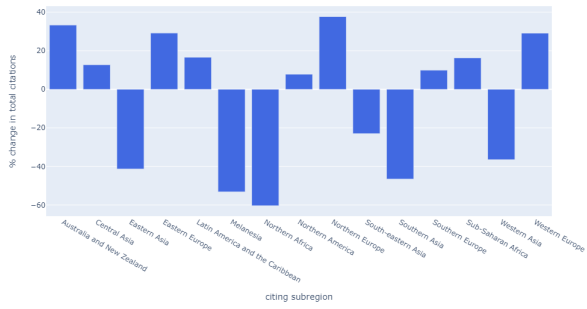


Figure: % change in total citations to OA/non-OA paper affiliated to Northern Africa for 2013

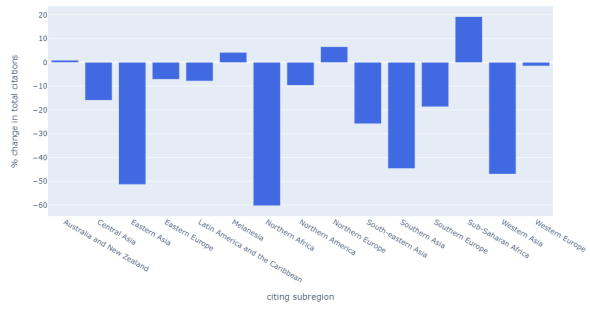


Figure: % change in total citations to OA/non-OA paper affiliated to Northern Africa for 2014

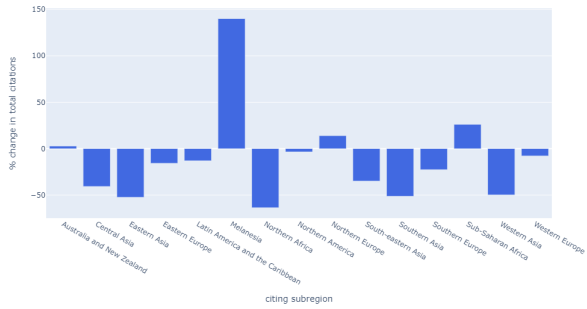


Figure: % change in total citations to OA/non-OA paper affiliated to Northern Africa for 2015

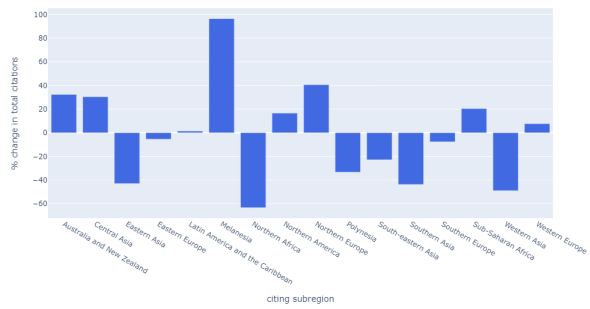


Figure: % change in total citations to OA/non-OA paper affiliated to Northern Africa for 2016

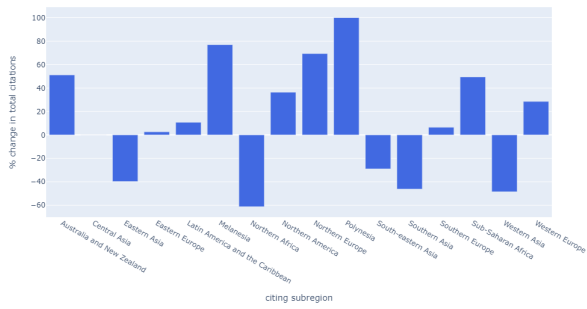


Figure: % change in total citations to OA/non-OA paper affiliated to Northern Africa for 2017

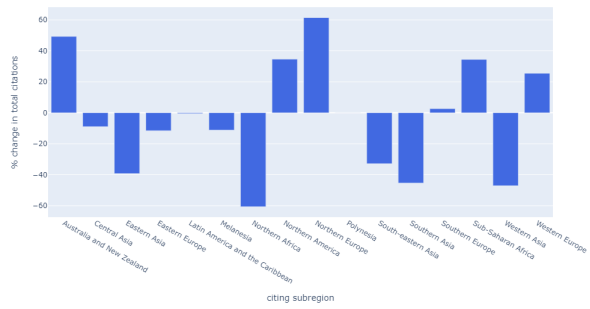


Figure: % change in total citations to OA/non-OA paper affiliated to Northern Africa for 2018

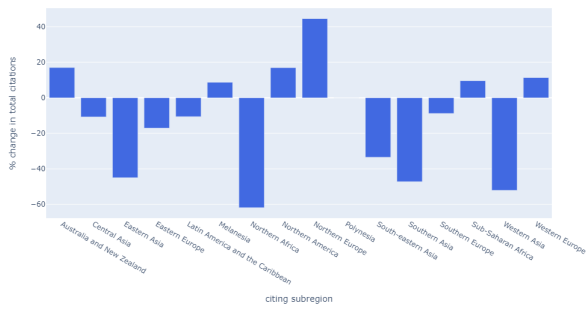
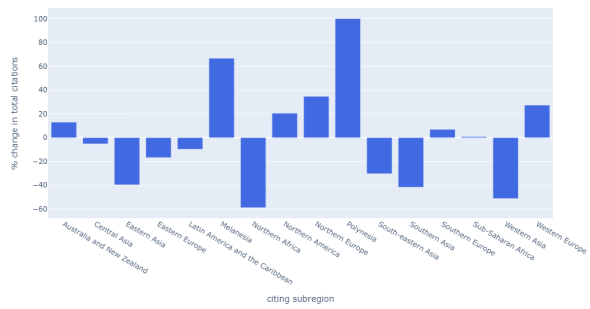


Figure: % change in total citations to OA/non-OA paper affiliated to Northern Africa for 2019



For papers affiliated to Sub-Saharan Africa:

Figure: % change in total citations to OA/non-OA paper affiliated to Sub-Saharan Africa for 2010

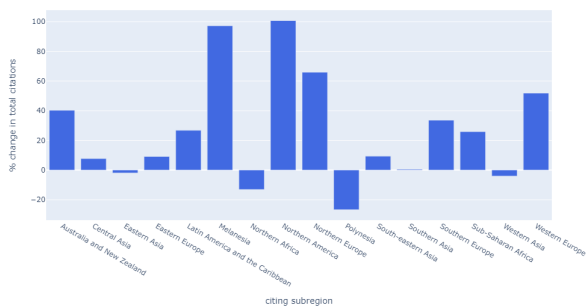


Figure: % change in total citations to OA/non-OA paper affiliated to Sub-Saharan Africa for 2011

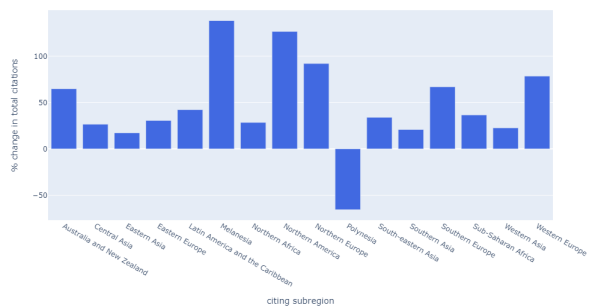


Figure: % change in total citations to OA/non-OA paper affiliated to Sub-Saharan Africa for 2012

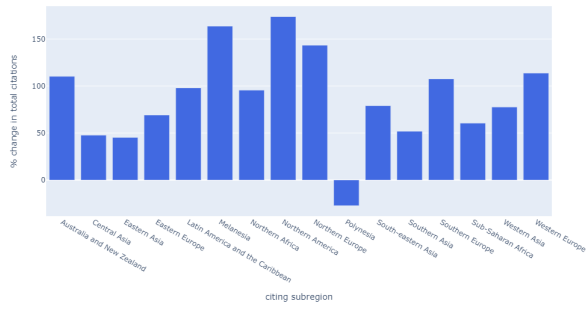


Figure: % change in total citations to OA/non-OA paper affiliated to Sub-Saharan Africa for 2013

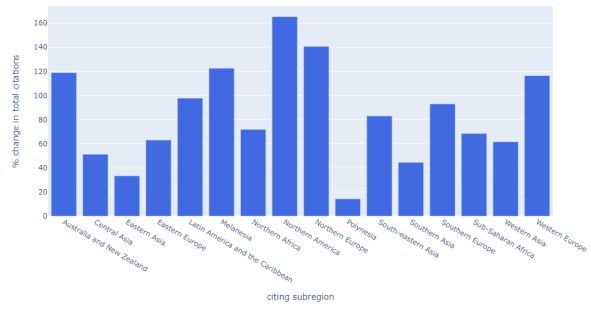


Figure: % change in total citations to OA/non-OA paper affiliated to Sub-Saharan Africa for 2014

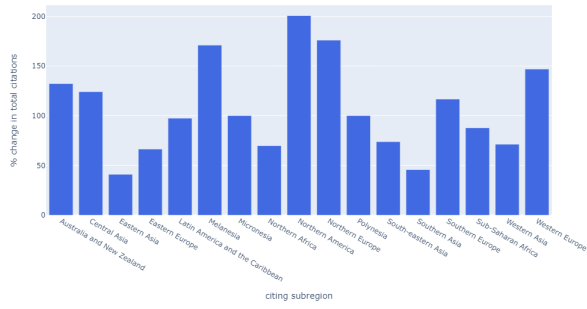


Figure: % change in total citations to OA/non-OA paper affiliated to Sub-Saharan Africa for 2015

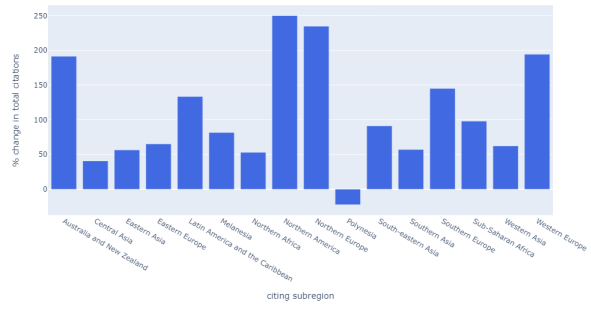


Figure: % change in total citations to OA/non-OA paper affiliated to Sub-Saharan Africa for 2016

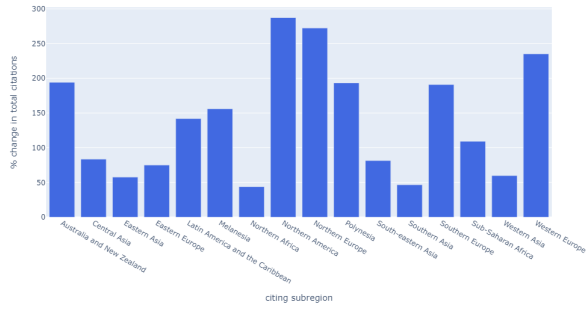


Figure: % change in total citations to OA/non-OA paper affiliated to Sub-Saharan Africa for 2017

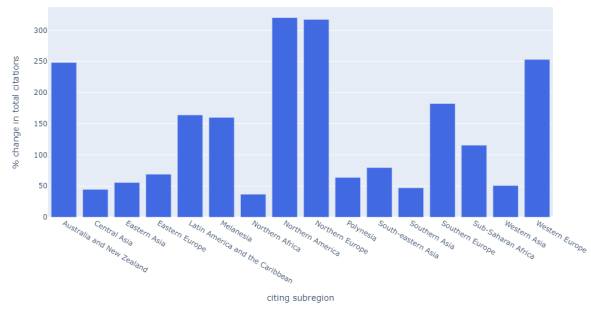


Figure: % change in total citations to OA/non-OA paper affiliated to Sub-Saharan Africa for 2018

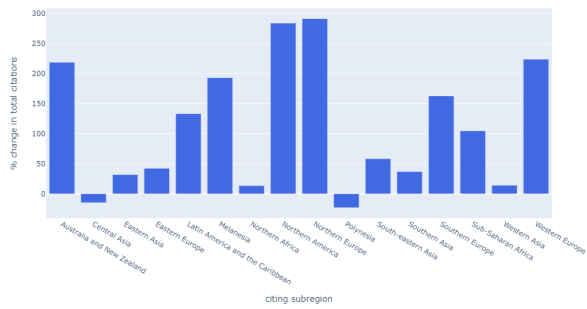
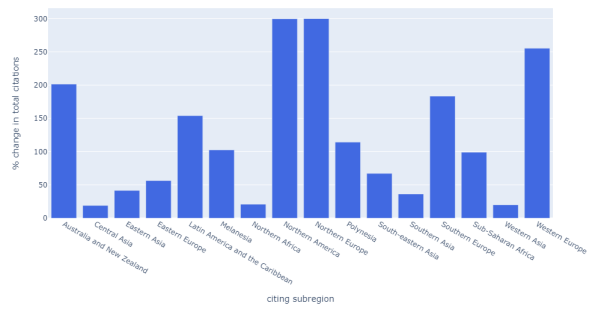


Figure: % change in total citations to OA/non-OA paper affiliated to Sub-Saharan Africa for 2019



Section N: OA citation advantage for regions using percentage change in total citations

Continuing from the previous section, we present parallel results for regions below.

For papers affiliated to Asia:

Figure: % change in total citations to OA/non-OA paper affiliated to Asia for 2010

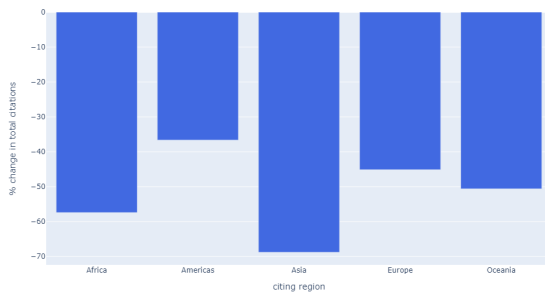


Figure: % change in total citations to OA/non-OA paper affiliated to Asia for 2011

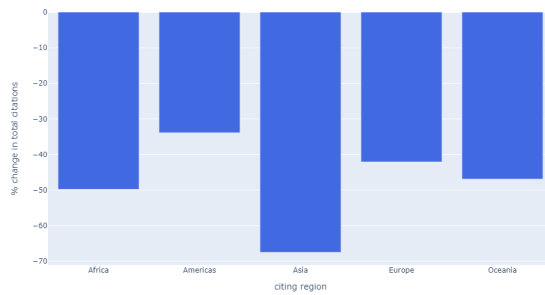


Figure: % change in total citations to OA/non-OA paper affiliated to Asia for 2012



Figure: % change in total citations to OA/non-OA paper affiliated to Asia for 2013

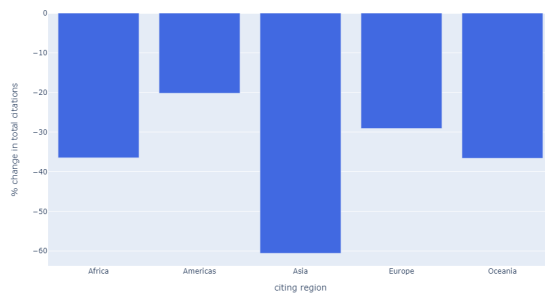


Figure: % change in total citations to OA/non-OA paper affiliated to Asia for 2014

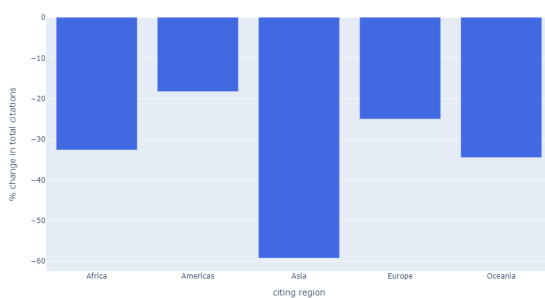


Figure: % change in total citations to OA/non-OA paper affiliated to Asia for 2015

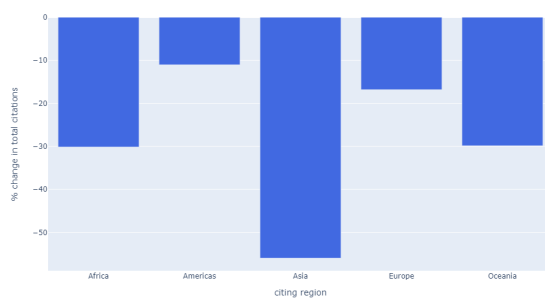


Figure: % change in total citations to OA/non-OA paper affiliated to Asia for 2016

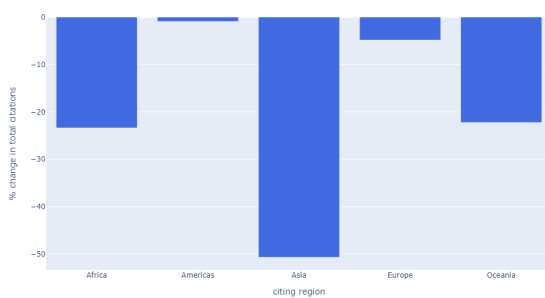


Figure: % change in total citations to OA/non-OA paper affiliated to Asia for 2017

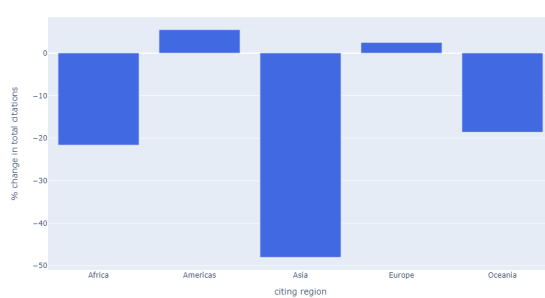


Figure: % change in total citations to OA/non-OA paper affiliated to Asia for 2018

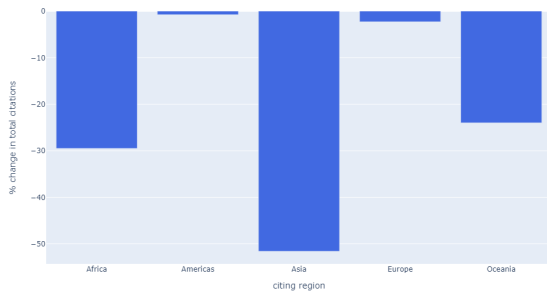
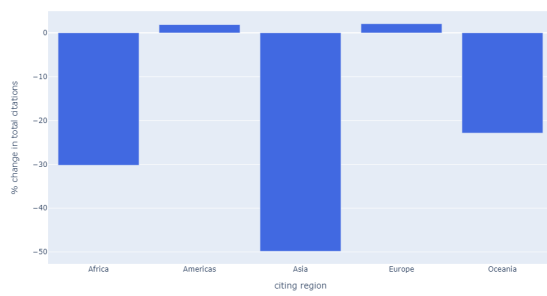


Figure: % change in total citations to OA/non-OA paper affiliated to Asia for 2019



For papers affiliated to Europe:

Figure: % change in total citations to OA/non-OA paper affiliated to Europe for 2010

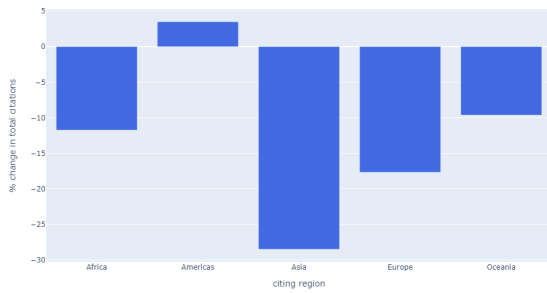


Figure: % change in total citations to OA/non-OA paper affiliated to Europe for 2011



Figure: % change in total citations to OA/non-OA paper affiliated to Europe for 2012

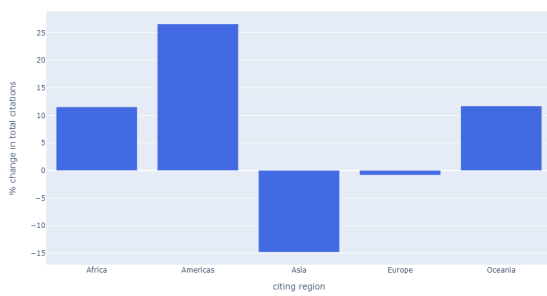


Figure: % change in total citations to OA/non-OA paper affiliated to Europe for 2013



Figure: % change in total citations to OA/non-OA paper affiliated to Europe for 2014

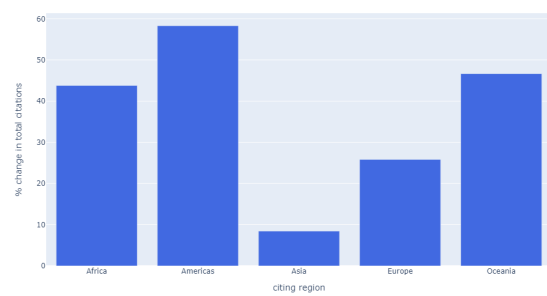


Figure: % change in total citations to OA/non-OA paper affiliated to Europe for 2015

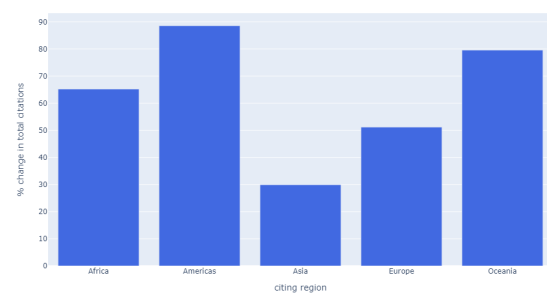


Figure: % change in total citations to OA/non-OA paper affiliated to Europe for 2016

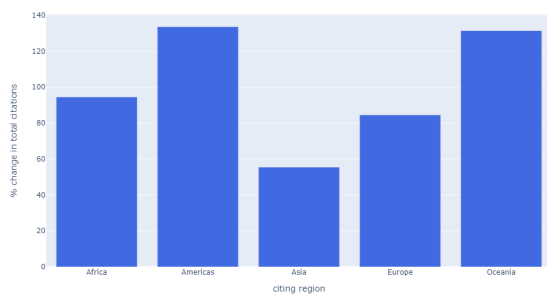


Figure: % change in total citations to OA/non-OA paper affiliated to Europe for 2017

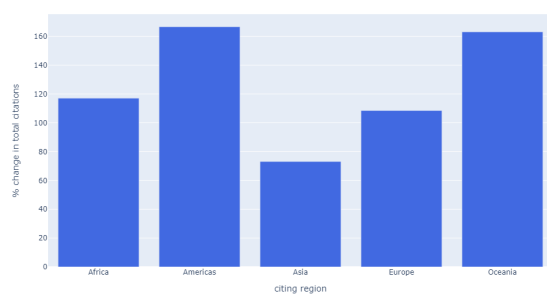


Figure: % change in total citations to OA/non-OA paper affiliated to Europe for 2018

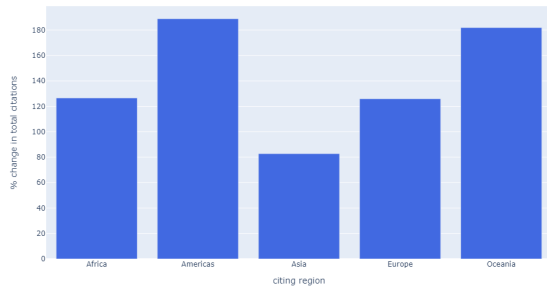
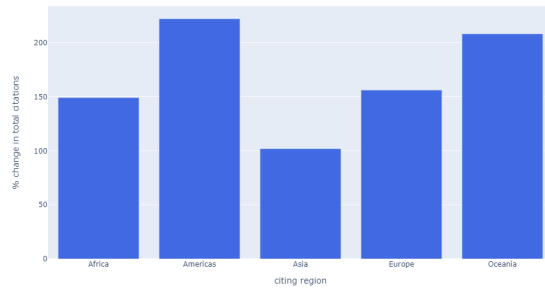


Figure: % change in total citations to OA/non-OA paper affiliated to Europe for 2019



For papers affiliated to Americas:

Figure: % change in total citations to OA/non-OA paper affiliated to Americas for 2010

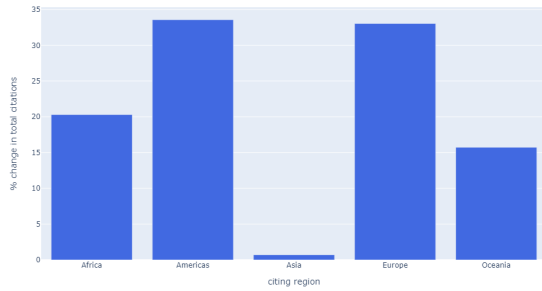


Figure: % change in total citations to OA/non-OA paper affiliated to Americas for 2011

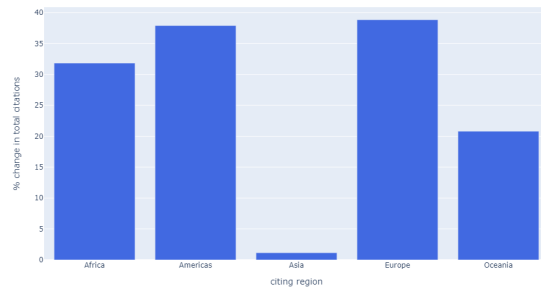


Figure: % change in total citations to OA/non-OA paper affiliated to Americas for 2012

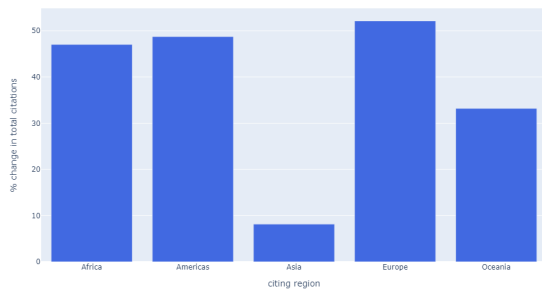


Figure: % change in total citations to OA/non-OA paper affiliated to Americas for 2013

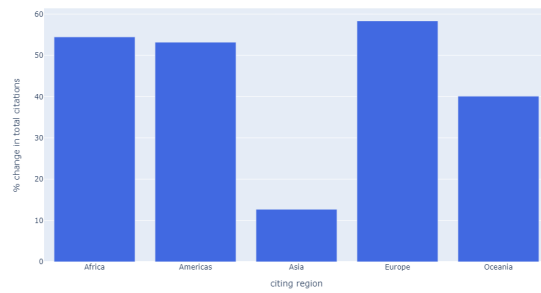


Figure: % change in total citations to OA/non-OA paper affiliated to Americas for 2014

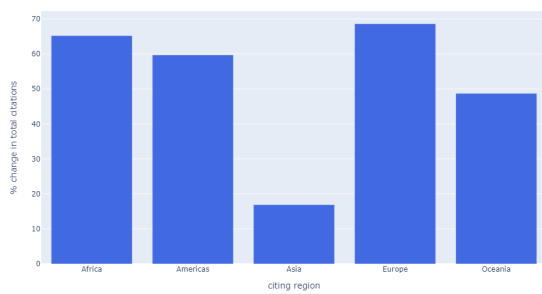


Figure: % change in total citations to OA/non-OA paper affiliated to Americas for 2015

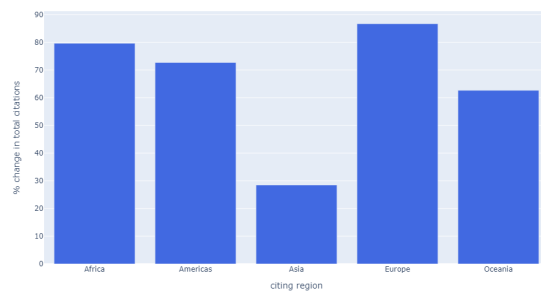


Figure: % change in total citations to OA/non-OA paper affiliated to Americas for 2016

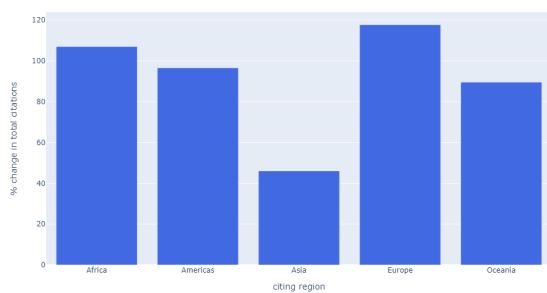


Figure: % change in total citations to OA/non-OA paper affiliated to Americas for 2017

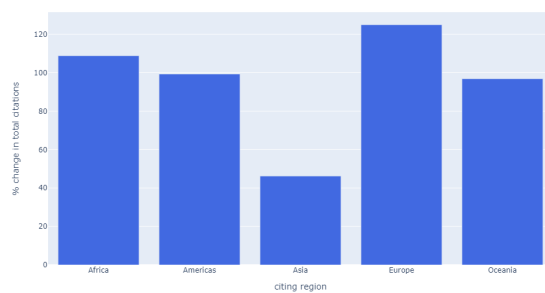


Figure: % change in total citations to OA/non-OA paper affiliated to Americas for 2018

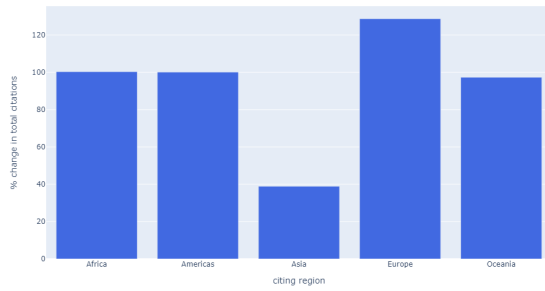
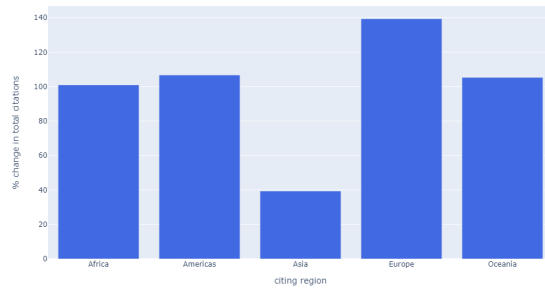


Figure: % change in total citations to OA/non-OA paper affiliated to Americas for 2019



For papers affiliated to Oceania:

Figure: % change in total citations to OA/non-OA paper affiliated to Oceania for 2010

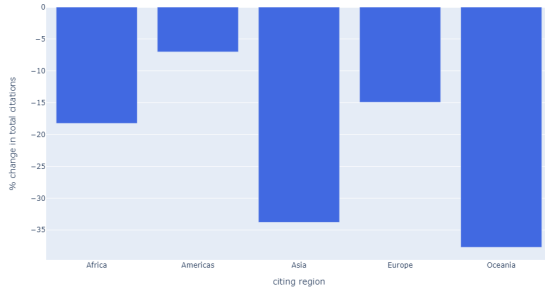


Figure: % change in total citations to OA/non-OA paper affiliated to Oceania for 2011

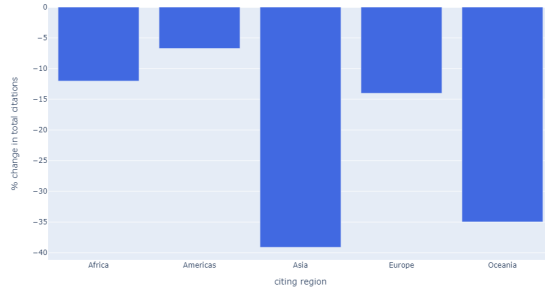


Figure: % change in total citations to OA/non-OA paper affiliated to Oceania for 2012



Figure: % change in total citations to OA/non-OA paper affiliated to Oceania for 2013



Figure: % change in total citations to OA/non-OA paper affiliated to Oceania for 2014

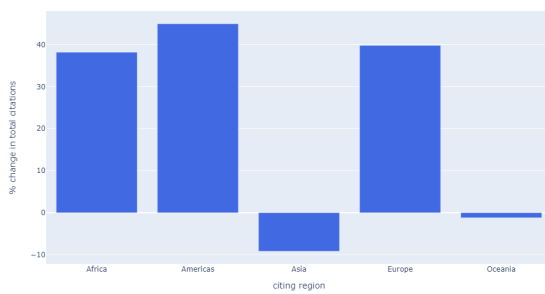


Figure: % change in total citations to OA/non-OA paper affiliated to Oceania for 2015

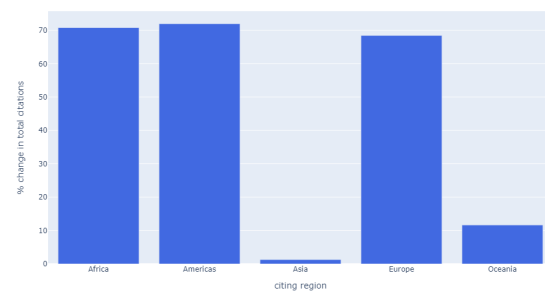


Figure: % change in total citations to OA/non-OA paper affiliated to Oceania for 2016

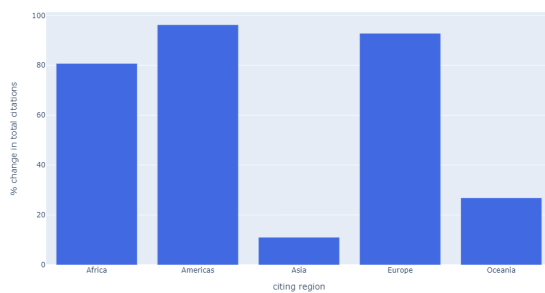


Figure: % change in total citations to OA/non-OA paper affiliated to Oceania for 2017

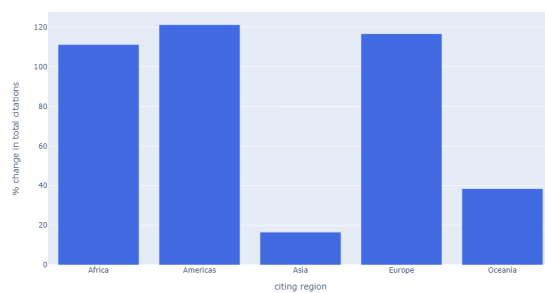


Figure: % change in total citations to OA/non-OA paper affiliated to Oceania for 2018

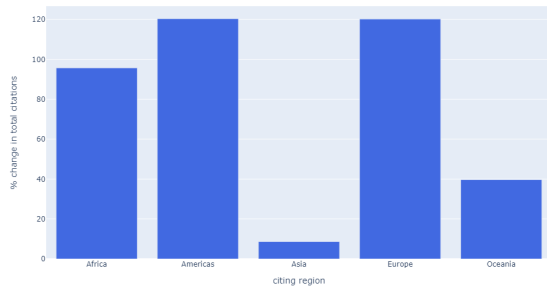
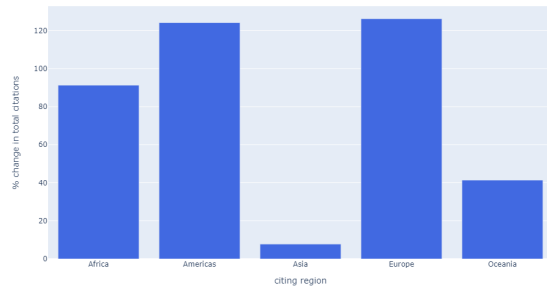


Figure: % change in total citations to OA/non-OA paper affiliated to Oceania for 2019



For papers affiliated to Africa:

Figure: % change in total citations to OA/non-OA paper affiliated to Africa for 2010

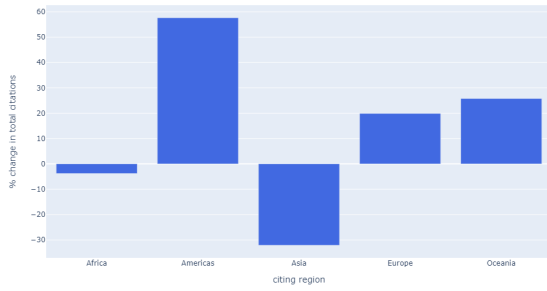


Figure: % change in total citations to OA/non-OA paper affiliated to Africa for 2011

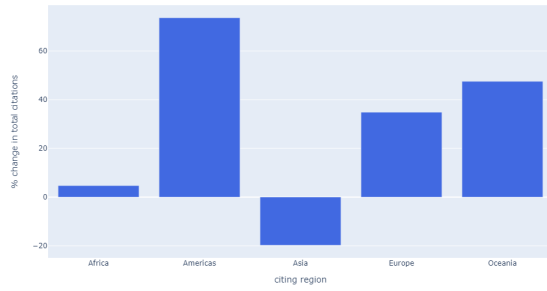


Figure: % change in total citations to OA/non-OA paper affiliated to Africa for 2012

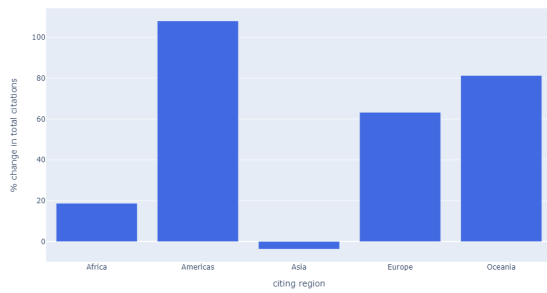


Figure: % change in total citations to OA/non-OA paper affiliated to Africa for 2013

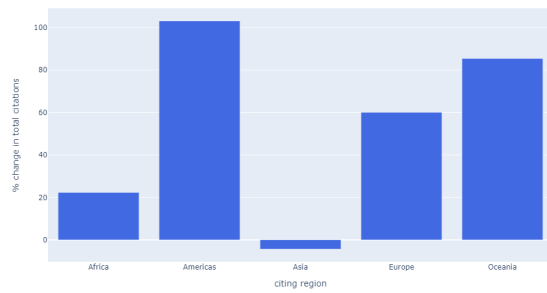


Figure: % change in total citations to OA/non-OA paper affiliated to Africa for 2014

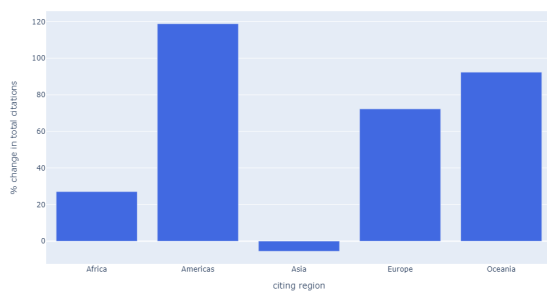


Figure: % change in total citations to OA/non-OA paper affiliated to Africa for 2015

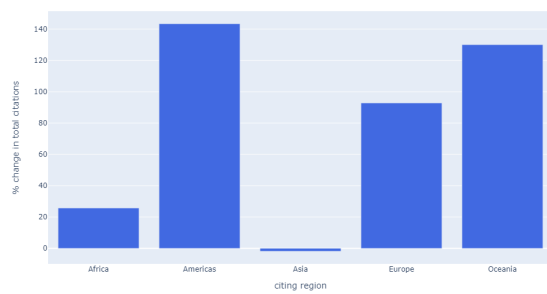


Figure: % change in total citations to OA/non-OA paper affiliated to Africa for 2016

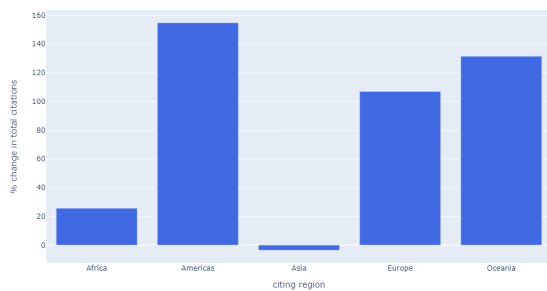


Figure: % change in total citations to OA/non-OA paper affiliated to Africa for 2017

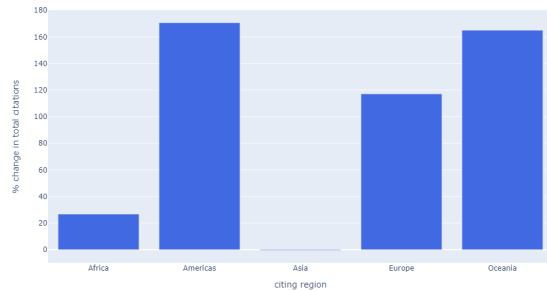


Figure: % change in total citations to OA/non-OA paper affiliated to Africa for 2018

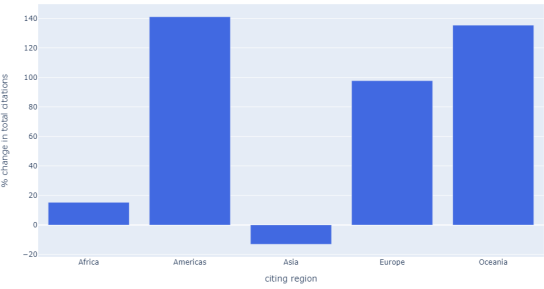


Figure: % change in total citations to OA/non-OA paper affiliated to Africa for 2019

