

Supplementary Materials

1. Countries

Supplement Table S1: Number of Publication by Countries and Income Group

Rank (No. Publication)	Country	No. of Publication	Total Citation	Average Citation	World Bank Income Group 2019
1	USA	193	4720	24.46	High Income
2	China	82	1240	15.12	Upper Middle Income
3	Canada	41	1455	35.49	High Income
4	Netherlands	33	1183	35.85	High Income
5	UK	29	1472	50.76	High Income
6	Brazil	24	177	7.38	Upper Middle Income
7	Australia	23	590	25.65	High Income
8	Turkey	21	131	6.24	Upper Middle Income
9	Korea	18	319	17.72	High Income
= 9	Singapore	18	220	12.22	High Income
11	Iran	15	112	7.47	Upper Middle Income
= 11	Italy	15	289	19.27	High Income
= 11	Sweden	15	737	49.13	High Income
14	Germany	13	112	8.62	High Income
= 14	India	13	160	12.31	Lower Middle Income
16	Spain	12	130	10.83	High Income
17	Nigeria	11	153	13.91	Lower Middle Income
18	Malaysia	10	15	1.5	Upper Middle Income
19	Portugal	9	77	8.56	High Income
= 19	South Africa	9	28	3.11	Upper Middle Income
21	Japan	8	214	26.75	High Income
22	Thailand	7	65	9.29	Upper Middle Income
23	Indonesia	6	9	1.5	Lower Middle Income
24	Luxembourg	5	91	18.2	High Income
25	Belgium	4	84	21	High Income
= 25	Poland	4	132	33	High Income
27	Greece	3	7	2.33	High Income
= 27	Ireland	3	46	15.33	High Income
= 27	Israel	3	44	14.67	High Income
= 27	Pakistan	3	10	3.33	Lower Middle Income
31	France	2	11	5.5	High Income
= 31	New Zealand	2	40	20	High Income
= 31	Norway	2	7	3.5	High Income
= 31	Uganda	2	11	5.5	Low Income
35	Argentina	1	1	1	Upper Middle Income
= 35	Austria	1	0	0	High Income
= 35	Benin	1	10	10	Lower Middle Income
= 35	Cameroon	1	0	0	Lower Middle Income
= 35	Congo	1	0	0	Lower Middle Income
= 35	Denmark	1	277	277	High Income
= 35	Finland	1	149	149	High Income
= 35	Ghana	1	3	3	Lower Middle Income
= 35	Iceland	1	4	4	High Income
= 35	Jamaica	1	6	6	Upper Middle Income
= 35	Jordan	1	19	19	Upper Middle Income

Rank (No. Publication)	Country	No. of Publication	Total Citation	Average Citation	World Bank Income Group 2019
= 35	Latvia	1	0	0	High Income
= 35	Lebanon	1	2	2	Upper Middle Income
= 35	Saudi Arabia	1	8	8	High Income
= 35	Switzerland	1	3	3	High Income
= 35	Vietnam	1	7	7	Lower Middle Income
= 35	Zimbabwe	1	2	2	Lower Middle Income

Income Group Source (2019):

- Source Page: <https://datahelpdesk.worldbank.org/knowledgebase/articles/906519>
- Excel File: <http://databank.worldbank.org/data/download/site-content/OGHIST.xlsx>

2. Institution Collaboration

Supplement Table S2: Institution Collaboration Cluster by Colour (figure 7)

cluster 1 (colour: red) univ calgary univ toronto mcmaster univ univ washington michigan state univ univ delaware indiana univ indiana univ purdue univ univ cincinnati no arizona univ univ n carolina boston coll univ roma tor vergata univ florida schmitzberger geriatric res educ and clin ctr univ miami res serv penn state univ	cluster 2 (colour: dark blue) baylor coll med univ texas hlth sci ctr houston texas woman univ emory univ univ alabama univ alabama birmingham univ s florida johns hopkins univ	cluster 4 (colour: purple) duke univ china med univ univ oxford duke kunshan univ ningxia med univ peking univ chongqing med univ george inst global hlth univ sydney singapor inst technol chinese univ hong kong	cluster 6 (colour: green) singapore gen hosp changi gen hosp natl neurosci inst natl univ singapore hosp raffles neurosci c tr khoo teck puat hosp durham va med ctr st andrews community hosp tan tock seng hosp natl univ hosp duke nus grad med school st lukes hosp mt alvernia hosp policy res and econ off lawson htll res inst	cluster 8 (colour: pink) lund univ karolinska inst uppsala univ clin res ctr univ sains malaysia king coll london univ leeds acad unit elderly care and rehabil
	cluster 3 (colour: orange) univ illinois rehabil inst chicago northwestern univ yonsei univ vrije univ amsterdam inst rehabil res maastricht univ univ groningen univ med ctr utrecht leiden univ univ appl sci charite univ med berlin univ hosp wurzburg	cluster 5 (colour: light blue) gleaneagles hosp nanyang technol univ durham vet adm med ctr chou neurosci clin off healthcare transformat technol and data grp	cluster 7 (colour: grey) chang gung univ sch nursing asia univ	cluster 9 (colour: light brown) vrije univ brussel univ antwerp univ melbourne monash univ
		cluster 11 (colour: light green) tianjin med univ sichuan univ		cluster 10 (colour: dark brown) hong kong polytech univ zhenzou univ

3. R script

We believe in research reproducibility, and to honour that belief, R script used in this manuscript is shared here. Reader may run this script to validate our findings.

Data available from <https://zenodo.org/record/7421945>

```
## Library
require(tidyverse)
require(bibliometrix)

## Data Import and Convert-----
## File link from zenodo site
linkfile_1 <- "https://zenodo.org/record/7421945/files/22-12-07%20WOS_TIstcgp1.bib?download=1"
linkfile_2 <- "https://zenodo.org/record/7421945/files/22-12-07%20WOS_TIstcgp2.bib?download=1"
## Import and Combine
bibds1_wos <- convert2df(file = linkfile_1, dbsource = "wos", format = "bibtex")
bibds2_wos <- convert2df(file = linkfile_2, dbsource = "wos", format = "bibtex")
bibds_wos <- bind_rows(bibds1_wos, bibds2_wos)
## Convert to 'bibliometrix' class object
bibres <- biblioAnalysis(bibds_wos)

## General Information -----
## Summary
bibres_summary <- summary(bibres)
## Summary Plot
bibres_plot <- plot(bibres, k = 10)
## Figure 1
bibres_plot$AnnualScientProd

## Influential Articles -----
## Table 1
tibble(Title = bibds_wos$TI, Author = bibds_wos$AU, Year = bibds_wos$PY,
       DOI = bibds_wos$DI, Citations = bibds_wos$TC,
       CitaPerYear = Citations/(2023-Year)) %>%
  mutate(across(.cols = c(Title, Author), .fns = str_to_title),
         CitaPerYear = round(CitaPerYear, 2)) %>%
  arrange(desc(Citations)) %>% head(n=10)
## Table 2
tibble(Title = bibds_wos$TI, Author = bibds_wos$AU, Year = bibds_wos$PY,
       DOI = bibds_wos$DI, Citations = bibds_wos$TC,
       CitaPerYear = Citations/(2023-Year)) %>%
  mutate(across(.cols = c(Title, Author), .fns = str_to_title),
         CitaPerYear = round(CitaPerYear, 2)) %>%
  arrange(desc(CitaPerYear)) %>% head(n=10)

## Language -----
## Table 3
bibds_wos %>%
  group_by(LA) %>% summarise(n = n()) %>%
```

```

mutate(percent = n / sum(n) * 100, percent = round(percent,1)) %>%
arrange(desc(n))

## Authors -----
## Figure 2
bibds_noaufreq <- bibds_wos %>%
  select(TI, AU, DT) %>% tibble() %>%
  mutate(no_auth = str_count(AU, pattern = ";") + 1,
         DT = fct_recode(DT,
                        "ARTICLE" = "PROCEEDINGS PAPER",
                        "ARTICLE" = "ARTICLE; PROCEEDINGS PAPER",
                        "ARTICLE" = "ARTICLE; EARLY ACCESS",
                        "REVIEW" = "REVIEW; EARLY ACCESS")) %>%
  rename("paper" = "TI", "author" = "AU", "type" = "DT") %>%
  group_by(no_auth, type) %>%
  summarise(freq = n(), .groups = "drop") %>%
  mutate(percent = freq / sum(freq) * 100, percent = round(percent,1))
bibds_noaufreq %>%
  mutate(type = str_to_title(type)) %>%
  ggplot(aes(no_auth, freq, fill = type)) +
  geom_bar(stat = "identity") +
  labs(x = "Number of Authors", y = "Frequency (Number of Articles)",
       fill = "Type") +
  scale_x_continuous(breaks = seq(0,30,4)) +
  scale_y_continuous(breaks = seq(0,200,20)) +
  theme_bw() + theme(legend.position = "top")

## Table 4
bibres_aulist <- bibres$Authors
bibres_autable <- tibble(Rank = seq_along(bibres_aulist),
                        Author = rownames(bibres_aulist),
                        Np = as.integer(bibres_aulist)) %>%
  mutate(Author = fct_reorder(Author, Rank))
bibres_autable %>%
  rename("Number of Publications" = "Np") %>%
  mutate(Author = stringr::str_to_title(Author),
         percent = `Number of Publications` / bibres$Articles * 100,
         percent = round(percent,1)) %>% head(n = 15)

## Figure 3
bib_AuCoupling_NetMatrix <- biblioNetwork(bibds_wos, analysis = "coupling",
                                           network = "authors", sep = ";")
bib_AuCoupling_Plot <- networkPlot(bib_AuCoupling_NetMatrix, n = 25,
                                   cluster = "optimal", type = "auto",
                                   size.cex = T, size = 20, remove.multiple = F,
                                   Title = "Bibliographic coupling of the authors",
                                   alpha = .7)

```

```

## Keywords -----
## Table 5
cbind(Rank = 1:10, bibres_summary$MostRelKeywords)
## Figure 4
bib_kwco_NetMatrix <- biblioNetwork(bibds_wos, analysis = "co-occurrences",
                                   network = "keywords", sep = ";")
bib_kwco_Plot <- networkPlot(bib_kwco_NetMatrix, normalize = "association",
                             n = 25, Title = "Keyword Co-occurrences",
                             cluster = "optimal", type = "fruchterman",
                             size.cex = T, size = 15, remove.multiple = F,
                             edgesize = 7, labelsize = 1.2, label.cex = F,
                             label.n = 20, edges.min = 10)

## Journals -----
## Table 6
bib_bradford <- bradford(bibds_wos)
bib_bradfordtable <- bib_bradford$table %>%
  select(Zone, Freq, Rank) %>% tibble() %>% group_by(Zone) %>%
  summarise(nSO = n(), nArt = sum(Freq),
            RankRange = str_c(min(Rank), max(Rank), sep = "-")) %>%
  mutate(percent = nArt / sum(nArt) * 100, percent = round(percent,1))
bib_bradford$table %>%
  filter(Zone == "Zone 1") %>% tibble() %>%
  mutate(SO = stringr::str_to_title(SO)) %>%
  rename("Journal Name" = "SO") %>% relocate(Rank)
## Figure 5
bib_CRSO <- metaTagExtraction(bibds_wos, Field = "CR_SO", sep = ";")
bib_CRSO_NetMatrix <- biblioNetwork(bib_CRSO, analysis = "co-citation",
                                   network = "sources", sep = ";")
bib_CRSO_Plot <- networkPlot(bib_CRSO_NetMatrix, n = 25,
                             Title = "Co-citation Network", type = "auto",
                             size.cex = T, size = 20, remove.multiple = F,
                             labelsize = 1, edgesize = 5, edges.min = 1, alpha = .7)

## Institutions -----
## Table 7
bibres_instlist <- bibres$Affiliations
bibres_insttable <- tibble(Rank = seq_along(bibres_instlist),
                           InstitutionAffiliation = rownames(bibres_instlist),
                           Np = as.integer(bibres_instlist)) %>%
  mutate(InstitutionAffiliation = fct_reorder(InstitutionAffiliation, Rank))
bibres_insttable %>%
  rename("Number of Publications" = "Np",
        "Institution Name" = "InstitutionAffiliation") %>%
  mutate(`Institution Name` = stringr::str_to_title(`Institution Name`)) %>%
  head(n = 10)

```

```

## Figure 6
bib_educonlab_NetMatrix <- biblioNetwork(bibds_wos, analysis = "collaboration",
                                         network = "universities", sep = ";")
bib_educonlab_Plot <- networkPlot(bib_educonlab_NetMatrix, n = 100,
                                  cluster = "optimal", type = "auto",
                                  size.cex = F, size = 5, remove.multiple = F,
                                  labelsizel=1, alpha = 1, edgesize = 2,
                                  edges.min = 1, remove.isolates = T,
                                  community.repulsion = 0, label = F,
                                  Title = "Institutions collaboration")

## Country -----
## Table 8a
bibres_countrylist <- bibres$Countries
bibres_countrytable <- tibble(Rank = seq_along(bibres_countrylist),
                              Country = rownames(bibres_countrylist),
                              Np = as.integer(bibres_countrylist)) %>%
  mutate(Country = fct_reorder(Country, Rank),
         percent = Np / sum(Np) * 100, percent = round(percent,1))

## Table 8b
bibressum_countrytable <- tibble(Rank = 1:10,
                                 bibres_summary$TCperCountries) %>%
  rename("Country" = "Country      ") %>%
  mutate(Country = str_trim(Country),
         Country = fct_reorder(Country, Rank),
         `Total Citations` = as.integer(`Total Citations`),
         `Average Article Citations` = as.double(`Average Article Citations`),
         percent = `Total Citations` / sum(`Total Citations`) * 100,
         percent = round(percent,1)) %>%
  inner_join(x = ., y = select(bibres_countrytable, Country, Np), by = "Country") %>%
  relocate(percent, .after = `Total Citations`)

## Figure 7
bib_concolab <- metaTagExtraction(bibds_wos, Field = "AU_CO", sep = ";")
bib_concolab_NetMatrix <- biblioNetwork(bib_concolab, analysis = "collaboration",
                                         network = "countries", sep = ";")
bib_concolab_Plot <- networkPlot(bib_concolab_NetMatrix,
                                 n = dim(bib_concolab_NetMatrix)[1],
                                 type = "auto", Title = "Country Collaboration",
                                 size=10, size.cex=T, edgesize = 2, labelsizel=1.1,
                                 edges.min = 2, remove.isolates = T,
                                 community.repulsion = 0, cluster = "none")

```