
The research performance and citation impact of Tanzanian scholars: a scientometric study



**Raphael Zozimus Sangeda
(PhD)**

Lecturer,
Muhimbili University of Health
and Allied Sciences (MUHAS),
Tanzania

**Edda Tandi Lwoga
(PhD)**

Associate Professor,
Muhimbili University of
Health and Allied
Sciences (MUHAS),
Tanzania

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Motivation, problem area

Scientometrics

It analyzes the research productivity and citation impact of researchers work in their discipline/institutions

It is important in informing policies and decisions regarding medical education & patient care services

Lack of studies on the the research productivity of Tanzanian scholars

Research Objectives

- Determine the growth of the Tanzanians' scholarly literature
- Determine the year-wise distribution of publications
- Determine subject-wise distribution of publications
- Determined the authorship patterns
- Determine the citation impact of Tanzania scholars
- Determine degree of collaboration

Research approach, Methodology

- Tanzania publications between 1991-2015 were retrieved from Scopus
- Total Tanzanian institutions(n=31)

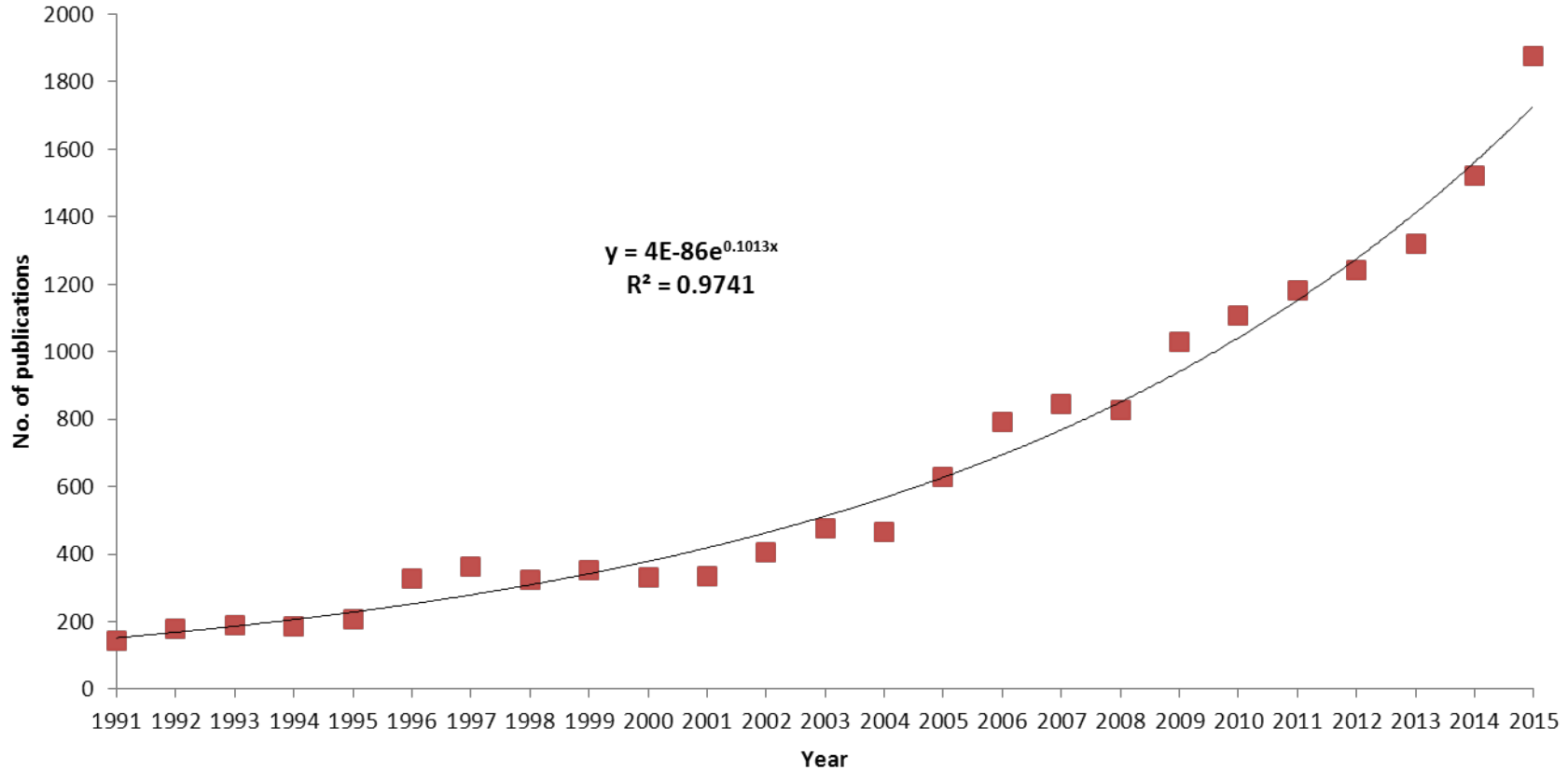
Scientometric analysis

- Data from Scopus uploaded in MySQL database and cleaned
- Python scripts - unpack the combined authors, institutions and keywords, subject index
- Data cleaning and analysis using Ms Excel

Tools used

Study results

Year-wise Distribution of Publications



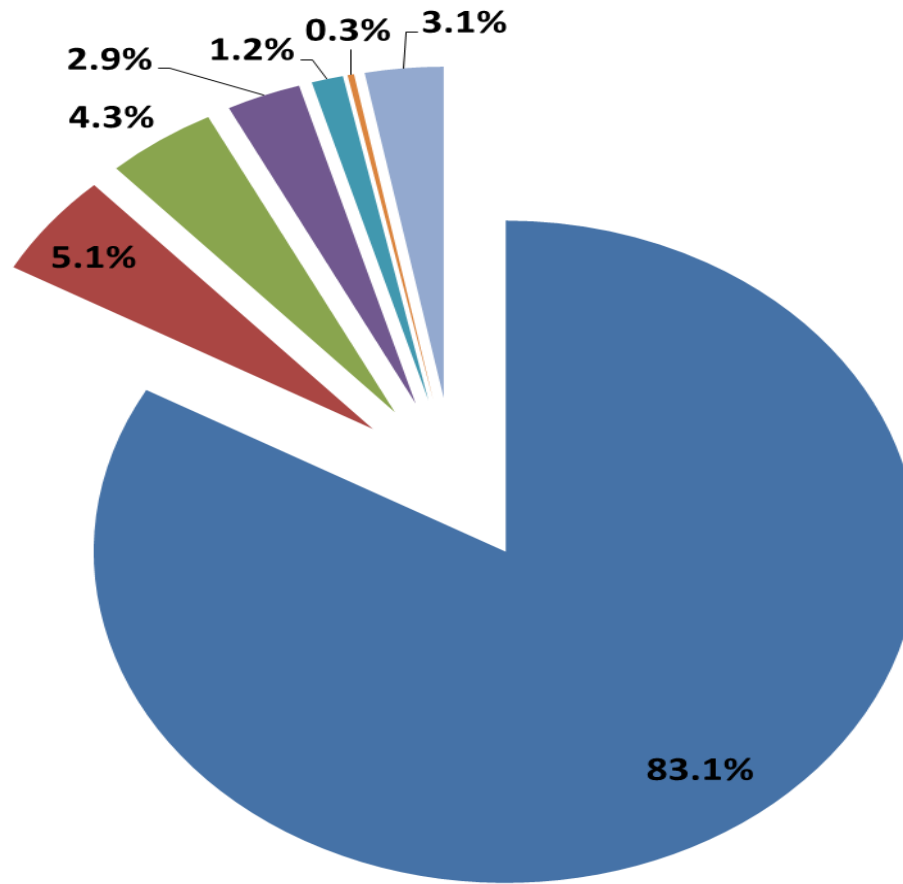
Total number of publications - 16,649

Exponential growth of publications

High number of publications were recorded in 2015 (n= 1876)

Pattern of Publications

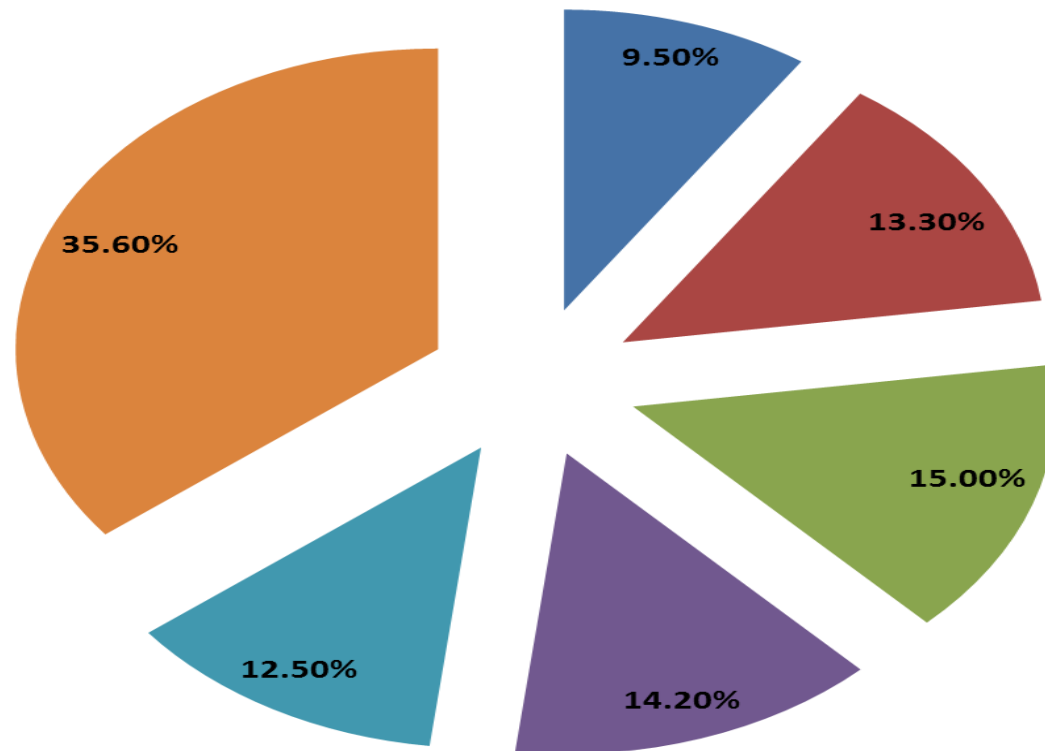
-About 83.1% of the publications were journal articles



■ Article ■ Review ■ Conference Paper ■ Book Chapter ■ Letter ■ Book ■ Other

Collaboration patterns among Tanzanian scholars

- About 90.5% of the publications were multi-authored
- with 35.6% of the publications authored by six or more authors
-



■ Single author ■ Two authors ■ Three authors ■ Four authors ■ Five Authors ■ Six/More Authors

Highly cited journal articles

- 6 publications had a total of 6038(2.1%) of 284,856 citations

SNO	Article	Number of citations
1	Haynes A.B., et al. , (2009). A surgical safety checklist to reduce morbidity and mortality in a global population, New England Journal of Medicine ,	1914
2	Grosskurth H., et al. , (1995). Impact of improved treatment of sexually transmitted diseases on HIV infection in rural Tanzania: randomised controlled trial, The Lancet	1061
3	Berkes F. , Colding J., Folke C., (2000). Rediscovery of Traditional Ecological Knowledge as adaptive management, Ecological Applications ,	972
4	Breshears D. et al., (2005). Regional vegetation die-off in response to global-change-type drought, Proceedings of the National Academy of Sciences of the United States of America .	808
5	Sankaran M., et al., (2005). Determinants of woody cover in African savannas, Nature .	649
6	Olsson P. , et al., (2004). Adaptive comanagement for building resilience in social-ecological systems, Environmental Management ,.	634

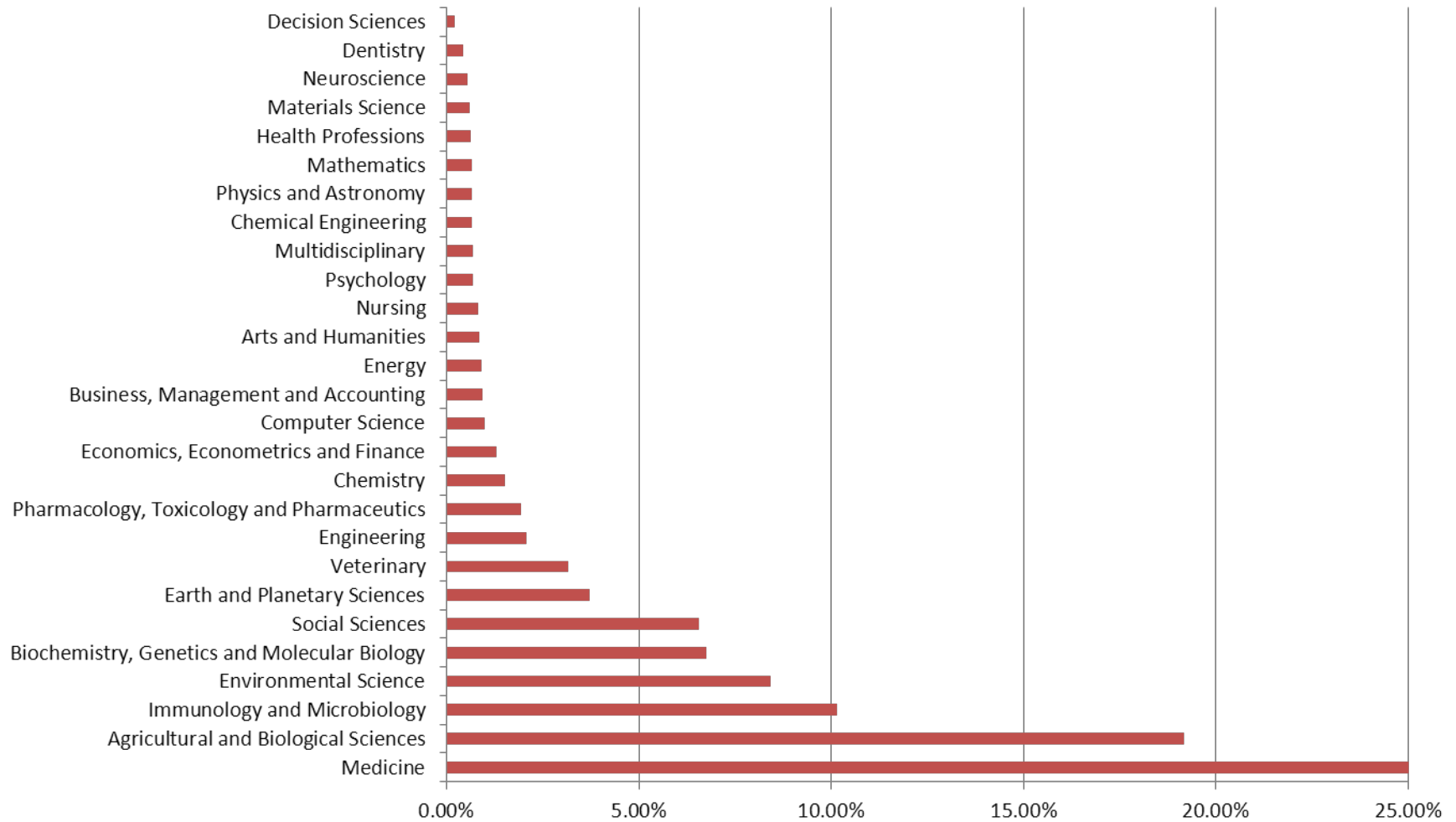
Highly cited journal

- Malaria journal had most citations; PLoS ONE had highest number of articles

SNO	Journal	Total citations	Total articles	Average citations /article	citation rank	articles rank	Average citations rank
1	Malaria Journal	6618	323	20.48916	1	2	535
2	The Lancet	6051	78	77.57692	2	22	58
3	New England Journal of Medicine	5521	27	204.4815	3	90	6
4	Lancet	5240	52	100.7692	4	36	35
5	Tropical Medicine and International Health	5179	222	23.32883	5	4	455
6	PLoS ONE	4410	381	11.5748	10	1	1018
7	IEEE Communications Magazine	1568	2	784	27	1182	1
8	Ecological Applications	1079	3	359.6667	45	884	3
9	Clinical Microbiology Reviews	643	2	321.5	71	1183	4
10	Tanzania journal of health research	476	250	1.904	103	3	2444
11	The Korean journal of parasitology	386	1	386	126	1786	2

Highly published subject

- Medicine articles were on top (25%) of all articles followed by agricultural and biological sciences

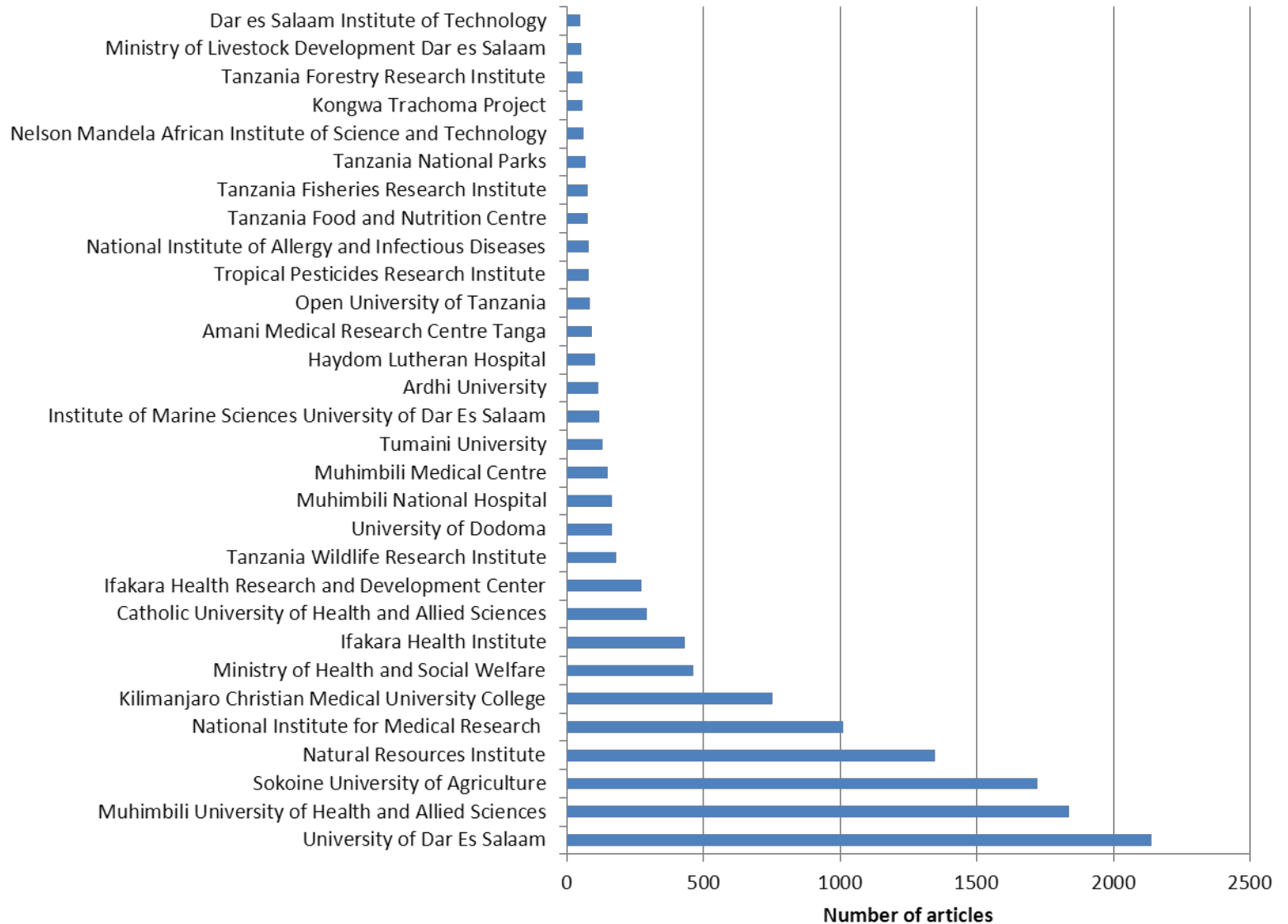


Top collaborating countries

- 50 % of articles in collaboration with the US and UK

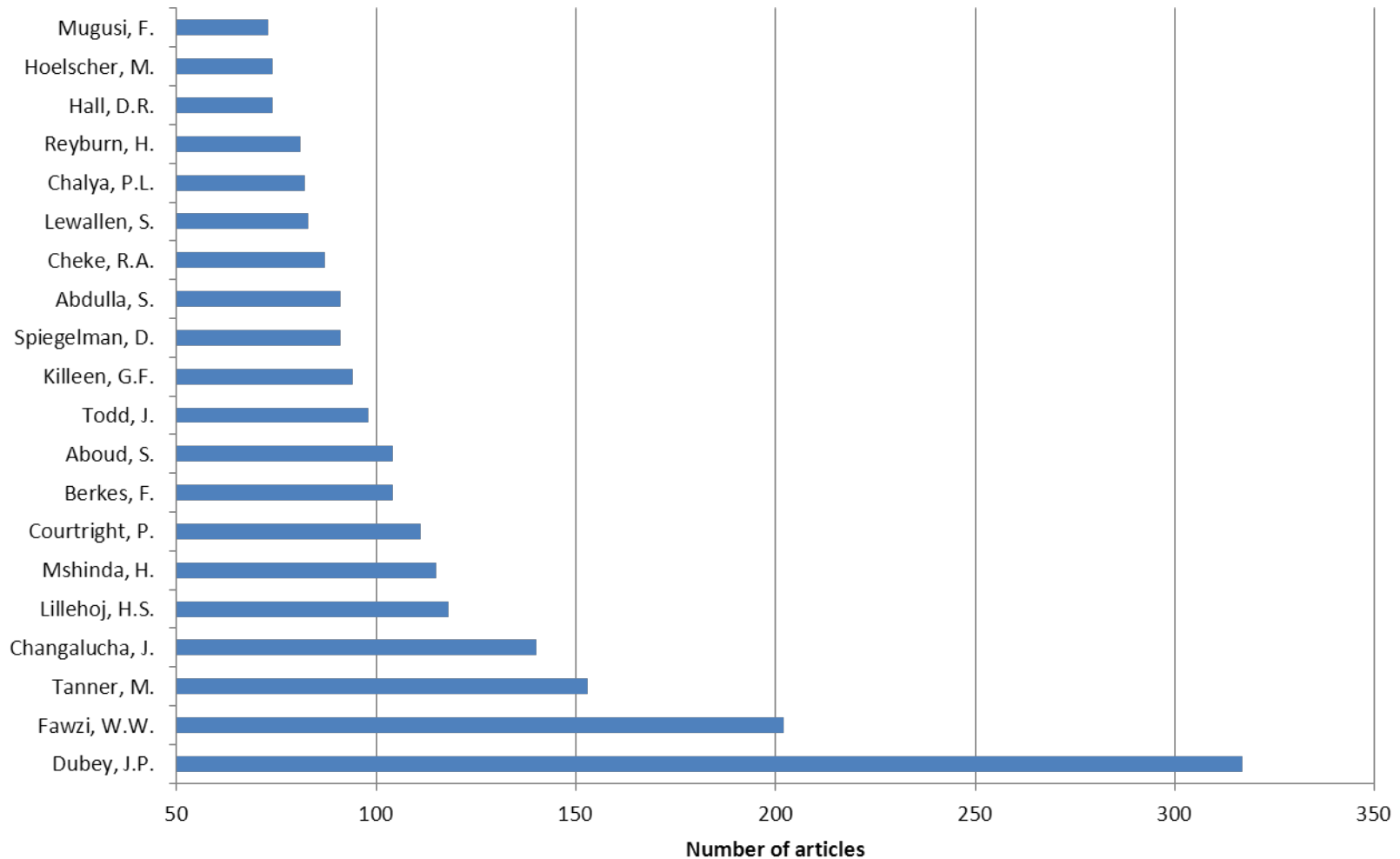
Country	No of articles	%	Country	No of articles	%	Country	No of articles	%
United States	4206	25.3%	Switzerland	868	5.2%	France	478	2.9%
United Kingdom	4168	25.0%	South Africa	867	5.2%	Finland	465	2.8%
Kenya	1018	6.1%	Canada	843	5.1%	Australia	454	2.7%
Netherlands	908	5.5%	Uganda	705	4.2%	Japan	378	2.3%
Germany	877	5.3%	Denmark	697	4.2%	Italy	376	2.3%
Sweden	874	5.2%	Norway	670	4.0%	Spain	372	2.2%
			Belgium	557	3.3%	India	353	2.1%

Institutional rank in publications



Ranked list of prolific scholars: Number of publications

- The top 20 ranked scholars had 2292 (13.8%) share of publications



Discussion of major findings

Total of 16,649 articles were published from 1991-2015 most of them after 2005

Journal articles constituted 83% of all Tanzanian articles

About 90.5% of the publications were multi-authored

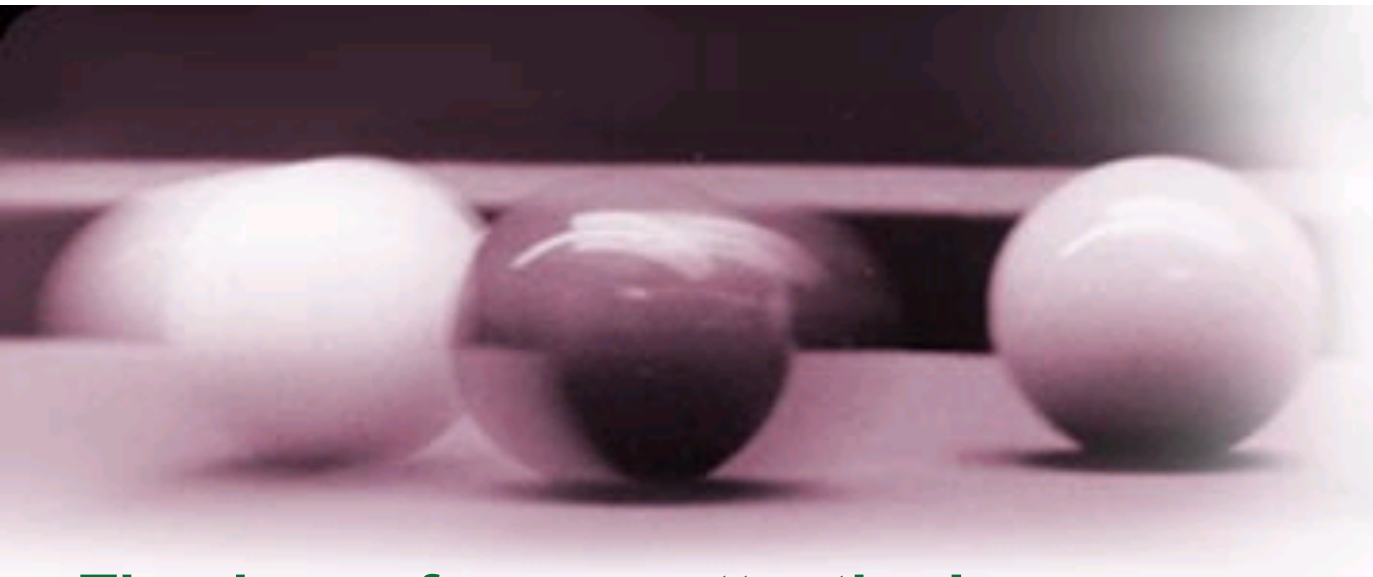
High Degree of collaboration noted

The top subject area of research is Medicine followed by Agriculture and Biological Sciences

UDSM was the leading institution followed by MUHAS and SUA

Conclusions & Recommendations

- Scientometrics studies are important in
 - informing education, curriculum development, research and delivery of patient care services and
 - steering industrial development through science and technology and innovation
 - **Way forward**
 - Government to increase research contribution (>1%)
 - Publish in journals that are widely visible (e-journals & open access journals)
 - Collaborate with external partners to increase impact
 - Collaborate in Tanzania/Africa
 - Establish local online journals and improve visibility (number of citations)
 - Automate scholars' profiles updates to show case research and grants performance on institution websites (repositories)
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Thank you for your attention!



Dr Raphael Z. Sangeda
Prof Edda Tandi Lwoga