



## INTERNATIONAL JOURNAL OF APPLIED TECHNOLOGIES IN LIBRARY AND INFORMATION MANAGEMENT

<http://www.jatlim.org>

International Journal of Applied Technologies in Library and Information Management 9 (2) 09 - 80 - 91

ISSN: (online) 2467 - 8120

© 2023 CREW - Colleagues of Researchers, Educators & Writers

Manuscript Number: JATLIM - 2023-09.02/80 - 91

### Bibliometric Study of Theses and Dissertations of Faculty of Environmental Sciences, Modibbo Adama University, Yola, Nigeria

**Murtala Aliyu Ph.D**

Department of Library and  
Information Science,  
Modibbo Adama University,  
Yola, Nigeria

**Aliyu Ahmed Marafa**

Department of Library and  
Information Science,  
Modibbo Adama University,  
Yola, Nigeria

#### **Abstract**

*The study focuses on the mapping of postgraduate theses and dissertations of the faculty of environmental sciences of Modibbo Adama University, Yola during the period of 20years of running its postgraduate programme (2001-2021). The theses and dissertations were obtained from the postgraduate faculty of the university. Every graduated postgraduate degree has a copy of its theses/dissertation deposited and they were used to retrieve bibliographic data for the study. The study covers 182theses and dissertation produced in the faculty within the period of the study. The study examined and analyzed the research output such as types of postgraduate research output produced by the faculty, the relative growth rate of the research output, annual growth rate of the research output, ranking the highest supervising academic by departments in the faculty, and determining the top three ranked academics in the faculty in terms of postgraduate supervision and graduation.*

**Keywords:** Modibbo Adama University, Bibliometric, Theses and Dissertations, Annual Growth Rate (AGR), Compound Growth Rate (CAGR), Most Prolific Academics

#### **1.1 Introduction (Background of the Modibbo Adama University)**

Alan Pritchard is said to be the first person to use the term Bibliometrics. It is the application of mathematical methods in analyzing books and other documents. Modibbo Adama University, Yola formally known Federal University of Technology, Yola, Adamawa state Nigeria was established in 1981 by the Federal Government of Nigeria to provide the much needed technologically skilled manpower for the nation. It is one of the Federal Universities recognized by National Universities Commission (NUC) to offer Bachelor's, Master's and Doctorate degrees in different fields of Science and Technology. The University's first set of 108

students graduated in the 1988/89 academics session. The University was merged to University of Maiduguri in the 1984, when it became the Modibbo Adama Campus (MACUM), of University of Maiduguri. However, in 1988, it was de-merged and granted full autonomy with the name reverted to Federal University of Technology, Yola. In 2011, the then President and Commander in-Chief, Dr. Goodluck Ebele Jonathan, GCFR approved the change of the University's name to Modibbo Adama University of Technology, (MAUTECH) Yola, effective from 1st October 2011.

The faculty of Environmental Sciences was established in October 1988 with Professor G.G.R. Thambyapillay as its

first Dean. The Department of Geography was the first to take-off with six academic staff and thirty-five students. During the 1989/90 Academic Session the Departments of Urban and Regional Planning (URP) and Geology formally took off and a year later the Department of Surveying was established. The student population in the school rose to 2,100. Subsequently, the Departments of Architecture, Industrial Design and Building were established in 1997, brings the number of Departments in the School to six. At present the School has a total of 97 academic staff and 2,100 Undergraduate and 189 Postgraduate students. The School plans to establish new programmes in Estate Management, Quantity Surveying, Tourism and Hospitality Management, and Meteorology shortly.

The six departments in the faculty are closely related and collectively focused on the science of understanding, ordering, managing and monitoring the physical and human environments. However, within this broad structure, each department is specializing in one major area of the *science of the environment* in order to provide a detailed theoretical and practical spatial/temporal perspective that would help achieve a harmonious and sustainable development. Indeed we work towards achieving a sustainable environment. The basic thrust of the school is to develop an integrated network of teaching and research framework that would produce well trained and competent graduates capable of directing and managing the complex processes of development and change, in the natural and human environments. To achieve these, emphasis is placed on understanding the spatial location of features, their relationships and the processes shaping them over time. Site and situation analysis, including environmental processes and impact of human activities, are stressed and linked to societal needs, goals and objectives. Thus, the understanding, design, implementation and monitoring of land cover,

land uses, plans and policies at all levels are given special consideration and topmost priority in the School. Each department is moderately equipped to handle its area of specialization with efforts being directed at achieving the overall objectives of a technology-focused institution in the twenty first century. Details on each department are provided in the departmental pages.

Currently the School of Environmental Sciences (SES) has six (6) Departments including: Architecture, Industrial Design, Survey and Geoinformatics, Urban and Regional Planning

## 1.2 Objectives of the Study

The objectives of the study are:

1. Find out the type of postgraduate research output of each department in the faculty
2. Determine the growth of postgraduate research output of the faculty
3. Find out the annual growth rate of the postgraduate research output of the faculty
4. Determine the compound annual growth rate of the postgraduate research output of the faculty
5. Rank the academic staff on the basis of postgraduate supervision and graduation frequency in the faculty

## 1.3 Scope of the study

The scope of the study is restricted to only postgraduate theses and dissertations produced in the faculty of environmental sciences since its establishment to 2022.

## 2.1 Literature Review

Prabhoi et al (2019) studied library and Information Science research in East and North East India. They found that 32 LIS faculty and Authors contributed 967 papers from 1980 – 2017. 452 publications are journal articles. The study also found that most of the papers were

published in conference in PLANNER 54 publications, CALIBER 44 publications and IASLIC conference 17 publications. The Study also found that very few faculties used Google Scholar IDs.

Hadimani et al (2015) in their study of bibliometric analysis of research publications of Indian institute of science education and research, Thiruvananthapuram found out that the institute published 157 research papers in different disciplines of science and technology during 2008-2013. Their study found that 157 papers were totally cited 2133 times, with average citation per paper at 13.58. the study also found out that annual average growth rate was 111%, with highest number of papers published in 2013 (52 papers at 33.12%). The most favored journal of publication by the institute is found to be "Journal of Physical Chemistry C", which has 11 articles (7.01%) and ranked first. 2,717 authors have contributed 157 publications with an average contribution of authors per paper at 17.31 and 0.06 productivity per author. Datta, A. with 33 (21.02%) contribution was ranked first in the study. All the principal authors were from India with co-authors from the USA (28 at 17.83%), Germany (20 at 12.74%) and England (16 articles at 10.19%)

In his study, Ercan (2020) examined the articles on the topic of gastronomic tourism with a bibliometric analysis. In his study, 84 articles on the topic of gastronomic tourism in ULAKBİM between the years 2010-2020 were examined. It was found that the articles in the national literature increased with the year 2015 and more qualitative methods of analysis were used. At the same time, it was found that gastronomic tourism is most discussed in the provinces in the Marmara and Aegean regions.

Shukla et al (2019) in their study of mapping the research publications pattern of faculties of library and Information Science

department, Mizoram University, Aizawl from 2008 – 2017: A Bibliometric study, analyzed 279 publications of which 119 of the publications were journal articles. The study found out that the maximum number 61 (21.86%) of research papers were published in 2017. The study also found that there is no constant growth of publications every year during the period of the study and the highest growth rate was 366.67 in the year 2010. The study also found that the yearly output is increasing annually, but the compound annual growth rate is in fluctuation trend. On most prolific author, the study found that Dr. Manoj Kumar Verma is the most productive author and ranked first with 90 (32.26%) publications.

Tayfun *et al.* (2016) analyzed 367 postgraduate theses on tourism between 1985 and 2016 using the method of bibliometric analysis. The results show that studies in the field of marketing were treated first, while in the following years, the dissertations were written on the discipline of management and organization. It was also found that postgraduate theses were more numerous than doctoral theses, that more dissertations were written in education in the supervision of institutes, and that more dissertation studies were conducted by advisors with the title of Assistant Professor.

### 3.1 Methodology

This is a bibliometric analysis of postgraduate research output of the faculty of Environmental Sciences, MAU, Yola. Survey and observation method were used. The data were retrieved from the theses and dissertations available at the postgraduate faculty of the university. The data collected were manually analyzed and presented in form of tables. Annual Growth Rate (AGR) and Compound Annual Growth Rate (CAGR) were analyzed using following the formulae;

$$AGR = \frac{\text{Ending Value}}{\text{Beginning Value}} - 1 \times 100, CAGR = \left( \frac{\text{Ending Value}}{\text{Beginning Value}} \right)^{1/n} - 1 \times 100$$

Weighting system (PhD = 5 points, MSc/MTech = 3 points, MBA/MPA = 2 points and PGD/PGDE = 1 point) was used to determine the ranking of the academic staff.

#### 4.1 Data Analysis

#### 4.2 Types of Postgraduate research output.

The type of postgraduate research output of each department and summary table for the faculty is presented in tables 1, 2 and figure 1 below.

**Table 1:** Types of Postgraduate research output by departments

Department	Year	Ph.D.	MSc/ MTech	PGD/ PGDE	Total
Architecture					
	2016	0	4	0	4
	2017	0	4	0	4
	2018	0	0	0	0
	2019	0	10	0	10
	2020	0	1	0	1
<b>Total</b>		<b>0</b>	<b>19</b>	<b>0</b>	<b>19</b>
Building		-	-	-	-
Geography					
	2001	0	1	0	1
	2006	0	3	0	3
	2007	0	3	0	3
	2008	0	4	0	4
	2009	0	2	0	2
	2010	2	4	0	6
	2011	2	1	0	3
	2012	1	0	0	1
	2013	1	0	0	1
	2014	2	3	0	5
	2015	4	7	0	11
	2016	3	0	0	3
	2017	2	0	0	2
	2018	0	4	0	4
	2019	0	7	0	7
	2020	0	1	0	1
	2021	3	3	0	6
<b>Total</b>		<b>20</b>	<b>43</b>	<b>0</b>	<b>63</b>

Industrial Design		-	-	-	-
Survey and Geoinformatics					
	2006	0	1	2	3
	2007	0	0	0	0
	2008	0	0	5	5
	2009	0	0	0	0
	2010	0	0	1	1
	2011	0	0	2	2
	2012	0	3	9	12
	2013	0	1	0	1
	2014	1	1	0	2
	2015	0	0	1	1
	2016	1	19	0	20
	2017	0	6	3	9
	2018	0	1	0	1
	2019	0	2	0	2
	2020	0	1	1	2
<b>Total</b>		<b>2</b>	<b>35</b>	<b>24</b>	<b>61</b>
Urban and Regional Planning					
	2004	0	0	4	4
	2006	0	1	0	1
	2008	0	1	1	2
	2010	0	2	2	4
	2011	0	7	0	7
	2012	0	0	2	2
	2013	0	0	1	1
	2014	0	1	3	4
	2015	2	2	2	6
	2016	0	1	0	1
	2017	0	1	0	1
	2018	0	0	1	1
	2019	0	5	0	5
<b>Total</b>		<b>2</b>	<b>21</b>	<b>16</b>	<b>39</b>

Table 2: Summary table for the faculty

Department	PhD	MSc/M Tech	PGD/ PGDE	Total	Percentage
Geography	20	43	0	63	34.61
Survey and Geoinformatics	2	35	24	61	33.51
Urban and Regional Planning	2	21	16	39	21.42
Architecture	0	19	-	19	10.43
Industrial Design	-	-	-	-	-
Building	-	-	-	-	-
<b>Total</b>	<b>24</b>	<b>118</b>	<b>40</b>	<b>182</b>	<b>100</b>

Figure 1.



Tables 1, 2 and figure 1 above show that a total of 182 theses and dissertations were produced in the faculty of environmental sciences since the inception of its postgraduate programmes. Master Degree (MSc/MTech) has a total of 118 (64.8%), followed by Postgraduate Diploma with 40 (22%) and Doctor of Philosophy with 24 (13.1%).

#### 4.3 Growth of Postgraduate research output

The Growth of Postgraduate research output of the faculty is presented in table 3 below.

Table 3: Growth of Postgraduate research output

Year	Number of Postgraduate Research Output	Percentage
2001	1	0.54
2002	-	-
2003	-	-
2004	4	2.19
2005	-	-
2006	7	3.84
2007	3	1.64
2008	11	6.04
2009	2	1.09
2010	11	6.04
2011	12	6.59
2012	15	8.24
2013	3	1.64
2014	11	6.04
2015	18	9.89
2016	28	15.38
2017	16	8.79
2018	6	3.29
2019	24	13.18
2020	4	2.19
2021	6	3.29
<b>Total</b>	<b>182</b>	<b>100</b>

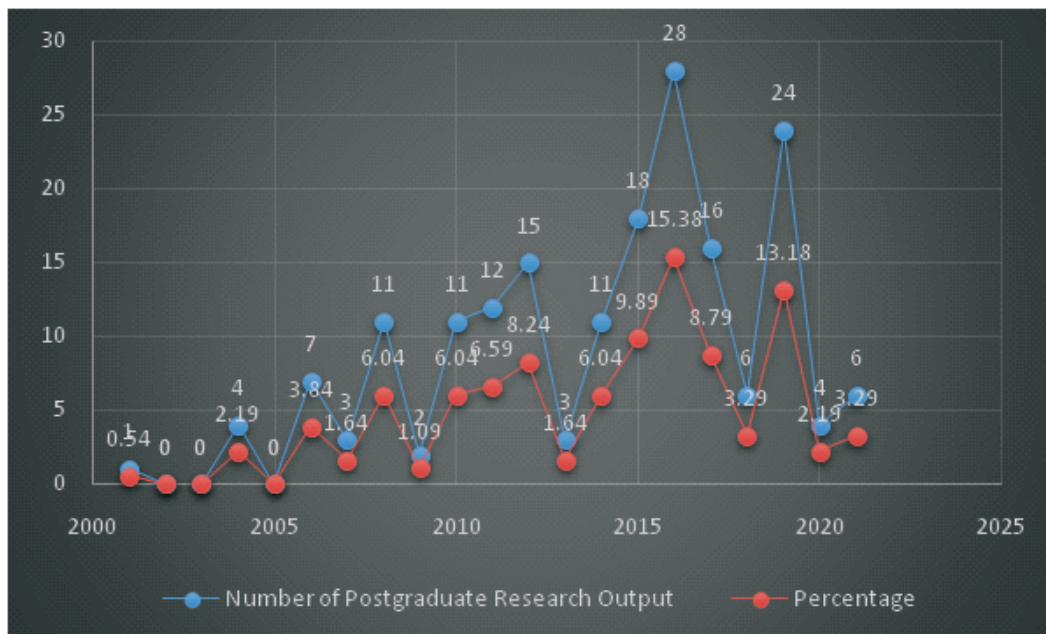


Figure 2.

Table 3 and figure 2 above show the growth of the theses and dissertations of the faculty of environmental sciences for the 21 years of its postgraduate program. The year with highest number of theses and Dissertations is 2016 with 15.38%. This is followed by 2019 (13.18%). Other years recorded very low percentages.

**4.4 Annual growth rate (AGR) of the postgraduate research output of the faculty**

The annual growth rate of the postgraduate research output of the faculty is presented in table 4 below.

The formula is available at <https://www.indeed.com/career-advice/career-development/annual-growth-rate-formula>

Table 4: Annual growth rate of the postgraduate research output of the faculty

<b>Year</b>	<b>Number of Postgraduate research output</b>	<b>AGR</b>
2001	1	0
2002	-	-
2003	-	-
2004	4	300.00
2005	-	-
2006	7	75
2007	3	-57.14
2008	11	266.66
2009	2	-81.81
2010	11	450.00
2011	12	9.09
2012	15	25.00
2013	3	-80.00
2014	11	266.66
2015	18	63.63
2016	28	55.55
2017	16	-42.85
2018	6	-62.50
2019	24	300.00
2020	4	-83.33
2021	6	50.00



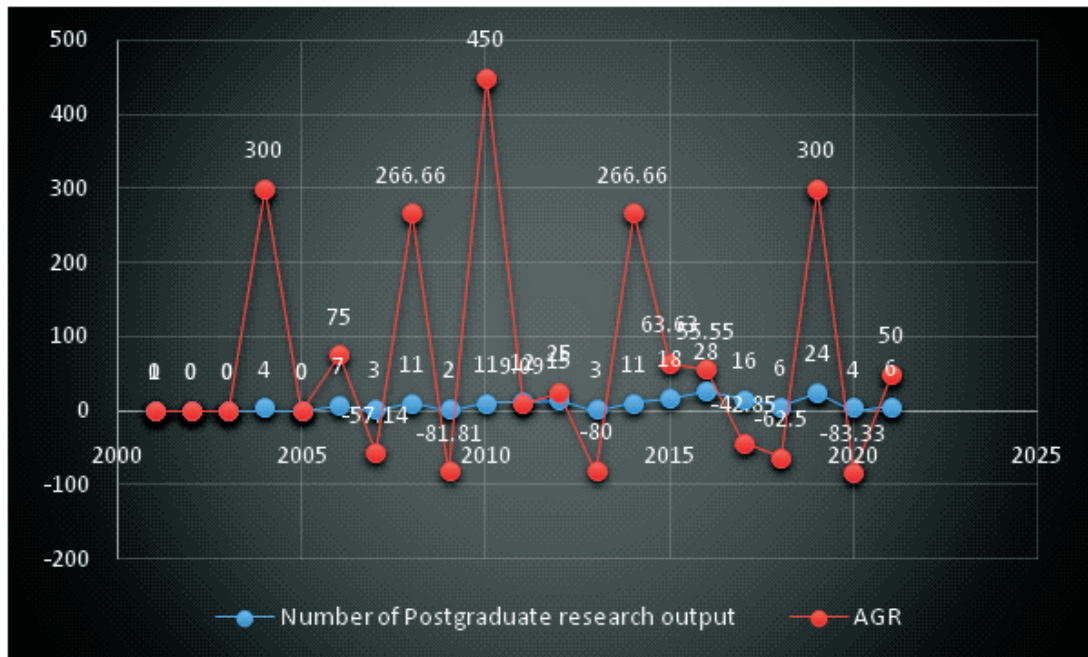


Figure 3.

From table 4 and figure 3 above, it can be deduced that the Annual Growth Rate is fluctuating. The growth is not normal. Year 2010 recorded the highest AGR of 450, followed by 2004 and 2019 with 300 AGR each. 2008 and 2014 each has 266.66 AGR. Other years recorded less than 100 AGR with others in negative values.

#### 4.5 Compound Annual Growth Rate (CAGR) of the Postgraduate Research Output of the Faculty

The compound annual growth rate of the postgraduate research output of the faculty is presented in table 5 below.

Table 5: Compound Annual Growth Rate of the Postgraduate Research Output of the Faculty

Year	Number of Postgraduate research output	Cumulative Frequency	CAGR
2001	1	1	0
2002	-	-	-
2003	-	-	-
2004	4	5	41.4
2005	-	-	-
2006	7	12	9.8
2007	3	15	-11.4
2008	11	26	17.6
2009	2	28	-17.3
2010	11	39	18.6

2011	12	51	0.8
2012	15	66	1.9
2013	3	69	-11.6
2014	11	80	9.7
2015	18	98	3.3
2016	28	126	2.8
2017	16	142	-3.2
2018	6	148	-5.3
2019	24	172	7.6
2020	4	176	-8.6
2021	6	182	1.9

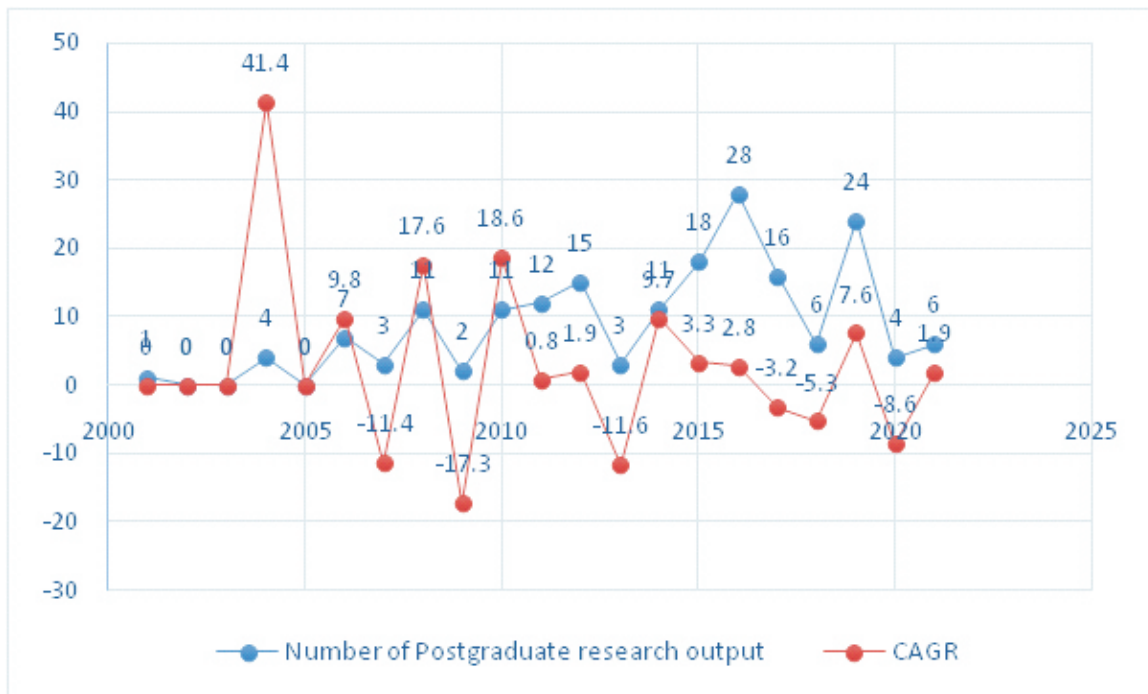


Figure 4.

Table 5 and figure 4 above reveal that the Compound Annual Growth Rate is also fluctuating just as the Annual Growth Rate. Year 2004 recorded the highest CAGR with 41.4, followed by 2010 with 18.6 CAGR and 2008 with 17.6 CAGR. Other years recorded low CAGR with others in negative values.

#### 4.6 Ranking of the academic staff on the basis of postgraduate supervision and graduation in the faculty

The ranking of the academic staff on the basis of postgraduate supervision and graduation is presented in table 6 and 7 below.

Table 6: Ranking of the academic staff on the basis of postgraduate supervision and graduation by Department

Department	PhD 5pts	Score PhD	MSc 3pts	Score MSc	PGD 1pt	Score PGD	Total Score	Rank
<b>Architecture</b>								
Idowu			6	18			24	1
Abiola			3	9			12	2
Zinas			3	9			12	2
Kadi			2	6			8	3
<b>Geography</b>								
A. A. Adebayo	6	30	11	33			63	1
L. tukur	4	20	12	36			56	2
Mala	5	25	8	24			49	3
<b>Survey</b>								
A.A. Musa	2	10	9	27	6	6	43	1
T.O. Idowu			4	12	6	6	18	2
Fajimorekun			6	18			18	2
Orisakwe			2	6	9	9	15	3
Aleem			5	15			15	3
<b>URP</b>								
B.D.Yerima			5	15	1	1	16	1
Ajayi Peters			4	12	2	2	14	2
F.Allesanmi	1	5	2	6	1	1	12	3

Table 7: Faculty Ranking of the Academic Staff on the Basis of Postgraduate Supervision and Graduation

Name	PhD 5pts	Score PhD	MSc 3pts	Score MSc	PGD 1pt	Score PGD	Total Score	Rank
Prof. A. A. Adebayo	6	30	11	33			63	1
Prof. A.L.Tukur	4	20	12	36			56	2
Prof. Mala Galtima	5	25	8	24			49	3

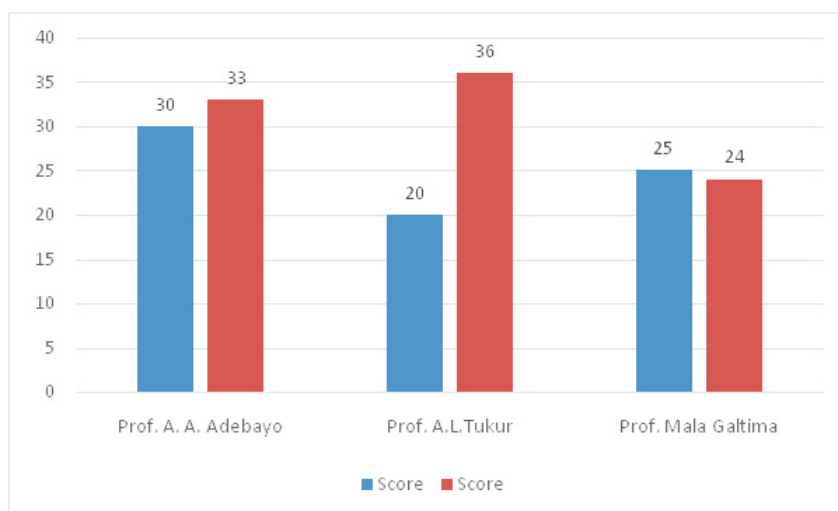


Figure 5.

From tables 5, 7 and figure 5 above, it clearly shows that Professor A. A. Adebayo is the most prolific postgraduate supervisor in the faculty and is ranked first with 63 points, followed by Prof. A. L. Tukur ranked second with 56 points, while Prof. Mala Galtima is ranked third with 49 points.

### Conclusion

From this bibliometric analysis of theses and dissertations of faculties of environmental sciences, Modibbo Adama University, Yola, Nigeria, from 2001 to 2021, 182 total of theses and dissertations were examined and analyzed. Although the growth of the theses and dissertations are generally increasing, the annual growth rate and compound annual growth rate are in fluctuating trends.

### References

- Ercan, F. (2020). Bibliometric analysis of articles on gastronomic tourism in Turkey. *Journal of Tourism and Gastronomy Studies*, 8(2), 1058-1075, <https://doi.org/10.21325/jotags.2020.595>.
- Hadimani N, Mulla KR, Kumar NS. (2015). A Bibliometric Analysis of Research Publications of Indian Institute of Science Education and Research, Thiruvananthapuram. *Journal of Advancements in Library Sciences*. 2 (1):28-35 accessed Retrieved on 4<sup>th</sup> March, 2023 from <https://www.semanticscholar.org/paper/A-BIBLIOMETRIC-ANALYSIS-OF-RESEARCH-PUBLICATIONS-OF-Hadimani-Mulla/341720f24207026e96976f551bbd1e0957f56ffe>
- Parabhoi, L, Hrituparna Bhattacharjee and Dey, S (2019). Library and Information Science Research in East and North East India. *Lambert Academic Publishing*. PP. 1 – 57 (9786139446643). Retrieved on 10<sup>th</sup> February, 2023 from [https://www.researchgate.net/publication/334736731\\_Library\\_and\\_Information\\_Science\\_Research\\_in\\_East\\_and\\_North-East\\_India](https://www.researchgate.net/publication/334736731_Library_and_Information_Science_Research_in_East_and_North-East_India)
- Shukla, Ravi Kumar, Singh, Sunjay Kumar Prof; and Verma, Manoj Kumar Dr. (2019). Mapping the Research Publications Pattern of Faculties of Library and Information Science Department, Mizoram University, Aizawl from 2008 – 2017: A Bibliometric Study. *Library philosophy and practice (e-Journal)*.2448. Retrieved on 10<sup>th</sup> February, 2023 from [https://www.researchgate.net/publication/333103703\\_](https://www.researchgate.net/publication/333103703_)
- Tayfun, A., Küçükergin, F. N., Aysen, E., Eren, A., and Özekici, Y. K. (2016). Turizm alanında yazılan lisansüstü tezlere yönelik bibliyometrik bir analiz. (A Bibliometric Analysis Towards Postgraduate Dissertations in the Field of Tourism). *Gazi Üniversitesi Turizm Fakültesi Dergisi*, (1), 50-69.