A 14 - Years Mapping of Research Productivity of the School of Business Academicians at Mzumbe University, Tanzania: A Bibliometrics Analysis

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Abstract

The purpose of this study is to determine the research productivity of the School of Business (SoB) academic staff at Mzumbe University between 2007 and 2020. The study employed a mixed approach in data collection. A total of 58 SoB academic staff were used in this study. Quantitative data were extracted from google scholar using the Publish or Perish (PoP) software. Qualitative data were collected using an interview guide. The quantitative data were analysed using a Microsoft Excel Spread sheet whereas qualitative data were analysed using content analysis. The findings indicate that a total of 253 publications were recorded for all 14 years yielding a low yearly average of 18.07 publications for all academicians and an average of only 4.4 publications for each SoB academician. Individual productivity analysis shows Dr. Hawa Tundui as the top-ranking academician with 20 publications. The distribution of citations for SoB academicians has Dr. Ernest Mwasalwiba ranking the first with 924 citations. The authorship pattern at SoB was dominated by single-authored publications 100 (40%) followed by two-authored publications 87 (34%) with an average of 0.49 degree of collaboration. Subject-wise distribution reveals that SoB academic staff are more interested in writing on Small and Medium Enterprises (SMEs) and business area. With regard to the journal of preference, most of the SoB scholars prefer to publish in the Uongozi Journal of Management and Development Dynamics (UJMDD). This bibliometrics analysis was limited to SoB. Other studies should cover all MU schools, faculties, directorates and other campuses. To improve growth of research and publications at MU, collaborations in research and publications; formulating a friendly and favourable research policy; awareness creation about online research platforms such as registering on Google Scholar among MU academicians, Research Gate and ORCID among others and capacity building in publishing skills are highly recommended. This is the first time a bibliometrics analysis has been conducted to determine research productivity at MU and which covered a field of business in Tanzania.

Key words: *research productivity, bibliometric analysis, publications, academicians, distribution of citations, authorship pattern, degree of collaboration, metrics, business school, Mzumbe University, Tanzania.*

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1. Introduction

Bibliometrics analysis has become a tool for assessing research and scientific publications worldwide (Zyoud, et al., 2014; Bramness et al., 2014). The tool is frequently used in the field of library and information science to provide a quantitative analysis of academic literature (Sife and Kipanyula, 2016) and to measure the research productivity of academicians in their disciplines of study (Islam and Widen, 2021). Studies by other scholars (e.g. Wei, 2019; Hodgson and Lamberg, 2016; and Olczyk, 2016) have shown that bibliometric analysis has the potential of providing valuable insights into academic research as well as on economics. It can also be used in measuring the coverage and quality of scientific publications and thus helping in library collection development. It empowers librarians to make vital decisions for selecting journals and other scientific publications for the subscription in the library within the limited budget granted (Satpathy, Maharana and Das, 2014). Other scholars like de Oliveira et al. (2016) are of the views that bibliometric analysis allows knowledge development about the impact of the particular research area, the influence of research group or institution, the scientific impact of publication or academic results of the quantitative research.

Furthermore, Chuang et al. (2011), Sife & Lwoga (2014) and Lukwale & Sife (2017) report that the bibliometric analysis is an important tool for evaluating the research performance of individuals, groups, institutions and countries by analysing quantitative and qualitative aspects of publications, measuring statistical patterns in variables such as authorship, sources, subjects coverage, geographical origins, and citations of scholarly works which can further become an essential step to understand the strength of research activities, identify priority areas and uncover those areas that are less researched by scientists. Angammana & Jayatissa (2015) point out that bibliometric analysis can also be used for forecasting the potential of a particular field through considering a number of research performance indicators such as H-index, G-index, Hc-index and HI-norm and the frequency of their citations.

In Africa, there has been an unprecedented growth of bibliometric studies for measuring research productivity in various fields (Jabeen et al., 2015) to give insights into the growth of literature and the flow of knowledge within a specific field of research by identifying the trends and patterns of publications, authorship, citations and journal coverage of academician works (Gudodagi 2014; Chuang et al., 2011). In Tanzania, a bibliometric technique can be used in the evaluation of research productivity and impact of researchers in a particular discipline which is an essential step to understand the strength of research activities, identify priority areas and uncover those areas that are less researched (Sife & Mataba, 2021). This is vital because it helps to know the real worth of research investments and it can also be used as a criterion in ranking universities and research institutions within the country (Sife & Kipanyula, 2016). Fu et al. (2011) as well as Bozeman, Fay and Slade (2012) add that bibliometric analysis is an important tool in analyzing the quantitative and qualitative aspects of publications to measure research productivity trends and output within a given topic such as business studies in the institution or a country which in turn may enable scientists and academicians to receive professional recognition, respect,

promotion, and funding for future research. de Battisti and Salini (2013) are of the view that bibliometric analysis of research output from a particular country is an image of its research activity and its current economic, developmental and health status.

However, a review of the literature indicates that bibliometric analysis in Tanzania has no space in the extant literature in the fields of business such as accountancy, procurement, marketing, finance, and entrepreneurship which are one of the areas of specialization of Mzumbe University since its inception in the year 2000. The available studies have focused on other discipline of studies such as Forestry (Sife et al,. 2013); Traditional Medicine (Lwoga & Sife, 2013); Librarianship (Sife & Lwoga, 2014); Medicine (Lwoga & Sife, 2014); Veterinary (Sife & Kipanyula, 2016); Computer Science (Marwa, Sangeda & Lwoga, 2017); Climate Change (Lukwale & Sife, 2017); E-resources Usage (Mallya & Sife, 2017); Pharmacy (Lwoga, Sangeda & Sife, 2017), Agricultural Science (Mnzava & Chirwa, 2019); and Co-operative studies (Sife & Mataba, 2021). Furthermore, at Mzumbe University, there is little awareness on issues related to bibliometrics and citation analysis which in turn has resulted into having very few scholarly published works on online platforms where they can not be easily cited. This study, therefore, aimed at determining the research productivity of the SoB academicians at Mzumbe University from 2007 to 2020. Specifically, it aimed to examine the growth of SoB literature, determine the productivity of individual SoB academicians, determine the distribution of citations of the SoB academic staff, examine the authorship patterns and degree of collaboration of SoB scholarly works at Mzumbe University, determine the subject-wise distribution of SoB publications, and assess journals of preference by SoB academicians.

2.Literature Review

2.1 Concept of Research Productivity

Research productivity is the number of publications per researcher, group or institution. Aksnes et al. (2019) opine that research productivity is indicated by the number of publications produced in a given period and citation counts meaning how many times the publications have been cited by other authors or a combination of other several indicators such as H-index, G-index and H1-norm index. A written work is the most important visible proof of research productivity which shows the scholarly impacts that enhance the understanding of the growth and development of research. Research productivity is determined by using bibliometric indicators, that is, using data collection tool called Publish or Perish (PoP) which uses Google Scholar to retrieve those relevant data.

2.2 Importance of Bibliometrics Study

Bibliometrics is treated as a branch of Library and Information Science (LIS) with the application of mathematics and statistics to analyze bibliographic information of publications (Islam & Widen, 2021). It is a research method used for analysing and measuring research productivity trends and output (Marx et al., 2014). Bibliometrics analysis is the greatest tool in evaluating and tracking the impact of published research and assisting a researcher or institution to identify journals with the highest impact factor in a research area and

support applications for promotion, tenure and grant funding. According to Harinarayana and Raju (2012) and Sife & Kipanyula (2016), bibliometrics techniques are used by research and higher learning institutions to support decision-making processes such as recruitment, rewards giving, workload and resource allocations, collection development, assessing the quality of a particular work, person, or group as well as providing valid results useful for decision-making and identifying the age of literature as well as the relative status of individuals, departments and institutions. Matcharashvili et al. (2014) reveal that bibliometrics analysis is a crucial tool for evaluating research performance of the country and helps governmental decision makers to build long-term strategic plans, answer questions about which research directions should be built in future or which ongoing research activity should be supported in accordance with the economic and political objectives of a country as well as understanding the country's position relative to global and domestic standards of research quality and production. Harinarayana and Raju (2012) reports that bibliometrics analysis is mostly used because it is relatively inexpensive in terms of time, money, effort and scalability which can be applied from a micro level, i.e., individual research or institute or to a macro level, i.e., country or world and provides valid results useful for decision-making.

2.3 Research and Publication in Higher Learning Institutions (HLIs) in Tanzania

Research and publications are an important component in HLIs' daily life as it is used for promotion, professional recognition, rewards, and for ranking universities as well. Academicians and researchers are publishing to adhere to their institutions and Tanzania Commission for Universities (TCU, 2019) requirements. Others publish to contribute to the body of literature and knowledge for the development of individual scientists (Sife & Kipanyula, 2016). Research and publications are currently becoming critical and a necessary driving gear for institution/university growth and development as well as the nation at large. TCU standard and guidelines (2019) emphasise that university academic staff should do research or embark on innovation for ensuring greater productivity, competitiveness, and relevance to society and the national development agenda.

According to TCU (2019: 5.11), conducting research is one of university academic staff duties. Every university shall participate in incubating research and innovation outputs and outcomes for better results. These results should have an impact to the society as well as encouraging innovation of products, solutions or services as equivalent to publication requirements for promotions and other purposes. Thus, Tanzanian universities are required to undertake an evaluation of academic staff publications for seeking promotion according to institutional criteria of the respective university as aligned to the Commission's Standards and Guidelines.

Additionally, TCU (2019:5.17) emphasises and encourages academic staff to collaborate in research and publish the research articles in journals with the highest scholarly standards to enhance the academic reputation of their respective universities. Furthermore, TCU (2019) suggests that every university should evaluate and weigh publications on a point scale based on subject matter coverage, originality, presentation, contribution to knowledge, relevance to the academic discipline and overall quality. Generally, university research and

publications are not only important entities in the sustainability, development and growth of universities and countries, but they also generate a new body of knowledge and create enterprises based on innovations.

2.4 Growth of Literature

The growth of literature is an increase in publications or research output of an individual or a certain institutions/organization which is revealed by using the bibliometric analysis method by retrieving all online publications for understanding the impacts of the researchers. Availability of online scholarly works helps to make researchers' works and publications more visible to people and thus may increase citations. Egghe et al. (2013) opine that an online published paper has a greater chance of becoming highly cited whenever it has more visibility. On the other hand, the non-availability of publications online may have a drastic effect on research productivity. Research productivity is said to be efficient when all scholar's research works and publications are available online. Thus, registration of scholars in online platforms such as Google Scholar, ORCID, Research Gate, Publons, and many others are of paramount importance.

A study conducted by Lwoga & Sife (2013) indicates that there was an increase in the rate of publication in East Africa in the year 2010. Another study conducted by Song and Zhao (2013) indicates that the number of articles published in the year 2013 had a stable annual growth rate. Baby and Kumaravel (2012) indicate the growth of research of Periyar University faculties in India during 1998–2010 in which the growth of research increased progressively from a single article in 1998 to over 100 articles in 2010. This growth in publications in academic institutions may have been resulted from amendments and review of the publications policy (Sahoo et al., 2015). On the other hand, Chen et al. (2010) indicate that the low growth of publication at the Western Kentucky University was caused by heavy teaching loads, poor collaboration in publications, and inadeaquacy of publications skills. This is similar to a study conducted by Sife and Lwoga (2014) who reported that there is low growth of research and publications in East Africa universities particularly in Tanzania HLIs which was probably caused by poor paper quality, lack of publication skills and low level of teamwork among Tanzanian scholars.

2.5 Individual Productivity in Research and Publications

Costas, Leeuwen & Bordons (2010) opine that individual productivity is the growth of publications per author in a given period which increases the value of outputs produced by the author over a given period of time. Research productivity becomes a norm in bibliometrics that is an essential indicator of efficiency in any company, institution or country that is measured by the number of publications per researcher, distinguishing it from impact (Costas et al., 2010). Annibaldi et al. (2010) note that writing and publishing scientific papers is a function of many factors including the institution where the author works, studies, interest in writing, authors' researcher skills and talents among others. The studies by Sife, Benard & Ernest (2013) and Lwoga & Sife (2013) indicate that

there is low individual productivity in Tanzania which is manifested by few published articles and less productive authors. These findings agree with Lotka's Law of Scientific Productivity which postulates that large proportions of authors tend to produce relatively few articles, with the majority of productions being made by a small number of scholars (Lotka, 1926). This is contrary to a study by Baby and Kumaravel (2012) who report about the individual productivity of Periyar University faculty scholars that they are more productive where the majority published many articles and few scholars published a few publications. Observations by (Adigwe, 2016) have shown that the growth of many scholars in developing countries has been low compared to developed countries because of the favourable scientific research environment that characterized these countries.

The studies conducted by Copes et al. (2012) and Amara, Landry & Halilem (2015) note that senior academic staff are more productive compared to junior scholars because of their experiences in research and publications which enable them to publish frequently. Furthermore, senior staff can publish more frequently than juniours because they have an opportunity of supervising postgraduate students whom they can publish together. On the other hand, if junior scholars are not mentored by seniors in publishing, they remain unproductive (Chen et al*.,* 2010). Sife & Lwoga (2014) report that junior academicians in Tanzania are not productive in research and publications because they lack publishing skills and they are not also properly mentored by seniors.

2.6 Distribution of Citations of Scholars

According to Aksnes, Langfeldt & Wouters (2019), citations in scientific work is a core indicator in research productivity that shows the impacts of the research or its quality. It is an indicator that is used in the evaluation of the scientific performance of an individual, research groups, departments and institutions and the usefulness of scholars' research and publications (Forsythe et al., 2019). Based on PoP citation metrics, there are five types of citations namely: total citation (TC) which measures the total impact of the publications; citations per paper (CPP) that measures the average number of citations a paper receives; citations per year (CPY) which is calculated by dividing the total number of citations by the total number of years the author has published, and this assesses the yearly impact of an author; citations per author (CPA) which is calculated by dividing the citation counts for each paper by the number of authors for that paper, and this gives a good picture of the author's impact; and citation counts (CC) depending on the number of publications per author plus other factors such as the visibility of journals where one publishes, quality of publications, author's integration into scientific networks, age of publications, the size of the scientific community and the topic or subject which is published (Lwoga & Sife, 2013).

2.7 Authorship Pattern and Degree of Collaboration in Research and Publications

There is an abundant evidence that research collaboration has become the norm in every field of scientific and technical research (Bozeman, Fay & Slade, 2012). Authorship patterns involve collaboration among scholars in writing or inventing publication work.

The starting point in an authorship study is to select a group of authors per publication and may include multiple authors such as two, three, four, five or more than five per one publication. The authorship pattern facilitates the bibliometrics analysis to find out the collaboration among researchers of a specified institution or country. Authors like Sife & Lwoga (2014) in their study report that there is an increasing trend in collaborative research and publication among scholars across the world which in turn has increased an author's productivity (Adigwe, 2016). The findings from this study indicate that more than half of the publications were multiple-authored with nearly one-third of the publications being contributed by three joint authors and the ratio of teamwork was higher than that of sole work. On the other hand, Onyancha (2007) and Ocholla et al. (2012) report that academicians from Africa do not prefer publishing works and doing research collaboratively. The majority of research articles from journals in Africa are dominated by single-authored publications followed by double-authored and triple authored articles which is an indication of a low level of research collaborations among scholars in this part of the world. Nevertheless, the authorship pattern shows that the research output of the authors worldwide is fairly collaborative. This means that the number of multiple-authored articles exceeds the number of single-authored articles, thus there is a higher degree of collaboration (Alanazi, Baladi &Ul Haq, 2018).

2.8 Subject-wise Distribution in Research and Publications

The subject-wise distribution looks at the area or topics that have been more researched or written by different scholars. The subject literature analysis lies in the fact that it contributes to the understanding of that subject and it further provides a critical comparison of different areas or topics where a researcher can contribute in terms of publications. A study by Pedraza (2021) reports that Small and Medium Enterprises (SMEs) and business research are the most researched area by scholars. These subjects are considered to be attractive and emerging new topics which help to provide greater awareness, skills, and knowledge on how to introduce new small businesses, products, markets or how to be an entrepreneur. Other studies have been conducted in other fields to indicate the subject-wise distribution of research and publications in journals. For example, the studies by Thanuskodi (2010) and Hussain and Swain (2011) show that issues related to libraries and the internet were the most researched subject while that of Edewor (2013) indicates information technology ranked the highest. The study conducted by Forsythe et al. (2019) reveals that Library and Information Communication and Technology (ICT) had more publications followed by general librarianship, library user education and library statistics while social media ranked the least among the researched area. This may be attributed to the fact that every field of human being depends on the application of ICT.

2.9 Journals of Preference in Research

Journal of preference is a selection or choice of authors in publishing scientific works. Scholars strive to publish their research ideas, thoughts and innovations in quality journals to influence societal change and make positive contributions in their fields of endeavour. There are two kinds of journals preference to publish researchers' work; that is local and

international journals. The quality of the journal is facilitated by its visibility, accessibility and coverage which make researchers to choose the most preferred and qualified journals to publish their works (Adjei & Owusu-Ansah, 2016). Scholars prefer to publish their research idea into quality and visible journals for people to know their extent in publishing such as the number of research and publications produced, author research quality and the number of citations scored. Therefore, the journal of preference is one of the core parts of doing bibliometric analysis. Academicians and administrators have attempted to rank journals based on some hierarchy of quality. Despite several years of debates, there is still no universally accepted journal rank, but several journals have earned the distinction of consistently making the list of high-quality journals compiled by various authors. For example, Chan et al. (2013) identify the Journal of Finance as the leading finance journal. Several other studies such as Cooley and Heck (2005) also include the Journal of Finance among their list of top five finance journals in addition to demonstrating substantial consistency for other top journals. Sangeda & Lwoga (2017) reported the distribution of articles in journals of preference. The findings in this study showed that most Tanzanian researchers published their works in journals that covered the field of medical sciences, which was followed by agricultural journals. A study by Lancaster (1982) reports that many academicians in developing countries prefer to publish in foreign journals rather than in their native journals for the sake of prestige and recognition.

3. Methodology

This study employed a cross-sectional research design using both qualitative and quantitative research approaches to permit the analysis and output to complement each other to reach the desired conclusions. The population for this study comprised all academic staff affiliated to SoB at Mzumbe University from 2007 to 2020. The selection criteria include: firstly the names of the authors listed in the MU website as SoB academic staff member either present, shifted to another institution or retired, and secondly, authors have authored or co-authored at least one publication either in a form of journal articles, book chapters, book reviews or conference papers. The bibliometrics analysis focused on publications and citations available online only which could be retrieved using the Google scholar platform. The publications and citations that were not online when this study was conducted were not included in this study.

Census and purposive sampling techniques were used to select SoB academic staff members for this study. The census sampling method is a statistical enumeration where all units or members of the population are involved in the study. Bailey (1994) cited by Lwoga & Sife (2014) recommends that when the study population is small, all items of the population should be involved in the study. Thus all 58 academic staff members in SoB were involved in this study. The rationale for choosing a census sampling technique is its suitability for a small population, it covers all items without any element of chance left out and the highest accurate findings are obtained. Furthermore, under the census investigations, the intensive study is conducted as every unit of the population is covered and therefore it unbiasedly leads to obtaining reliable data and with negligible error. Purposive sampling was employed in this study to select the cases that deliberately provided important information that cannot

be obtained from other choices as suggested by (Taherdoost, 2016).

Quantitative data for this study were collected through PoP software using (http://scholar.google.com) that relies on raw data from Google Scholar to establish author citation and impact analysis which measures the impact of publications over a given period of time (Harzing, 2007). PoP is a software that retrieves and analyses academic citations (Sangeda & Lwoga, 2017). It uses Google Scholar which is a free online search engine for scientific and scholarly literature and serves as a data source for bibliometric analysis. Compared to Web of Science and Scopus, Google Scholar has two key advantages. One advantage is that Google Scholar is freely available. No subscription is required. The other advantage is that Google Scholar offers a more comprehensive coverage of scientific and scholarly literature (Waltman & Noyons, 2018). PoP also provides important metrics for research output such as total number of papers, total number of citations, h-index, g-index, HI-norm index, h-annual, count and ratio of cites per years, cites per author, cites per paper, papers per author, therefore, becoming a potential tool for evaluating the research performance through measuring and tracking the impacts of published scientific publications that enhance the international reputation of individual, institution or country (Lukwale & Sife, 2017). To collect data through PoP, the following procedures were followed:

i. Using Google Scholar address: (http://scholar.google.com) click was made on the
ii. " profile of the author" link at the top of the page to get the account set up to start;
iii. Google Scholar would provide the groups of articles that belong to the author;
iv. Selection of articles that belong to the author was made; and
v. If articles were not seen, more searches were made.

The procedures enabled us to retrieve 253 publications, citations and other metrics such as h-index, g-index, Hc-index and HI-norm index for 58 SoB academic staff from Mzumbe University. Google scholar was used to obtain publication details such as author's name, year of publication, citations, subject area, document type, keyword, affiliation, publication type, journal name, issue number and volume. Qualitative data from 10 purposefully selected SoB academic staff members were collected through interviews. Quantitative data were analysed using MS Excel spread sheet whereas Qualitative data were analysed using the content analysis method.

4. Findings and Discussion of the Results

4.1 Distribution of Respondents

A total of 58 academic staff members from SoB were involved in this study. A total of 34.5% of respondents had a google scholar account and publication, 31% were not registered in google scholar profile but they had publications online whereas 34.5% of respondents neither had google scholar profile nor online publications (Table1). This implies that more than a quarter of respondents may have published only in print journals and books and they may also not yet understand the importance of publishing in open access and online journals.

Table 1: (N=58)

S/n	Category of Responses	Frequency	%
1	SoB Staff with Google Profile & Publications	20	34.5
2	SoB staff without google profile but have publications online	18	31.0
3	Staff with neither google profile nor publications	20	34.5
Grand Total		**58**	**100**

Source: *Field Data 2021*

4.2 Demographic Profile of Respondents

The findings show that the majority (79.3%) of the respondents were male, while there were only (20.7%) females (Table 2). These findings suggest that there is gender imbalance employment in SoB at Mzumbe University.

Table 2: *Demographic Profile of Respondents*

S/n	Rank	Males	%	Females	%	Total
1	Professors	0	0	0	0	0
2	Associate Professors	3	5.17	1	1.7	4
3	Senior Lecturers	8	13.9	3	5.2	11
4	Lecturers	17	29.3	3	5.2	20
5	Assistant Lecturers	17	29.3	4	6.9	21
6	Turtorial Assistants	1	1.7	1	1.7	2
Total		**46**	**79.3**	**12**	**20.7**	**58**

Source: *Field Data 2021*

The findings in Table 2 indicate that SoB has no academic staff in the rank of full professor. The majority of respondents were in the rank of Assistant Lecturers and Lecturers and a few Associate Professors. Few Associate Professors and Senior Lecturers may be associated with the lack of publishing culture which may hinder SoB academic staff to get promotions for higher academic ranks. Furthermore, the Mzumbe University Academic Staff Scheme of Services (2019) mandates academic staff to publish for promotions as well as for the University visibility.

An in-depth interview with the Dean of SoB yielded the following remarks:

> …There are very few Senior Lecturers at SoB. This might be contributed by the fact that SoB academicians are not publishing enough articles, books or book chapters with reputable publishers so as they can qualify for promotions to the senior academic ranks (Dean SoB, Mzumbe University, June, 2021).

In another interview, one SoB senior lecturer gave his views in a lamenting manner

as follows:

> … DRPS is not doing what it is supposed to be doing. To my understanding, DRPS is supposed to promote and coordinate sustainable research, insisting on publications and innovation culture within the university. This is not properly done, thus one should not expect academic staff to have a culture of publishing (SoB Senior Lecturer, June, 2021).

These findings are similar to those of Jung (2012) who notes that academic staff fail to publish because of lacking a publishing culture. He further adds that the time for teaching versus for research and heavy workload, poor research policies and lack of financial incentives for conducting research affect self-publishing determinations.

4.3 Growth of SoB Literature for the Period between 2007 and 2020

Findings in Figure 1 depict that 58 SoB academic staff members published a total of 253 publications during the span of 14 years from 2007 to 2020. This gives a yearly average of 18 publications for all academic members, 4.4 publications for each academic staff for all 14 years and a yearly average of only 0.3 publications for each academic staff. The year-wise distribution of SoB publications shows that the highest number of research output was 34 (13.0%) published in the years 2018 and 2019, followed by the years 2016 and 2020 which had 25 (10%) publications. On the other hand, the year 2014 had a total of 24 (9.0%) publications whereas the years 2008, 2009, 2010 and 2011 recorded the lowest number of research outputs with single-digit publications and the year 2007 had zero 0 (0%) publication. The findings indicate that the most productive years within the fourteen years were 2018, 2019 followed by 2016 and 2010. The findings in this study imply that although publications were produced every year, the trend does not show a consistent growth pattern within the fourteen years of the study period. Such a trend of publication might be attributed by the unreliable availability of research funds which are often obtained through donor support. It could also be because of the prolonged manuscripts publishing process. Most of the reputable journals take a long time to publish articles, similarly, such journals may also have very few publication frequencies that is twice or thrice per year.

Furthermore, findings show that there were very few publications at SoB during the years 2007, 2008, 2009, 2010 and 2011. An interview with the Head of Research and Publication at the DRPS yielded that:

> …A low trend of publications at Mzumbe University could be attributed to various factors including lack of motivation in publishing, shortage of research funds, and a small number of academic staff with PhD who could assume a role of mentoring junior staff in research and publications. From 2007 to 2011, Mzumbe University was at its infant stage because it had only 4 years since it became a full-fledged University from the then Institute of Development and Development (IDM). This also had a negative impact on the growth of publications because before IDM was promoted to a full-fledged Mzumbe University, promotions were based on seniority or number of years served, and very little attention was paid into publications (DRPS- Head of Research and Publications, June, 2021).

In another in-depth interview with the DRPS Head of Research and Publications as to why there was a low growth of publications within four consecutive years, the said head of department provided the following remarks:

> … Google scholar started to operate officially in 2004, the time when MU had only three years since it became a full-fledged university. At that time, no one had an idea of registering into the online research platforms for citation purposes. As a result, most of the MU publications were on offline platforms and no way they could be cited. It is only in 2020, the DRPS announced that every MU academic staff should register in google scholar, and in other platforms such as Research Gate and ORCID which can track and record authors citations (DRPS – Head of Research & Publications, June, 2021).

These findings are similar to that of Powers et al. (1998) who report that the low growth of publications is caused by a lack of awareness by academicians on the existence of online research platforms where they can publish their works for citations and visibility. In other two in-depth interviews with SoB academic staff concerning the low growth of research productivity, the responses were as follows:

> …It is true that growth of SoB research and publications was very low from 2007 to 2011 because at that time most of the academic staff were lacking publishing skills, which resulted in the production of poor papers which in turn were not accepted in international and local journals. There was also lack of institutional motivations in publishing. These were worsened by an acute shortage of academic staff, which make the existing academic staff to have very heavy teaching workloads and therefore lacking ample time to engage themselves in publications (SoB Senior Lecturer, June, 2021).

In an in-depth interview with one of the junior academic staff, the following responses were given:

> ...We lack appropriate mentorship from senior academic staff, which may result in the production of publications of dubious quality which cannot be accepted for publication in reputable journals (SoB Junior Lecturer, June 2021).

These findings are in conformity with that of Chen et al. (2010) and Sife & Lwoga (2014) who report that the low growth of publications in universities is a result of heavy teaching work loads, poor collaboration in publications, and lack of publications skills.

In the years 2012-2020, there was a steady growth of SoB publications from a single-digit in 2008-2011 to double-digit in the year 2012, and 2018, and 2019 became the most productive years with 34 (13%) publications which was probably due to the awareness created to the SoB academicians on the need of doing research and publications. According to TCU (2019) standards and regulations, for academicians to get promotion, they must publish. The presence of a favourable publishing environment and the institution's amendment of its publication policy which insists that academic staff should be instrumental in doing research and publishing led to the steady publication growth of SoB academic members of

staff in that particular period. This is in similarity with Sahoo et al. (2015) who found that the growth in publications in academic institutions is the result of amendments and review of publication policy.

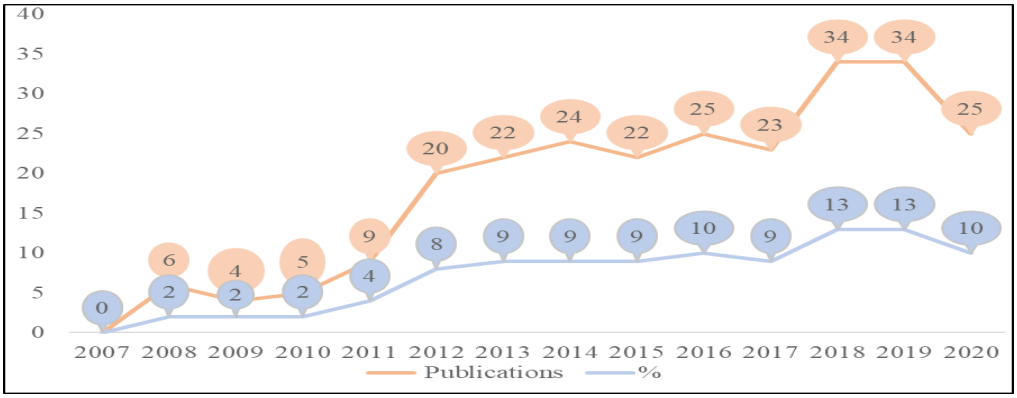

Figure 1: *SoB Publication Growth Trend 2007 – 2020*
Source: *Google Scholar 2021*

During an interview with the DRPS Director, the following remarks were recorded:

> …The University amended its Research and Publication Policy in 2010. The amendment was in line with setting aside funds to promote research and publication. The University also improved ICT infrastructure and the University library started subscribing to e-resources which enabled lecturers to access more resources. Financial incentives were also provided to the academic staff who managed to publish their journal articles, book chapters and books. Prize giving and publications recognitions were provided during convocation meetings. These strategies acted as an impetus in stimulating publications at Mzumbe University (DRPS Director, June, 2021).

These findings are similar to that of Lwoga & Sife (2013) who reported that there was an increase in the rate of publication in East Africa during the 2010s which was associated with advancement and improvement in ICT infrastructure in the higher learning institutions.

4.4 SoB Senior Lecturers Research Publication Productivity

The analysis of individual productivity for SoB senior lecturers involved examining the prevailing trend in carrying out research based on the number of publications (Table 3). Results indicate that Dr. Hawa Tundui ranked number one with the highest number of publications (20) in that study period. Dr. Nsubi Isaga with 13 publications ranked number four followed by Dr. Cosmas Mbogela, Prof. Geraldine Rasheli and Prof. Harun Mapesa who ranked number five with a total of 11 publications each. Dr. Gabriel Komba had 10 publications, whereas Dr. Ernest Mwasalwiba, Dr. Kato Mushumbushi, Dr. Robert Makorere and Dr. Leornida Mwagike who had 8 publications each and the rest had the lowest number of publications.

Table 3: *Senior Lecturers Publication Productivity at SoB*

S/N	Name of Author	Academic Ranks	Total Publications	Overall Rank	Single Author	Collaboration	Papers_ Author	Authors_ Paper
1	H. Tundui	Senior Lecturer	20	1	5	15	10.3	2.2
2	N. Isaga	Senior Lecturer	13	4	7	6	9.1	1.8
3	C. Mbogela	Senior Lecturer	11	5	7	4	9	1.4
4	G. Rasheli	Associate Prof.	11	5	5	6	7.3	1.9
5	H. Mapesa	Associate Prof.	11	5	4	7	6.8	2.2
6	G Komba	Senior Lecturer	10	6	4	6	6.5	1.9
7	J. Kikula	Senior Lecturer	9	7	2	7	5.5	1.9
8	E. Mwasalwiba	Senior Lecturer	8	8	3	5	4.7	2.3
9	M. Kato	Senior Lecturer	8	8	0	8	4	2.3
10	R. Makorere	Senior Lecturer	8	8	4	4	5.8	1.6
11	L Mwagike	Senior Lecturer	8	8	1	7	4	2.3
12	N. Mrope	Senior Lecturer	7	9	3	4	4.2	2.4
13	G. Nyamsogoro	Associate Prof.	6	10	3	3	4.5	1.5
14	E. Kihanga	Associate Prof.	5	11	1	4	2.1	3.2
15	D. Meela	Senior Lecturer	3	13	2	1	2.5	1.3
Total			**138**		**51**	**87**		

Source: *Google Scholar 2021*

The results imply that the most prolific authors were Dr. Hawa Tundui, Dr. Nsubi Isaga and Dr. Cosmas Mbogela. In normal circumstances, one could expect the Associate Professors to take a lead in publications, but this was not the case. This may be associated with the assumption that maybe their publications are in print books and journals or they were not registered in the online research platforms such as Google Scholar, Research Gate and ORCID until recently and maybe they were also overwhelmed by administrative responsibilities at the university. This is contrary to the study by Amara, Landry & Halilem (2015) who note that senior academic staff members are supposed to be publishing frequently because of their experiences in research and that they are supervising postgraduate students from whom they can publish together.

4.5 Lecturers Publication Productivity at SoB

Findings in Table 4 portray the ranking of lecturers productivity by the number of publications they attained. Dr. Emmanuel Chao ranked number two with a total number of 19 publications, followed by Dr. Erasmus Kipesha who ranked number three with 14 publications and Dr. Arbogast Musabila who ranked number six with 10 publications, while the rest had the lowest number of publications or they had no publications on online platforms at all when this study was conducted.

Table 4 : *Lecturers Publication Productivity at SoB*

S/N	Author	Academic Ranks	Total Publications	Overall Rank	Single Author	Collaboration	Paper per Author	Authors per Paper
1	E. Chao	Lecturer	19	2	13	6	15.8	1.4
2	E. Kipesha	Lecturer	14	3	8	6	11	1.4
3	A. Musabila	Lecturer	10	6	1	9	4.1	3
4	N. Tutuba	Lecturer	8	8	0	8	3	2.8
5	D. Kibona	Lecturer	7	9	2	5	4	2.4
6	B. Maligwa	Lecturer	6	10	2	4	3.3	2.3
7	J. Moshi	Lecturer	5	11	2	3	3.03	2.4
8	P. Nsimbila	Lecturer	5	11	1	4	2.8	2
9	J. Swai	Lecturer	4	12	0	4	2	2
10	G. Mofulu	Lecturer	3	13	2	1	2.3	1.7
11	E. Makoye	Lecturer	3	13	2	1	1.8	2
12	M. Maziku	Lecturer	3	13	2	1	1.3	2
13	J. Kiria	Lecturer	2	14	1	1	2	1
14	A. Maziku	Lecturer	1	15	1	0	0.2	6
15	J. Myava	Lecturer	1	15	1	0	1	1
16	A. Mwakibete	Lecturer	0	0	0	0	0	0
17	M. Mohamed	Lecturer	0	0	0	0	0	0
18	J. Muhimila	Lecturer	0	0	0	0	0	0
29	J. Mnzava	Lecturer	0	0	0	0	0	0
20	P. Daudi	Lecturer	0	0	0	0	0	0
Total			**91**		**38**	**53**	**57.63**	**34.4**

Source: *Google Scholar 2021*

Furthermore, results indicate that Dr. Emmanuel Chao is the most productive author in the category of Lecturers at SoB with 19 publications. Dr. Erasmus Kipesha is ranked the second with 14 publications, followed by Dr. Arbogast Musabila with a total of 10 publications. The majority of lecturers had a low number of publications (single-digit publication), while others had no publications. The findings suggest that the scholars with zero publications for the study period might be that their publications were offline by the time when this study was conducted.

4.6 Junior Staff Publication Productivity at SoB

Findings indicate that Dr. Jasinta Msamula had 9 publications produced collaboratively

which made her ranked number one in the category of assistant lecturers. Mr. Emmanuel Akili had a total of 4 publications and the other two authors that is Mr. Muhamed Suleiman and Mr. Baraka Kambi had three 3 publications each. Three authors published the lowest number of publications with only 1 publication each, while the other 16 junior staff had no publication on online platforms at all (Table 5).

Table 5: *Junior Staff Publication Productivity at SoB*

S/N	Name of Author	Academic Ranks	Total Publications	Overall Rank	Single Author	Collaboration	Papers_Author	Authors_Paper
1	J. Msamula	Ass. Lecturer	9	7	0	9	3.1	3
2	E. Akili	Ass. Lecturer	4	12	3	1	3.2	2.3
3	M. Suleiman	Ass. Lecturer	3	13	2	1	2.5	1.3
4	B. Kambi	Ass. Lecturer	3	13	2	1	2.5	1.3
5	K. Willium	Ass. Lecturer	2	14	1	1	2	1
6	N. Masawe	Ass. Lecturer	1	15	1	0	1	1
7	P. Pascoe	Ass. Lecturer	1	15	1	0	1	1
8	S. Kitilla	Ass. Lecturer	1	15	1	0	1	1
9	M. Severin	Ass. Lecturer	0	0	0	0	0	0
10	F. Rilagonya	Ass. Lecturer	0	0	0	0	0	0
11	R. Muhabe	Ass. Lecturer	0	0	0	0	0	0
12	A. Msuya	Ass. Lecturer	0	0	0	0	0	0
13	O. Msaki	Ass. Lecturer	0	0	0	0	0	0
14	H. Kipangula	Ass. Lecturer	0	0	0	0	0	0
15	E. Mtui	Ass. Lecturer	0	0	0	0	0	0
16	H. Mhiche	Ass. Lecturer	0	0	0	0	0	0
17	M. Marco	Ass. Lecturer	0	0	0	0	0	0
18	M. Hudson	Ass. Lecturer	0	0	0	0	0	0
19	J. Katekere	Ass. Lecturer	0	0	0	0	0	0
20	D. Njovu	Ass. Lecturer	0	0	0	0	0	0
21	S. Juma	Ass. Lecturer	0	0	0	0	0	0
22	A. Seega	T. Assistant	0	0	0	0	0	0
23	K. Mwita	T. Assistant	0	0	0	0	0	0
Total			**24**		**11**	**13**		

Source: *Google Scholar 2021*

These findings suggest that SoB junior lecturers were not productive at all. This could be attributed with the lack of appropriate mentorship from senior lecturers. This corroborates the study by Chen et al. (2010) who finds out that when junior lecturers are not mentored by seniors, they become unproductive in publication and research. In one of the in-depth

interviews with junior academic staff at SoB, the following remarks were obtained:

> …We junior lecturers do not have publications because we lack appropriate mentorship and guidance from senior lecturers. The senior lecturers are not ready to team up with juniors in writing up projects, research and in publishing journal articles collaboratively (SoB Junior Lecturer, June, 2021).

4.7 Single-authored Publications

This section intended to identify SoB academicians who published papers individually. Findings indicate that Dr. Emmanual Chao ranked the first position by publishing a total of 13 papers individually, followed by Dr. Erasmus Kipesha who had eight papers, Dr. Nsubili Isaga and Dr. Cosmas Mbongela took the third position with only seven single-authored publications each. Dr. Arbogast Musabila and Dr. Leonarda Mwagike had only one publication published individually (Table 3 & 4).

These findings suggest that academicians with many single-author publications at SoB might be those with good research and publications skills and talents in paper writing. This is similar to what Annibaldi et al.(2010) who noted that writing and publishing scientific papers individually is a function of many factors including the institution where the author studies, interest in writing, the ability and talent of the researcher. Single-author publishing in higher learning institutions in Tanzania may also be influenced by both the government harmonised scheme of service for academics and the Mzumbe University for 2015. In those schemes, more points are awarded for single-authored works when it comes to promotion. For instance, these schemes award one point for a peer-reviewed journal article paper for a single author (MU Scheme of Service for Academic Staff, 2015; URT, 2014).

4.8 Collaborative Publications

Findings show that Dr. Hawa Tundui ranked number one with 15 collaborative papers, followed by Dr. Jansita Msamula and Dr. Arbogast Musabila with 9 collaborative publications each, Dr. Kato Mushumbushi and Dr. Nicholas Tutuba with 8 collaborative papers each respectively (Table 3, 4 & 5). The results suggest that many collaborative works are likely the results of a mentorship programme between senior and junior lecturers. In the academic year 2020/21, a total of 100 million Tanzanian shillings were set aside by Mzumbe Univesity management for research and publication. One of the conditionalities was a collaboration between senior and junior academicians. One top management officer was quoted saying that:

> …Since one of the prime motives of providing small research grants was for senior researchers to mentor junior ones, I would like to see junior staff (mentees) making presentations so that we can satisfy ourselves that they have indeed been mentored and they can now stand on their own feet to develop research projects. If mentoring has not happened in the course of implementing these projects, then we have missed the target of investing TZS 100 million in this exercise (MU Top Management Officer, June, 2021**).**

On the other hand, co-authorship publications may be negatively affected by the existing publication policies. For example, for a journal article in which one point is awarded for promotion purpose if it is written by a single author, the same point must be shared equally by the number of those who co-authored the journal article which in turn discourages collaborative paper writing.

Papers Per Author (PPA)

In determining papers per author of SoB academicians, the following formula by Harzing (2009) was used:

$$\text{PPA} = \frac{NX + fr}{NY}$$

Where: **PPA** = Papers per author
NX = Total number of articles
Fr = Fractional (n/1)
NY = Number of author counts

$$\text{Dr. Emmanuel Chao PPA} = \left(13 + \frac{1}{3} + \frac{1}{4} + \frac{1}{4} + \frac{1}{2} + \frac{1}{2} + \frac{1}{2}\right)$$

$$\text{Dr. Emmanuel Chao PPA} = 15.8$$

The PPA for SoB academicians shows that Dr. Emmanuel Chao ranked the first with 15.8 PPA, followed by Dr. Erasmus Kipesha with 11 papers and Dr. Hawa Tundui with 10.3 papers. The results suggest that Dr. Hawa Tundui failed to maintain her first position in this metric because she had a lot of papers published collaboratively. This suggests that in evaluating individual research performance, one should consider many measures instead of relying on a single indicator such as the number of publications (Sife & Lwoga, 2014).

4.9 Authors Per Paper (APP)

With respect to the Authors Per Paper (APP) analysis, Harzing (2009) formula was employed:

APP = NX/NY

Where: **APP** = Authors per paper
NY = Number of authors in a result set
NX = Total number of papers

$$\text{Prof. Ernest Kihanga APP} = \left(\frac{1x1 + 1x3 + 3x4}{5}\right)$$

$$\text{Prof. Ernest Kihanga APP} = 3.2$$

The results reveal that Profesor Ernest Kihanga ranks the first with 3.2 authors per paper, followed by Dr. Arbogast Musabila with 3 and Dr. Nicholas Tutuba with 2.8 authors per paper. The findings show that these academicians published many works in collaboration.

4.9.1 Distribution of Citations of the SoB Academic Staff for the Period between 2007 and 2020

An assessment of the SoB academic staff for 14 years in terms of citations involves 38 (66%) academic staff who are registered and were visible in a Google Scholar platform. A total of 20 (34%) SoB academicians were not visible in the Google Scholar platform (Table 1).

Table 6: *Rank-list of SoB Scholarly Impact Based on Citations (N=38)*

S/N	Author's name	Ranks	Citations	Number of Publications	Years	Cites/Year	Cites/Paper	Cites/ Author	H_index	G_index	HI_norm
1	E. Mwasalwiba	Sen. Lecturer	924	8 (8)	11	84	116	874	5	8	3
2	E. Kipesha	Lecturer	398	14 (3)	9	44	28	302	9	14	9
3	H. Tundui	Sen. Lecturer	193	20 (1)	12	16	10	107	6	13	4
4	M. Kato	Sen. Lecturer	190	8 (8)	9	21	24	95	1	8	1
5	N. Isaga	Sen. Lecturer	176	13 (4)	9	20	14	141	6	13	6
6	G. Nyamsogoro	Assoc. Prof.	88	6 (10)	11	7	13	71	3	6	2
7	J. Kikula	Sen. Lecturer	88	9 (7)	8	11	10	44	2	9	2
8	R. Makorere	Sen. Lecturer	81	8 (8)	9	9	10	80	4	8	4
9	G. Komba	Sen. Lecturer	71	10 (6)	13	5	7	25	3	8	2
10	N. Mrope	Sen. Lecturer	65	7 (9)	3	5	9	36	5	7	4
11	D. Kibona	Lecturer	54	7 (9)	12	5	8	28	4	7	4
12	A. Musabila	Lecturer	42	10 (6)	9	5	4	34	3	6	1
13	C. Mbogela	Sen. Lecturer	37	11 (5)	12	3	3	27	4	5	3
14	E. Kihanga	Assoc. Prof.	36	5 (11)	11	3	7	12	4	5	2
15	G. Rasheli	Assoc. Prof.	35	11 (5)	7	5	3	23	3	5	3
16	L. Mwagike	Sen. Lecturer	32	8 (8)	13	2	4	16	3	5	3
17	J. Moshi	Lecturer	30	5 (11)	7	4	6	15	1	5	1
18	E Chao	Lecturer	23	19 (2)	11	2	1	21	3	3	3
19	M. Suleiman	Ass. Lecturer	19	3 (13)	5	0.3	1	3	1	1	1
20	J. Swai	Lecturer	18	4 (12)	8	2	5	9	3	4	2
21	N. Tutuba	Lecturer	16	8 (8)	3	5	2	6	2	3	2
22	M. Maziku	Lecturer	14	3 (13)	9	2	7	14	1	2	1
23	B. Maligwa	Lecturer	13	6 (10)	5	2.6	2.2	5	2	3	1
24	E. Akili	Ass. Lecturer	10	4 (12)	13	1	5	10	2	3	2
25	H. Mapesa	Assoc. Prof.	9	11 (5)	13	1	1	8	2	2	2
26	J. Msamula	Ass. Lecturer	9	9 (7)	10	1	1	3	1	2	1
27	A. Maziku	Lecturer	7	1 (15)	7	1	7	1	1	1	1
28	P Nsimbila	Lecturer	5	5 (11)	10	1	1	3	2	2	1
29	B Kambi	Ass. Lecturer	3	3 (13)	10	0.3	1	3	1	1	1
30	D. Meela	Sen. Lecturer	2	3 (13)	6	0.3	1	1	1	1	1
31	G. Mofulu	Lecturer	2	3 (13)	5	0.4	1	1	1	1	1

S/N	Author's name	Ranks	Citations	Number of Publications	Years	Cites/Year	Cites/Paper	Cites/ Author	H_index	G_index	HI_norm
32	E. Makoye	Lecturer	0	3 (13)	2	0	0	0	0	0	0
33	J. Kiria	Lecturer	0	2 (14)	4	0	0	0	0	0	0
34	K. Willium	Ass. Lecturer	0	2 (14)	4	0	0	0	0	0	0
35	J. Myava	Lecturer	0	1 (15)	2	0	0	0	0	0	0
36	N. Masawe	Ass. Lecturer	0	1 (15)	3	0	0	0	0	0	0
37	P. Pascoe	Ass. Lecturer	0	1 (15)	7	0	0	0	0	0	0
38	S. Kitilla	Ass. Lecturer	0	1 (15)	13	0	0	0	0	0	0
Total			**2690**	**253**		**268.9**	**312.2**	**218**	**89**	**161**	**74**
Yearly Average of Citations			**192.14**	**18.0**		**19.2**	**22.3**	**15.6**	**6.4**	**12**	**5.3**

Source: *Google Scholar 2021*

Findings in Table 6 indicate various SoB scholarly impacts based on citation counts for fourteen years. Dr. Ernest Mwasalwiba ranked number one with the highest citation scores of 924 with just 8 publications followed by Dr. Erasmus Kipesha with 398 citations in 14 publications. Dr. Hawa Tundui ranked number three with 193 citations with 20 publications. Dr. Kato Mushumbusi had a total of 190 citations and Dr.Nsubili Isaga 176 citations. Dr David Meela and Dr. George Mofulu recorded the lowest citation score of 2 with 3 publications. Nevertheless, there were some academicians with publications but they had no citations. It should be noted, however, that if an academic staff shows weak citation metrics, this may be caused by a lack of impact on the field, working in a small field – therefore, generating fewer citations in total, publishing in a language other than English which restricts the citation field or publishing mainly in print books and journals (Harzing, 2007).

The results have shown that the most cited authors are distinguished from the ones with many publications. This means that some of the most prolific authors in terms of publications had few citations compared to some scholars with more publications. For example, Dr. Ernest Mwasalwiba who ranked number eight in terms of publications, with a low number of publications (8 publications), moved to the first position in a citation counts with 924 citations. This suggests that his publications were mostly read and used by other scholars, which might be due to the nature of subjects written, style of writing, relevance and the novelty of the topic or he has registered in online research platforms such as Research Gate or he has shared his publications through social media such as Facebook etc. On the other hand, Dr. Hawa Tundui who ranked number one in terms of publications dropped to number three in citation counts, whereas Dr. Emmanuel Chao who ranked number one in terms of the number of publications dropped to number 18 in citation counts with only 23 citations out of 19 publications. These results suggest that their publications might not be topical issues, lacking interest in the topic and might not be published in peer-reviewed journals which led to the invisibility of their works. These findings confirm the fact that one's citation counts depend on the number of publications and other factors such as the

visibility of journals where one publishes his or her work, quality of publications, author's integration into scientific networks, age of publications, the size of the scientific community and the subject or issues which one publishes (Lwoga & Sife, 2013).

4.9.2 Citations Per Year (CPY)

The scholar's yearly impact in the publication is obtained by using the Harzing & Van der Wal (2009) formula:

$$CPY = \frac{NC}{NY} \qquad \frac{\text{No. of Total Citations}}{\text{No. of Years of Publishing}}$$

Where: **CPY** = Citations per year
NC = Number of total citations
NY = Number of years of publishing

For example, Dr. Ernest Mwasalwiba CPY:
Total number of citations = 924
Number of years of publishing = 11

$$\text{Dr Ernest Mwasalwiba CPY} = \frac{924}{11}$$

$$\text{Dr Ernest Mwasalwiba CPY} = 84$$

Results in Table 6 indicate that Dr. Ernest Mwasalwiba ranked number one with an average of 84 citations per year and maintained his first position because he had many citation counts compared to other scholars. The second one is Dr. Erasmus Kipesha with 44 citations per year, followed by Dr. Kato Mushumbusi with 21 citations per paper who shift from the fourth position in the citations counts to the third position in citations per year.

4.9.3 Citations Per Paper (CPP)

The number of citations per paper of SoB academicians is calculated by using Harzing & Van der Wal (2009) formula:

$$CPP = \frac{NC}{NP} \qquad \frac{\text{No. of Total Citations}}{\text{No. of Publications}}$$

Where: **CPP** = Citations Per Paper

For example, Dr. Ernest Mwasalwiba CPP:
Total number of citations = 924
Total number of publications = 8

$$CPP = \frac{NC}{NP}$$

$$\text{Dr Ernest Mwasalwiba CPP} = \frac{924}{8}$$

$$\text{Dr Ernest Mwasalwiba CPP} = 115.5 \approx 116$$

Considering the number of citations given to each publication in Table 6, Dr. Ernest Mwasalwiba ranked the first with an average of 116 citations per paper, followed by Dr. Erasmus Kipesha with an average of 28 citations per paper, both maintaining their positions. Dr. Kato Mushumbusi ranked number three with 24 citations per paper who shifts from the fourth position to the third position. The average number of citations per paper indicates the extent to which certain publications generate interest in the scientific community.

4.9.4 Citations Per Author (CPA)

The average citations per author is obtained through the following Harzing & Van der Wal (2009) formula:

$$\text{CPA} = \frac{\text{NC}}{\text{NA}} \qquad \frac{\text{No. of Citations Per Each Paper}}{\text{No. of Authors}}$$

Where: **CPA** = Citations Per Author
NC = Number of Citations Per Each Paper
NA =Number of Authors

Taking into account the number of citations given to each author, the finding in Table 6 indicates that Dr. Ernest Mwasalwiba ranked the first with 874 CPA, followed by Dr. Erasmus Kipesha with 302 CPA both remaining in the top position in terms of quality of publications at SoB. Dr. Nsubili Isaga 141 ranked number three taking Dr. HawaTundui's position. This is because Dr. Tundui's citations emanate from many collaborative publications.

4.9.4.1 Other Popular Research Indices which Measure Scholarly Impact and Productivity

SoB academicians were also ranked based on various indices including H-index, G-index, and HI norm.

4.9.4.2 H-Index

According to Harzing & Van der Wal (2008), h-index is the most robust and accurate measure of productivity and impact. The findings in Table 6 indicate that Dr. Erasmus Kipesha had the highest h-index of 9. This means that his 9 publications had been cited 9 or more times each, and the rest of the papers had fewer than 9 citations. The second ones were Dr. Hawa Tundui and Dr. Nsubili Isaga with an h-index of 6 each respectively. This means that their six publications had been cited 6 or more times each.

4.9.4.3 G-Index

Analysis based on a G-index gives more weight to the authors' highly cited publications.

G-index has more power to distinguish publications with higher impact making it easier to differentiate the performance of authors. According to Egghe (2006) "[Given a set of articles] ranked in decreasing order of the number of citations that they received, the g-index is the (unique) largest number such that the top g articles received (together) at least g^2 citations". Findings show that Dr. Erasmus Kipesha ranked first with a g-index of 14, maintaining his first position twice. Dr. Hawa Tundui and Dr. Nsubili Isaga ranked number two with a g-index of 13 each (Table 6).

4.9.4.4 Hi-norm (i10-index)

The HI-norm-index evaluates the effects of co-authorship by adjusting the total citations by the number of authors also called individual h-index (i10-index). HI-norm-index is calculated by using this formula: "normalize the number of citations for each paper by dividing the number of citations by the number of authors for that paper, and then calculate the h-index of the normalized citation counts". The results in Table 6 show that Dr. Erasmus Kipesha continues to be the champion with the highest HI-norm of 9, followed by Dr. Nsubili Isaga who ranked number two with Hi-norm of 6. Four consecutive authors Dr. Tundui, Dr. Makorere, Dr. Mrope and Dr. Kibona ranked number three with Hi-norm of 4 each respectively. These findings imply that SoB academicians had considerable variation among themselves in research productivity and impact measures since no single academic staff at SoB managed to maintain the same rank in all metrics. Hence, these findings support the argument that research performance is a complex multifaceted endeavour that cannot be assessed using a single indicator (Lwoga & Sife, 2013).

4.9.5 Authorship Pattern of Publications at SoB

The findings in Fig. 1 show that contributions of SoB publications were dominated by single-authored publications. This suggests that SoB academic staff do not prefer to undertake research and publications collaboratively. These findings are similar to those of Onyancha & Ocholla (2007), Lwoga & Sife (2014) and Ocholla et al. (2012) who report that academicians do not prefer publishing works and doing research collaboratively in Africa.

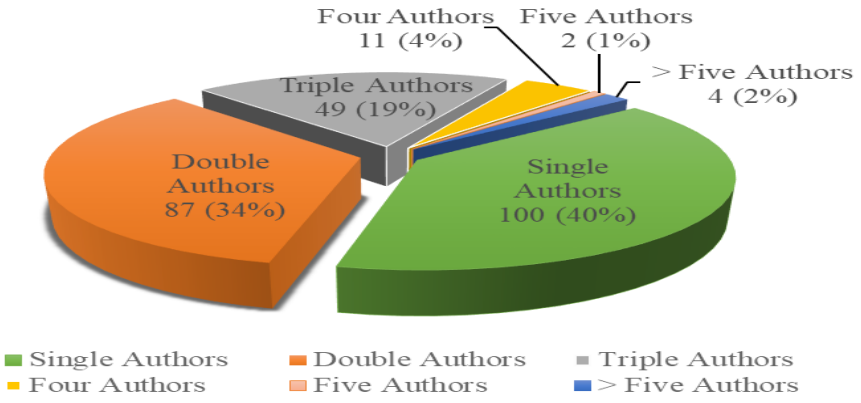

Figure 2: *Authorship Pattern of SoB Publications*
Source: *Google Scholar 2021*

4.9.6 Degree of Collaboration in SoB

The degree of collaboration (DC) is the ratio of the number of multi-authored research papers to the total number of research papers (single author+ multi-authors). *DC* can statistically be calculated using Subramanyam (1983) formula:

$$DC = \frac{NM}{NM + NS}$$

Whereas DC = Degree of collaboration in a particular field
NM = Number of multiple-authored publications
NS = Number of single-authored publications

For example, in the year 2020, the single-authored paper was 3 and the multi-authored paper was 22.

$$DC = \frac{NM}{NM + NS}$$

$$2020,\ DC = \frac{3}{3+22}$$

$$2020,\ DC = 0.88$$

The degree of collaboration worked out for the 14 years under review ranged between 0.2 and 0.88 DC. The findings indicate that the year 2020 reported the highest DC of 0.88, followed by 2019 with a DC of 0.85. The years 2018, 2008, and 2017 had DC of 0.67, 0.66 and 0.64 respectively. However, the years 2010 and 2011 recorded the lowest DC of 0.2 respectively. The average collaboration of SoB academicians is 0.49 DC which is an indication of the low level of collaboration at SoB (Table 7). This corroborates Onyancha & Maluleka (2011) and Confraria & Godinho (2015) who report that research collaborations within African countries are still low when compared with extra-Africa collaborations.

Table 7: Degree of Collaboration in SoB

Year	NS	NM	Degree of Collaboration CC = NM/(NM + NS)
2007	0	0	0
2008	2	4	0.66
2009	3	1	0.25
2010	4	1	0.2
2011	7	2	0.2
2012	11	10	0.45

Year	NS	NM	Degree of Collaboration CC = NM/(NM + NS)
2013	9	13	0.59
2014	10	14	0.58
2015	14	8	0.36
2016	13	12	0.48
2017	8	14	0.64
2018	11	23	0.67
2019	5	29	0.85
2020	3	22	0.88
Total	**100**	**153**	**0.6**

Source: *Google Scholar 2021*

These results suggest that SoB academicians do not have a culture of doing research and publishing collaboratively. Inadequate collaboration may affect research and publication productivity. It is, therefore, emphasised that DRPS needs to insist on research collaboration to increase research productivity in SoB and at Mzumbe University at large. Collaboration in research is often recommended as it: enables researchers to share skills and techniques; enhances transferring of knowledge (especially tacit knowledge); brings about the cross-fertilization of ideas; provides intellectual companionship; plugs the researcher into a wider scientific network; and enhances the visibility of research works (Sife & Lwoga, 2014).

In one of the in-depth interviews, one respondent provided the following remarks:

> …Research collaboration among ourselves is very important in our school because it will enable SoB academicians to share research writing skills, increase the visibility, growth of SoB literature, transfer of tacit knowledge and produce quality research output (SoB Senior Lecturer, June, 2021).

However, research collaboration should be carried out with care to avoid the possibility of having honorary or ghost authors in the publications. Honorary or ghost authors are the authors who are given authorship status in the publications without active participation in the intellectual work.

4.9.7 Subject-wise Distribution of SoB Publications

Results in Table 8 indicate the top 20 most researched areas by SoB academicians for the fourteen years. The SMEs were the predominant areas of publication with a total of 32 publications. Business research had a total of 30 publications. The third was procurement with a total of 29 publications. Marketing and business industrial sector had a total of 27 and 22 publications respectively. Entrepreneurship and microfinance had only 20 publications each.

Table 8: *Subject-Wise Distribution of SoB Publications*

S/N	Subject	No. of Publications
1	Small and Medium Enterprises (SMEs)	32
2	Business	30
3	Procurement	29
4	Marketing	27
5	Business Industrial Sector	22
6	Entrepreneurship	20
7	Microfinance	20
8	Accounting and Beekeeping	15
9	Trade Credit and Supply	15
10	Finance	12
11	Women Entrepreneurship	11
12	Tanzania Firms/Enterprises	11
13	Bank Performance	11
14	Logistics and Supply Chain	11
15	Agricultural Sector Trade	10
16	Micro and Small Business	7
17	E-Tax System	7
18	Local Government	6
19	Economics	5
20	ICT	5

Source: *Google Scholar (2021)*

The findings suggest that SoB academic staff are more interested in writing on business issues such as SMEs. The SMEs researches are considered to be attractive and emerging topics that help to create awareness, introduce new skills and knowledge on how to conduct small business, introduce new products and how to market them (Pedraza, 2021). More research investments in this area may be an attempt to reduce the problem of lack of employment opportunities among those who would like to participate in the entrepreneurship business in Tanzania to alleviate poverty.

The findings further show that issues related to the Tanzania Development Vision 2025 and the Second National Five Years Development Plan (FYDPII 2016/17 – 2020/21) did not feature directly in their researches and publications. Also, contemporary issues like

Tanzania and the Fourth Industrial Revolution (4IR), poverty reduction, transforming Tanzania into a semi-industrialized nation, ICT and development and improvement of the quality of life and human wellbeing were not well-addressed in their researches and publications. This shows that SoB scholars did not publish their works in line with the Tanzania Development Vision 2025.

4.9.8 Journals of Preference by SoB Academicians

Findings in Table 9 show the list of the top 15 journals in which SoB academicians published their paper articles. The table presents only those journals with four and above publications. The Uongozi Journal of Management and Development Dynamics (UJMDD) ranked the first with a total of 11 publications. The International Journal of Business and Economics Research had 8 publications. This is mainly because UJMDD is MU owned journal which suggests that the SoB academicians prefer publishing in their native journal. The Journal of Business and Management Sciences, and the Research Journal of Finance and Accounting had 7 publications each, followed by other journals.

Table 9: *SoB Academicians Journals of Preference (N=58)*

S/N	Journal	Website	No. of Publications
1	Uongozi Journal of Management and Development Dynamics	https://ujmdd.mzumbe.ac.tz	11
2	International Journal of Business and Economics Research	http://www.sciencepublishinggroup.com	8
3	Journal of Business and Management Sciences	htttp://www.sciepub.com	7
4	Research Journal of Finance and Accounting	https://www.iiste.org	7
5	ACRN Journal of Finance and Risk Perspectives	https://www.acrn-journals.eu	6
6	Afrika Focus	https://brill.com	6
7	Journal of Strategic Innovation and Sustainability	https://articlegateway.com	5
8	European Journal of Business and Management	https://iiste.org	5
9	American Journal of Management	https://articlegateway.com	4
10	European Journal of Business, Economics and Accountancy	http://www.idpublications.org	4

S/N	Journal	Website	No. of Publica-tions
11	International Journal of Business and Commerce	https://www.ijbcnet.com	4
12	International Journal of Social and Administrative Sciences	http://www.aessweb.com	4
13	International Journal of Development and Sustainability	https://isdsnet.com	4
14	International Journal of Economics, Business and Management Research	https://ijebmr.com	4
15	Huria: Journal of the open university of Tanzania	https://journals.out.ac.tz	4

Source: *Google Scholar (2021)*

The findings further indicate that majority of SoB academic staff published their research and articles/papers in a wide range of foreign journals. The reason might be due to the visibility, prestige, and recognition which enable the researchers to get more citations. Furthermore, the results show that only two Tanzanian journals that is UJMDD and Huria: Journal of the Open University of Tanzania had 4 or more publications, which reveals the scarcity of relevant and peer-reviewed journals in the country. An in-depth interview with one of the senior lecturers in SoB regarding the journal of preference provided the following remarks:

> ….We prefer to publish our research findings in foreign journals rather than in local journals because they are of high quality, they have high visibility, and they are published by reputable and famous institutions. Additionally, most of them are indexed in academic databases like Emeraldinsight, Sage, Taylor, and Francis and therefore the possibility of our works to be cited is relatively high than the case with local journals (SoB Senior Lecturer, June, 2021).

These findings corroborate that of Lancaster (1982) who reports that authors in the developing countries prefer to publish in foreign journals rather than in their native journals for the sake of gaining prestige and recognition.

5. Conclusion and Recommendations

5.1 Conclusion

Based on the findings of this study, it is concluded that the growth of research and publications has been very low at SoB for the period of 14 years, which is an indication that SoB scholars do not conduct research adequately and they also publish less. This may be associated with inadequate research collaborations, lack of friendly and favourable research policy, little awareness about online research platforms such as registering on

Google Scholar, Research Gate and ORCID among others, inadequate publishing skills and lack of interest in publications. This will not only lead to few senior academicians at SoB because they will not be promoted to higher ranks because of the failure to attain the required publication criterion but also there will be a low awareness about the research focus in this area of specialization.

5.2 Recommendations

The study recommends the following:

i. Since most of the SoB academicians published with UJMDD, the study recommends that the DRPS should fast-track registration or indexing the journal with reputable academic databases like AJOL, SAGE, Emerald, etc., for its contents to be visible worldwide.

ii. It is also recommended that the DRPS in collaboration with librarians should prepare a comprehensive list of indicative reputable journals and databases where academic staff can use for publishing their scholarly works. This will minimise the possibility of SoB academicians to fall into a trap of publishing their works in predatory journals.

iii. The study recommends that mentorship of junior staff by seniors should be compulsory and monitored. Every senior academic staff should be assigned at least two junior staff to mentor in research and publications. This can be enforced if this item will be taken as one of the objectives to be evaluated in the Open Performance Review Appraisal System (OPRAS) for senior academic staff at SoB.

iv. Registration of academic staff in platforms that make scholarly publications visible online should be mandatory for every academic staff. Such platforms include Google Scholar, Research Gate, and ORCID just to mention a few. Such an endeavor will bear good fruits if librarians will be involved.

v. Capacity building through frequent training on issues pertaining to paper writing, publications, and research proposals writing should be an order of every school, faculty, directorate, campus, and institute at the university. This will enable academicians to produce publishable scholarly works which in turn will promote both the university and an individual author.

vi. DRPS should amend the research and publication policy with regards to mentoring juniors, academic staff, increasing research funds, and increasing the distribution of points each author should get for the collaborative works. This will help to increase research collaboration and mentorship as well as research and publication productivity at Mzumbe University.

vii. Researchers should recognise that it is important to publish their research articles in journals that are widely visible such as e-journals and particularly open access journals which can be captured by popular scholarly academic databases to receive many citations.

5.3 Contributions of the Study

This study aimed at contributing to a better understanding of research productivity of SoB researchers at Mzumbe University for the period between 2007 and 2020. The findings of this study will be the basis for the provision of recommendations for future research activities in this field and will also help the management to create friendly and favourable environment, policy and other supportive factors regarding the research productivity at Mzumbe University. The study will also equip librarians and other academicians with basic knowledge on publication trends, coverage, quality and characteristics which are necessary for librarians in making informed decisions in library collection development for selecting journals and other scientific publications for the subscription in the library within the limited budget granted.

5.4 Suggestions for Future Research

i. This bibliometrics analysis was limited to SoB. Therefore other studies should cover all MU schools, faculties, directorates and other campuses publications.

ii. Future bibliometrics research should investigate factors that determine the research performance of individual academicians at SoB or of all Mzumbe University scholars.

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