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ASSESSING QUALITY AND PRODUCTIVITY OF JOURNAL PUBLICATIONS USING A BIBLIOMETRIC APPROACH: A PLATFORM TOWARDS WORLD CLASS EDUCATION

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INTRODUCTION

Quality and productivity have become increasingly pertinent in the wake of rapid changes that are happening in the marketplace (Nik Mustapha, 1995). Nowadays, these two are still widely accepted as key competitive enablers for organizations in both public and private sectors including the Higher Education Institutions (HEIs). HEIs bear a profound moral responsibility to increase the awareness, knowledge, skills and values needed to create a just and sustainable future (Libunao and Peter, 2013). These institutions are mandated to develop intellectual and conceptual frameworks to achieve these goals. Previous studies, seminars and relevant research has also highlighted the importance of understanding quality and productivity of publications in HEIs.

Notwithstanding, quality is an elusive concept. In most dictionaries, quality have been defined as a high degree of goodness, a distinguishing characteristic or attribute, a high degree of a high standard of excellence, a high social status, an authorized level of superiority, a regularized, accepted, predetermined and correct level of competence and performance. According to Foster and Ganguly (2013), quality is related with productivity, profitability and sustainability. Summer (2010) in his book wrote that Deming define quality as 'non-faulty system', to Juran quality is a concept that needs to be found in all aspects of business and Crosby defined quality as conformance to requirements. In practical wise, some definitions listed by Goetsch and Davis (2014) are (i) quality as performance to the standard expected by the customer, (ii) meeting the customer's needs the first time and every time, and (iii) doing the right thing right the first time, and always striving for improvement, and always satisfying the customer. Thus, quality can be difficult

to comprehend. If we ask 10 people, we may end up with ten different definitions. In Malaysia, quality has been a theme adapted in general by educational providers (Sohail, Rajadurai and Rahman, 2003). In higher educations, quality is the matter about teaching and research (Green, 1994).

If quality in education is difficult to define, it is because quality depends on many important factors. Nonetheless, it is often associated with teaching and learning. In term of teaching, quality education may be measured with lecturers having up-to-date knowledge in his or her subjects. In terms of academic research, quality may be associated with research output and publications. According to Lombardi, Craig, Capaldi and Gater (2000) among the nine measures of the top universities is research activities. In Malaysia the same criteria has been applied in which The Ministry of Higher Education (MoHE) has put more emphasize on the quality of scholarly journals published by Malaysian academics (Malaysian Citation Centre, 2012). In 2012, a research done by Zainab, Sanni, Edzan and Koh (2012) has audited the quality and productivity of journals published in Malaysia. There were 464 scholarly journal titles published in Malaysia, and higher activity was recorded in the 2000s due to more emphasis on quality that has been put by the MoHE (Zainab, Sanni, Edzan and Koh, 2012). It is worth noting that in this age of globalization and global competitiveness, high quality level of publications and productivity are critical to ensure sustainability of Malaysia HEIs. Henceforth, the study aims to investigate the diffusion of articles publication in UUM in a myriad perspective by using a bibliometric approach.

EDUCATION IN MALAYSIA

Malaysia's Higher Education System (HES) comprises of Public Universities, Private Higher Educations and Foreign University branches (Kementerian Pengajian Tinggi Malaysia, 2007). Public universities (also known as UA) comprise of about 60% of all HEIs and are fully funded by the government. The US or private universities are those that have been set up and funded by private companies. Meanwhile, foreign university branches offer internationally recognized degrees in collaboration with universities abroad. Education is a pivot pillar to measure any nation. Malaysia is in the quest to be a developed nation status by the year 2020. Human capital is a substantial criterion to be a developed country. Thus, the government has spearheaded an effort to transform the national education system at all levels, from pre-school to higher education (Kementerian Pengajian Tinggi Malaysia, 2007).

Internationalization is rapidly changing the landscape of HEIs, and a quest to be the best university is a common goal of all universities. Malaysia education is impacted by the globalization, where Marginson, Kaun and Sawir (2011) stated that, universities are in glonacal dimension, which is referring to local, national and global dimensions. Hence, the challenge of Malaysia Higher Education is to provide quality and relevant education that helps produce employable graduates who are multilingual and multi-literate to cope with the requirement of the workplace (Koo and Pang, 2011).

In a global stage, organizations always seeking an edge, that will set them apart from the competition (Summers, 2009). However, it is not walk in the park with fierce competition and daunting challenges. Competition can be in the form of many variables such as price, value, features, and nearly everything related to the products or services.

In terms of higher education, the two most well-known university rankings are QS World University and *Times Higher Education* World University Rankings. The primary aim of the QS World University Rankings is to help students to make informed comparisons regarding their study options. According to QS World Ranking (QS, 2014), since first being compiled in 2004, the rankings have expanded to feature more than 800 universities around the world, with far more (over 3,000) assessed. The top 400 universities are given individual ranking positions, and after that universities are placed within a group, starting from 401-410, up to 701 plus. The rankings compare the top 800 universities across four broad areas of interest to prospective students: research, teaching, employability and international outlook. These four key areas are assessed using six indicators, each of which is given a different percentage weighting.

Academic reputation (40%) measured using a global survey, in which academics are asked to identify the institutions where they believe the best work is currently taking place within their field of expertise. The employer reputation indicator (10%) is based on a global survey. The purpose of the employer survey is to give students a better sense of how universities viewed in the job market. A higher weighting is given to votes for universities that come from outside of their own country, so it is especially useful in helping prospective students to identify universities with a reputation that extends beyond their national borders. The next criterion is the student to faculty ratio (10%). This is a simple measure of the number of academic staff employed relative to the number of students enrolled.

In the meantime, indicator for citation per faculty (20%) aims to assess universities' research output. A 'citation' means a piece of research being cited (referred to) within another piece of research. Generally, the more often a piece of research is cited by others, the more influential it is. So the more highly cited research papers a university publishes, the stronger its research output is considered. Meanwhile, the *Times Higher Education* World University Rankings list the best global universities and are the only international university performance tables to judge world class universities across all of their core missions - teaching, research, knowledge transfer and international outlook. The top universities rankings employ 13 carefully calibrated performance indicators to provide the most comprehensive and balanced comparisons available, which are trusted by students, academics, university leaders, industry and governments (The World University Rankings, 2014). Thirty percent of evaluation is come from research (Volume, income, reputation). This category is made up of three indicators. The most prominent, given a weighting of 18 per cent, looks at a university's reputation for research excellence among its peers, based on the 10,000-plus responses to our annual academic reputation survey. This category also looks at university research income, scaled against staff numbers and normalized for purchasing-power parity.

This is a controversial indicator because it can be influenced by national policy and economic circumstances. But income is crucial to the development of world-class research, and because much of it is subject to competition and judged by peer review, it was a valid measure. This indicator is fully normalized to take account of each university's distinct subject profile, reflecting the fact that research grants in science subjects are often bigger than those awarded for the highest- quality social science, arts and humanities research. It is given a weighting of 6 per cent. The research environment category also includes a simple measure of research productivity - research output scaled against staff numbers. We count the number of papers published in the academic journals indexed by Thomson Reuters per academic, scaled for a university's total size and also normalized for subject. This gives an idea of an institution's ability to get papers published in quality peer-reviewed journals. Another 30 percent comes from citations (Research influence) for which refers to the role of universities in spreading new knowledge and ideas. The university will examine the research influence by capturing the number of times a university's published work is cited by scholars globally. The citations will describe how much each university is contributing to the sum of human knowledge: whose research has stood out, has been picked up and built on by other scholars and, most importantly, has been shared around the global scholarly community to push further the boundaries of our collective understanding, irrespective of discipline.

The lessons that we have learned from these university ranking could benefited Malaysian HEIs in studying article-journal quality and productivity as a benchmark to consider QS or The World University Rankings. Notably, the success of HEIs is everybody's responsibility, especially the academics for which one of the critical performance indicators are journal publications. Henceforth, this paper aims to analyze the quantity and productivity of publication in UUM for selected referred journals.

MEASURING QUALITY AND PRODUCTIVITY OF HEIs PUBLICATION

Bibliometric indicators seek to measure the quantity and impact of scientific publications as a proxy for the overall output of scientific research and are based on a count of scientific papers and the citations they receive. Together with patent indicators, they are one of the most frequently used indicators of research and experimental development (R&D) 'output' (UNESCO Institute for Statistics, 2005). According to Andres (2009), bibliometrics is a study science of science or the study of scientific literature that has a long history dating back to the early decades of the past century. However, until 1969 the term bibliometric first appeared in print (Pritchard, 1969). Furthermore, Andres added that, a scientific productivity can be analyzed in any research field, whether from natural science or the social sciences and humanities. But, the only requirement is to gather a set of publications about a given field. In addition, although a bibliometric study can be applied to define general productivity in a given area, it may also be used to evaluate the productivity of individual researchers, journals, countries or any other level of performance. Winking at the tradition of library studies, the term "bibliometrics," coined by Alan Pritchard in the late 1960s, stresses the material aspect of the undertaking: counting books, articles, publications, citations, in general any statistically significant manifestation of recorded

information, regardless of disciplinary bounds (Bellis, 2009). Therefore, the idea to study bibliometric is not only to evaluate the productivity, but also to see the quality.

Bibliometric is concern about quality and productivity. Therefore, a study on bibliometric also refers to a study about standard. In turn, a standard refers to document approved by a certain body that provides common and repeated use or rules, or guidelines or production method (Department of Standard Malaysia, 2009). Bibliometric applies mathematical and statistical methods, and is synonym with the scientometrics (Glanzel, 2003). Bibliometric indicators are also increasingly used in evaluation processes at universities and public and private research institutions, in addition to establishing various types of incentives for researchers (UNESCO Institute for Statistics, 2005).

The simple idea in a way to begin a bibliometric study is through descriptive analysis. Such measurements are temporal evaluation, number of authors, most productive authors, institutions and countries, language of document, type of literature or the subject category to which the document belongs. Through temporal evaluation, all significant information such as year, numbers or frequency of studies, percentage and cumulative percentage usually collected by researcher and displayed in a table and author production analyses the most productive authors. For example study by Zainab, Anyi and Anuar (2009), Putra, Bhattacharya and Verma (2006), Tew (2006), Sauvageau, Desnoyers and Godin (2009), Hood and Wilson (2001), Maamiry and Ghauri (2013), Thanuskodi (2001) and Campbell et. al (2010) that studied single journal. Single journals have been the focus of many bibliometric and scientometric studies (Warraich and Ahmad, 2011). Authorship, gender and institutional affiliation were studied by Pierre and Herubel (1999) in the literature published in Libraries and Culture. They focus on the gender of authorship and institutional affiliation. Twenty three years of Libraries and Culture were chosen as target volumes and the findings revealed that men published more than women in library history

According to Zainab, Anyi and Anuar (2009), bibliometric works on single journals began to emerge in other Asian countries such as Malaysia which contributed 6 titles (9.6%). They indicated that single journal study is of interest to bibliometrists who are fairly distributed worldwide. They also found that the journals studied are of some importance in their various fields as reflected by their indexation status. All journals studied are indexed and abstracted by major databases such as *Scopus* or/and *Science Citation Index* or/and the *Social Science Citation Index* as well as major discipline-based indexing databases. Most of the medical and health related journals studies are indexed by Medline. These journals are therefore considered influential or important enough to be studied to identify their publication productivity, authorship and citation patterns, as well the extent of their influence in attracting national and international contributions. Most importantly, the single journal studies have highlighted the variety of bibliometric measures that were used to study the content and format of a journal which subsequently reflected the characteristics of the literature and communication behavior in the fields they represented.

A more recent review on bibliometrics studies on single journals was carried out by Anyi, Zainab and Anuar (Anyi, Zainab and Anuar, 2009). In the study they covering 82 literatures published from 1997 to 2008 and they found (i) the number of bibliometric studies on

single journals in the sciences and technology remained high with 36% and when this was combined with studies on medical sciences (STM) journals (23%) the proportion increased to 59%. The number of bibliometric studies on journals in the field of library and information science (LIS) was 26% and in the arts, humanities and the social sciences was 15%. Out of the 82 studies, there were 62 unique journal titles as some journals especially in the field of library and information science were revisited in several studies. *JASIST*, *JDoc* and *Scientometrics* were revisited several times during the pre and post 1998 years reflecting their continued influence and importance in sustaining the interests of bibliometrists over the years; (ii) the majority of journals studied were published in the Asian and African countries (41.4%), followed by those from the USA (30.4%), Europe (18.2%) and the United Kingdom (10.0%). A high number of single journal bibliometrists were Indian and as such there were more contributions from India (28.0%). Out of the 62 unique journal titles studied 30.6% were Indian journal titles.

BACKGROUND OF JICT JOURNAL

This journal covers all aspects of information and communication technology, its theories and applications. JICT was abstracted and indexed in SCOPUS, EBSCOhost, Malaysian Citation Index (MyCite) and DOAJ (Directory of Open Access Journals). The aim of this journal is to provide coverage of the most significant research and development in the area of information and communication technology. To be accepted, a paper must be judged to be truly outstanding in its field and to be of interest to a wide audience. This journal particularly interested in work at the boundaries, both the boundaries of sub-disciplines of information and communication technology and the boundaries between information and communication technology and other fields. This is an open access journal. The articles on this site are available in full-text and free of charge to JIT web visitors through *http://www.jict.uum.edu.my/*. The ISSN Number is 2180-3862, and the printed ISSN Number is 1675-414X. Meanwhile, Penerbit Universiti Utara Malaysia is the publisher.

JICT is published by College of Arts and Sciences, Universiti Utara Malaysia. The JICT Editorial Boards accept submitted original research articles and critical theoretical reviews for consideration. The subject coverage include but is not limited to issues surrounding hardware, computer system organization, software, data, theory of computation, mathematics of computing, information systems, computing methodologies, computer applications, and computing milieus. As an open access journal, the articles are also available freely in full-text to online users. Furthermore, the JICT website does not require any personal information about its visitors to read, download, copy, distribute, print, search, or link to the full texts of these articles.

OBJECTIVES OF THE STUDY

The overall objective of this qualitative study is to quantify and clarify current status of quality and productivity of JICT publication for 122 articles from 2002 until 2015. The specific objectives are relating to the following areas:

1. To determine the status of JICT knowledge productivity as expressed in the form of scientific publications.
2. To identify the authorship or co-authorship pattern.
3. To ascertain the most privilege contribution of JICT publication.
4. To explore the affiliated institutes of JICT.

METODOLOGY

Methodology applied in the study is bibliometrics analysis. It is used to measures an established and prestige UUM journal in the field of management, i.e. Journal of Information and Communication Technology (JICT). This journal is one of the earlies journal published in UUM that has been in existence for more than 14 years. JICT also indexed in SCOPUS publication.

FINDING

With a total of 341 authors and 122 articles, the study found that there is positive correlation between number of authors and number of articles. The JICT is currently covers local and international contributors. In addition for the authorship pattern, JICT have a mixed condition, and in term of collaboration, JICT did not have very strong collaboration. The details will be explained as follows:

JICT productivity (2002 to 2015)

Table 6.1 shows that during the span of 14 years (2002-2015), the growth rate of publications was slow especially between 2004 to 2008, i.e. around 4.4% to 6.10% (from 15 to 25 articles). The rate has picked up from **2002** onwards with a 15.90% growth in 2003, 16.60% in 2004, 16.10% in 2005, 17.04% in 2006, 22.26% in 2007 and 29.16% in 2008. The biggest increase of 50.54% was recorded in 2009, followed by the year 2010, which saw an increase of 36.23%. The highest number of published article in a calendar year (13) was recorded in 2004 and 2012. On the other hand, the minimum number in a calendar year was 6 articles that were recorded from 2006 to 2008, as well as in 2010.

Table 6.1
JICT Productivity (2002 – 2015)

Years of Publica-tion	Authors				Articles				Language
	No. of Authors	%	Cum. No.	Cum. %	No. of Articles	%	Cum. No. of Articles	Cum. %	
2002	26	7.62	26	7.62	10	8.20	10	8.20	English
2003	27	7.92	53	15.54	12	9.84	22	18.03	English
2004	35	10.26	88	25.81	13	10.66	35	28.69	English
2005	21	6.16	109	31.96	7	5.74	42	34.43	English
2006	15	4.40	124	36.36	6	4.92	48	39.34	English
2007	15	4.40	139	40.76	6	4.92	54	44.26	English
2008	16	4.69	155	45.45	6	4.92	60	49.18	English
2009	23	6.74	178	52.20	8	6.56	68	55.74	English
2010	19	5.57	197	57.77	6	4.92	74	60.66	English
2011	19	5.57	216	63.34	8	6.56	82	67.21	English
2012	36	10.56	252	73.90	13	10.66	95	77.87	English
2013	35	10.26	287	84.16	10	8.20	105	86.07	English
2014	25	7.33	312	91.50	8	6.56	113	92.62	English
2015	29	8.50	341	100	9	7.38	122	100	English
Total	**341**	**100**	**341**	**100**	**122**	**100**	**122**	**100**	

Figure 6.1 illustrates JICT articles publication from 2002 to 2015. The graph shows early increment in the number of publications during the first three years since its inception. In 2002, the number of articles were 26 and the number of authors were 10. From 2002 to 2004, productivity had increased almost 34%, and the number of authors also surged to 30%. However, these numbers had shrunk significantly from 2004 until 2008. In fact, the numbers had not been encouraging in the following three years (2009-2011). From 2011 to 2012, we found the number of article increased to a double figure. The number of articles had increased approximately 90%, while the number of authors had increased around 63%. As number of contributing authors had increased over the past 14 years, it is worth noting that number of published articles had amplified correspondingly.
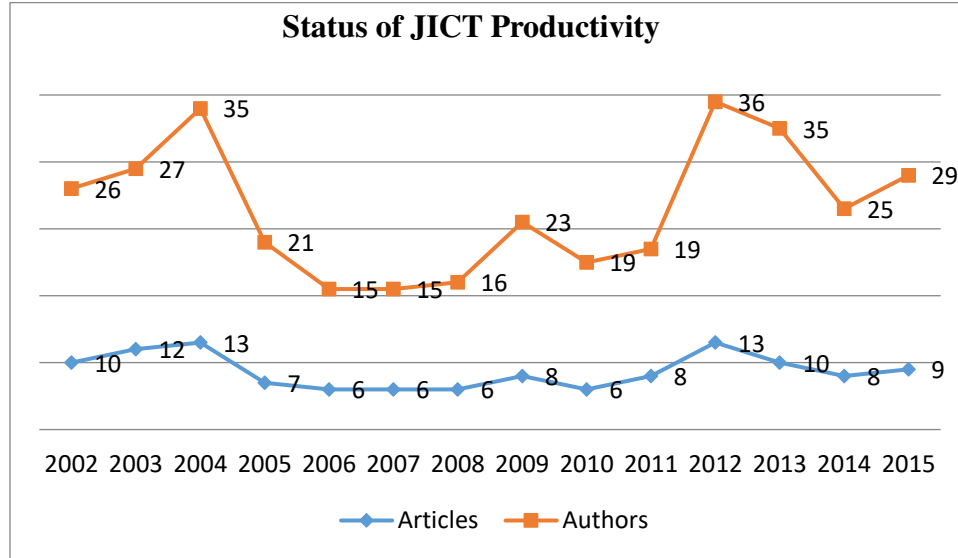
Figure 6.1
Line Graph – Status of JICT Productivity

Authorship and co-authorship pattern (Local)

There are 341 authors contributing to 122 articles between 2012 and 2015 (Table 6.1). The most productive authors appeared to be the chief editor of JICT. She has contributed 7 articles as a single author. The rest of the JICT editors were not as productive as her in publishing articles in JICT. The finding contradicts previous discovery in some of earlier studies. Zainab, Anyi and Anuar (2009) found that active authors such as Lee Sai Peck, Ling Teck Chaw, Phang Keat Keong and Zaitun Abu Bakar who have been the most productive authors of MJCS were also serving as the executive editors of the journal. Young (2001) found more than 50 percent of the top thirty *Library Quarterly* contributors had come from the editorial board. The studies on *Malaysian Journal of Library and Information Science* by Tiew, Abrizah and Kaur [53] indicated likewise that editorial members tend to be the most active contributors to the journal they were involved in.

Table 6.2
List of the Most Prolific Contributors of JICT

Group	Author's Name	Number of Articles
1	**Cohort: 1**	7
	K. R. Ku-Mahamud	
2	**Cohort: 2**	4
	Sazali Yaacob	
3	**Cohort: 3**	3
	Abdul Razak Hamdan; Basil Oluwafemi Akinnuli; Husniza Husni Kriti Priya; M.N. Sulaiman; M. Othman; Othman Ghazali; Rahmat Budiarto	
4	**Cohort: 4**	2
	Aziz Deraman; Azman Ta'a; D. Eric Johansen; David J. Greenwood; Engku Muhammad Nazri Engku Abu Bakar; Fadzilah Siraj; Farzana Kabir Ahmad; G. Udechukwu Ojiako; H. Ibrahim Huda Ibrahim; Husnayati Hussin;M.F. Shiratudin;Madhu Jain Mazni Omar;Mohd Yusoff Mashor; Nor Idayu Mahat; Norita Md Norwawi; Pandian M Vasant; Razman Mat Tahar; Rashidi Din; S. Deris; Samuel A. Oluwadare; Siti Mariyam Shamsudin; Suhaidi Hassan; S. Hashim; Wan Hussain Wan Ishak; Yuhanis Yusof; Zulikha Jamaludin	
5	**Cohort: 5**	1
	** 184 Authors	

Authorship Productivity Pattern

A total of 341 authors had contributed to the publication of 272 articles in JICT from1985 to 2007. The productivity of authors is shown in Table 6.3, which indicates that a third (333, 78.5%) of 424 authors had contributed only one article. Only one-third (91) of authors produced more than two articles between those periods. From that number, only 13 (2.9%) authors had contributed 5 or more articles.

Table 6.3
Authorship Pattern

No of Author (s)	Contribution in Years														Total of Article (s)	%
	02	03	04	05	06	07	08	09	10	11	12	13	14	15		
1	2	2	2	1	0	0	2	1	0	2	1	0	0	0	13	10.66
2	1	6	5	0	3	4	0	3	2	3	4	2	3	1	37	30.33
3	6	3	3	4	3	1	4	1	1	2	5	4	4	5	46	37.70
4	1	1	1	2	0	1	0	2	3	0	3	2	0	3	19	15.57
5	0	0	2	0	0	0	0	1	0	1	0	1	0	0	5	4.10
6	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0.82
7	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0.82
Total	10	12	13	7	6	6	6	8	6	8	13	10	8	9	122	100.0

It can be seen from Table-x that 46 (37.7%) articles had been produced by a three-author partnership. In the meantime, 37 (30.33%) articles had two authors, 19 (15.57%) were the collaborative efforts of four authors, and 13 (10.66%) had been the works of single author. The number of articles which has five or more authors is found to be from 5 (4.10%) to one (0.82%). It is evident that over the years level of collaboration is quiet high in the case of publications in JICT.

Institutions Collaboration

Over the last 12 years (2002-2015), local and international collaboration in information, communication and technology has been intensive investigated. Table 6.4 and 6.5 show the details of the strength collaboration. The study found that there is an exist collaboration within or amongst local and international collaboration. Table 4 shows local collaboration. It was displayed that Universiti Sains Malaysia (USM) became the highest institutions, followed by Universiti Teknologi MARA (UiTM), Universiti Utara Malaysia (UUM) and Universiti Malaysia Sabah (UMS). Meanwhile, for the collaboration between local and international institutions, during 2002 until 2015 the study found there was no strong collaboration. The most productive 5 local institutions are listed in the Table 6.5. Universiti Utara Malaysia ranked first (11 collabration), followed by the Universiti Teknologi Malaysia (2) and Universiti Kebangsaan Malaysia, Universiti Sains Malaysia and Multimedia University the third.

Table 6.4
Collaboration amongst Local Higher Institutions

Institutions	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	∑
UUM (1)	51	1	2				1												54
UPM (2)		7				1	1												9
UiTM (3)	2		2			2													6
UTM (4)	1			3															4
USM (5)	2			3	5														10
UKM (6)	3					1													4
UNIMAP (7)	1						3												4
UIAM (8)								2											2
UM (9)									2										2
UPSI (10)		1																	1
Uni PETRONAS (11)											1		1						2
UMS (12)			3									1							4
UniTEN (13)													2						2
UTeM (14)														1					1
UniZA(15)						1													1
UMP(16)	1																		1
Uni TELEKOM (17)		1																	1
Nilai Inst Col. (18)																	1		1

Table 6.5
Collaboration amongst Local and International Higher Educations

Institutions	Universiti Teknologi Malaysia	Universiti Utara Malaysia	Universiti Kebangsaan Malaysia	Universiti Sains Malaysia	Multimedia University
Cambridge University	1				
Nanyang Tech University					
Massey University		1			
Bangor University		1			
Karachi Institute		2			
Bandung Institute		1		1	
Uni. of Newcastle		2			
University of Gezira					1
University of Essex		1	1		
University of Jordon		2			
Saud University	1				
Hanyang University		1			
Total	**2**	**11**	**1**	**1**	**1**

DISCUSSION AND CONCLUSION

In higher education, bibliometric indicators very important for lecturers and the universities, as these measurements are often used in funding decisions, appointments, and promotions of lecturers. As more and more scientific discoveries occur and published research results are read and then quoted by other researchers, bibliometric indicators are becoming increasingly important. This article provides an overview of the currently used bibliometric indicators and summarizes the important elements and characteristics one should be aware of when evaluating the quantity and productivity of scientific output which is reflected to the vision of UUM.

UUM is already established as one of the famous destination for local and international students to pursue theirs study. This argument is based on the data that show it is increasing numbers of students are seeking education in UUM. However, the issue may arise is in maintaining and sustain the quality of UUM is related to the effectiveness of publications. Furthermore, the quality of teaching, publication, research and consultation is a key performance measurement in most higher education or university today. Furthermore, regardless types university when students or stakeholders making a choice, they are likely to consider the status of university. One of the pillars in considering the choice is an establishing publication. Thus, it is important to analyze and measure the quality and productivity of university publications, and the utmost approach on how measure the quality and productivity of publication is bibliometrics. It is the application of mathematical and statistical to analyze and measure the productivity of a particular researcher, quality or performance of a researcher's output and the structural indicators, which measure connections between publications, authors, and areas of research. This study is focus on Journal of Information, Communication and Technology (JICT).

From the study, it is proved that JICT plays important role to support UUM as an eminent management university. But, the trend of publish article and the number of authors during 2000 to 2015 is inconsistent. More effort must be made to improve the quality and productivity of articles published time to time. So as to ensure that UUM journals are in line with the current needs of the country and also at the same time are able to accommodate with global needs.

In summaries, UUMs need to continuously evaluate the journal publication that can equip students and stakeholders in line with current needs. The focus must be on the effort to enhance the capability of the UUM journal to enable it to perform its function well. The most important aspect that needs to be considered here is the ability of the journal to produce current and up-to-date outcome to fulfill the needs.

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